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24 Pages Of Useful Information!

1968 GUIDE
TO MORE PROFITABLE
SUGAR BEET PRODUCTION

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More Sugar Per Acre
Less Labor Required
Higher Beet Returns Forecast

Contracts are now being signed under which Great Western sugarbeet growers are likely to receive greater per-ton returns than ever. On the basis of early reports, company officials see a substantial acreage increase from 1967 over its entire 6-state area.

Total returns averaging about $17.70 a ton for beets of 1959-67 company-wide sugar average content were seen by GW spokesmen as a "strong possibility" if sugar price trends prevailing since the fall of 1964 continue through September 1969.

This compares with a prediction last December, by the executive vice president of the National Sugarbeet Growers Federation, of a 1968 U.S. average price of "well up around $17 per ton" for beets which in recent years have not had as much sugar content as those grown in the GW area.

Grower leaders have called the 1968 GW contract "far reaching and the best contract ever negotiated in the United States from the growers' viewpoint."

With current and prospective returns for alternative crops generally down from a year ago, and with beet sugar prices trending upward, the increase in 1968 GW beet plantings is coming from 1967 growers, new growers, and former growers who did not raise beets last year.

Absence of acreage allotments in 1968 gives many growers another chance to build up "history" from recent levels.

GW agriculturists can supply growers in each district with a comparison of what average total sugarbeet payments have been and might be in each local territory. Returns for each grower, however, differ because of sugar content and other variables.

Here, however, is what the picture looks like company-wide, for a ton of average 1959-67 sugar content beets, for the last three crops, with estimates for the 1967 and 1968 crops:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Sum of GW basic and Sugar Act basic payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964</td>
<td>$14.94</td>
</tr>
<tr>
<td>1965</td>
<td>15.42</td>
</tr>
<tr>
<td>1966</td>
<td>16.18</td>
</tr>
<tr>
<td>1967 (estimated)</td>
<td>17.00</td>
</tr>
<tr>
<td>1968 (estimated)</td>
<td>17.70</td>
</tr>
</tbody>
</table>

The foregoing estimates for 1967 and 1968 assume that net returns for sugar will show the same upward trend registered from October 1964 through January 1968. Actual
net returns may, of course, turn out to be lower or higher than these assumptions. Unfortunately, nobody has a crystal ball clear enough to see exactly what will happen to general economic conditions or to the sugar market from now until October 1969.

For the first time the 1968 GW beet-purchase contracts contain a tie-in with quoted prices for raw cane sugar at New York, the raw material of the refiners. The net return for GW 1968 beet-price payment purposes, except in two specified instances, cannot be less or more than margins stated in the contract over raw sugar prices to prevail during the period October 1968-September 1969. This innovation, subsequently adopted in contracts of several other companies, was sought by GW growers as a means to minimize the risk of certain sugar market fluctuations.

Raw prices in January, 1968, averaged $7.41 per cwt., up $.28 from January, 1967. Such prices for the last three crop years have averaged as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964</td>
<td>$6.63</td>
</tr>
<tr>
<td>1965</td>
<td>6.91</td>
</tr>
<tr>
<td>1966</td>
<td>7.22</td>
</tr>
</tbody>
</table>

Raw prices by months for the 1967-crop year to date, compared with the 1966-crop year for the same months, have been as follows:

<table>
<thead>
<tr>
<th>Month</th>
<th>1967</th>
<th>1966</th>
</tr>
</thead>
<tbody>
<tr>
<td>October</td>
<td>$7.37</td>
<td>$7.15</td>
</tr>
<tr>
<td>November</td>
<td>7.38</td>
<td>7.12</td>
</tr>
<tr>
<td>December</td>
<td>7.30</td>
<td>7.14</td>
</tr>
<tr>
<td>January</td>
<td>7.41</td>
<td>7.13</td>
</tr>
<tr>
<td>Average</td>
<td>$7.365</td>
<td>$7.135</td>
</tr>
</tbody>
</table>

GW's confidence in a continuing strong sugar market was demonstrated last November by its highest initial payment in history—$12 a ton for 1967 beets. Combined with Sugar Act basic payments, GW grower's average 1967-crop returns, with more to come, have already totaled $14.34 a ton.

With eyes turned toward promising sugar market prospects, many growers in the GW area, weather permitting, are planning for early 1968 beet seeding. They know that, normally, the longer beets can grow the higher the sugar content. And this year, each one percent of sugar content above 15 percent will be worth about $1.23 more per ton of beets.

If in Doubt, Ask Jerry

If anybody is reluctant to use chemicals for fear of losing tonnage, let him talk to Jerome Pyette, agriculturist in the Hysham, Mont., area.

Five of Jerry's growers were in the Billings High-Ten in 1967. They all used chemicals on some 227 acres and averaged 25.48 tons per acre.

Here they are, and their High-Ten records: Alex Wetsch, seven times in High-Ten; Kolb Brothers, Leslie, Raymond, and Clarence, eleven times in twelve years; Keith Kimball, three times in the past four years; W. E. Williams, five times in eight years; and Maynard Simmerman, last year.

Congratulations to Bill Kelly!

All associated with the beet sugar industry were happy to learn that William Robert Kelly of Greeley recently received the annual Headgate Award from the Four States Irrigation Council for civic service to irrigation. One man was chosen for the award from Colorado, Wyoming, Kansas, and Nebraska. Mr. Kelly, a water attorney for 63 years, was one of the architects of the Colorado-Big Thompson Irrigation Project. He once was president of the Colorado Bar Association.

OUR COVER PICTURE

Editor's Note: It has been my privilege to edit Through the Leaves for the past 36 years. Future issues will be in other hands. On the cover of this, my last issue, I liked the idea of contrasting one of my early springtime planting photographs with the kind of equipment we are using now.

—T. H. Ferril
The Gypsum Blocks Will Tell You:

Don’t Gyp Your Beets on Moisture

Use of the Bououcos Moisture Meter in Montana last year again confirmed what many have been saying about irrigation for years. Timeliness and quantity of water applied are the essentials of irrigation. When you go into a dry field, the beets may look healthy but they are merely existing, waiting for moisture before any rapid growth can take place. Water, being the carrier of nutrients in the soil, necessarily regulates the growth of the plant. If it is freely accessible the plant can grow rapidly but if it is limited the plant growth is slowed.

Experience with the meter emphasized that frequent irrigations are necessary and that they should be applied with a minimum of excess soaking.

Moreover, the benefit of rain may be misleading. In only two weeks after constant rain in June, the meter showed the need for more moisture.

Agriculturist Wayne M. Thaler said: “I believe the growers who waited longer to irrigate during this time slowed the growth of their beets and possibly lost tonnage that was never regained during the season.”

The Bououcos system involves burying gypsum blocks at varying depths in the soil. Electrodes imbedded in the blocks enable measurement of moisture absorbed, activating the meter to give readings of percentage of available moisture.

A comprehensive report of the Montana tests, month by month, was prepared by Mr. Thaler and created a great deal of interest in recent meetings held with growers.

Eliminate Guesswork on Your Guess-rows

Edwin J. Kuntz, grower at Fee and Custer stations in the Billings factory district, came up with a simple and effective way to insure accurate guess-rows. He mounted a small ditcher to a 1 3/4” cultivator bar. Then he slipped this solid bar inside the hollow 2” tool bar on his Eversman incorporator. Instead of guiding over the center of the tractor, he has the ditcher set so that it makes a small ditch which his wide front tractor follows perfectly. He can glance down and see if the machine is on the ditcher mark.

Mr. Kuntz, secretary-treasurer of the local beet grower association, was real pleased with the way this helped do a better job of thinning and cultivating operations, and it certainly limited harvest losses with his two row IHC harvester. —Robert L. Pierce, Agriculturist

Seeing How the Other Fellow Does It

Several Chinook growers traveled to Billings January 10 to study progressive methods of growers in the Billings area. The International dealer, Ole Lundeen, sponsored the tour.

Farms visited were those of Ray Strecker, William Michael, Ishmael Yost, and Don Greenwalt where on-the-farm feeding is being conducted. These growers are utilizing all their home grown by-products including their beet tops. They have also mechanized their crops to the point where very little labor is required and they are producing outstanding yields.

Growers making the trip from Chinook were: John Brummer, Phillip Kessel, George Neibauer, John Jenkins, Bill Overcast, Dan Overcast, Roy Nash, Robert Forseth, Duane Tangen, George Green, Roger Johnson, Ralph Patrick, and Gayle Patrick.

—Loren D. Tweet, Agriculturist
Owen Elected GW President

Great Western's new president, Robert R. Owen, is a former executive of the Ford Motor Company with comprehensive background in agricultural engineering.

Robert R. Owen, former executive of the Ford Motor Company, is now president of The Great Western Sugar Company. His election was announced Feb. 16 by William M. White, Jr., chairman of Great Western United Corporation, parent firm of GW Sugar.

He succeeds as president Earl F. Cross whose resignation for reasons of health was announced Jan. 31.

Mr. Owen was formerly general manager, equipment operations, for the Ford company in Detroit.

In making the announcement, Mr. White said, "Robert Owen's distinguished career as an agricultural engineer and his eminence in the general management field will give to Great Western Sugar Company the dynamic leadership needed to advance our programs in all areas. I am confident that Great Western Sugar's future as an aggressive producer and marketer of sugar products will be assured under Mr. Owen's guidance."

Robert R. Owen is an agricultural engineering graduate of the University of California. He served with the U.S. Corps of Engineers during World War II. He now holds the rank of Brigadier General, United States Army Reserve, and is division commander, 7th USAR Division.

Following active military service, he joined Del Monte Corporation as an agricultural engineer in Honolulu. In 1949, he went to Wilmington, Delaware, as a technical representative for DuPont Company. He returned to Honolulu where he

Earl F. Cross resigned as GW president for reasons of health.
lulu in 1950 as manager, engineering department of the Pineapple Research Institute, where he remained until 1956.

Mr. Owen then joined the Ford Motor Company in Birmingham, Mich., with the tractor and implement division. He rose to implement planning manager, product planning and programming manager, assistant chief engineer, equipment product development manager, and finally to general manager of equipment operations.

He is a member of American Society of Agricultural Engineers, Society of Automotive Engineers, American Association for the Advancement of Science and the Reserve Officers Association.

Owen and his wife, Barbara Burton Owen, have five daughters in college and in the Birmingham, Mich., schools.

On Jan. 31, Chairman White of Great Western United announced a number of major management changes in the Great Western Sugar Company.

Lloyd T. Jensen was advanced to senior vice president—operations. Benjamin A. Oxnard was promoted to senior vice president, and Claude Petitt replaced Oxnard as vice president, sales.

The agricultural and chemical research activities have been combined under Whitney Newton II, who was elected vice president—research. Three departments under Mr. Newton’s control will be headed by Dr. R. K. Oldemeyer, director—agricultural research; Daniel A. Muller, director—chemical research; and John E. Hedde, general chemist.

R. Ralph Wood becomes director—agricultural services, reporting to Fred G. Holmes, vice president—agricultural administration.
More Than $25,000 in Awards and Prizes Offered by GW in Sugarbeet Contest

How about a trip to Phoenix for two? Plus $200 in cash? How about other cash prizes? The Great Western Sugar Company is offering more than $25,000 in awards and prizes in a sugarbeet contest.

Contests will be held in 1968 within each Great Western and Northern Ohio factory district to help us develop more knowledge on how to grow the maximum tonnage of sugarbeets with a minimum amount of field labor.

In seven factory districts the first prize will be two round-trip airline tickets to Phoenix, Arizona, plus $200.00 in cash. The second prize will be $200.00 in cash. These districts are Eaton, Greeley, Longmont, Brighton, Ovid, Sterling and Goodland.

In four districts, in addition to the same first and second awards, there will be a third cash prize of $100.00. These districts are Loveland, Scottsbluff-Gering, Mitchell and Lovell.

In the Fort Morgan and Bayard districts, in addition to the foregoing, there will be a fourth cash prize of $50.00; and in the Billings district there will be a fifth cash prize of $25.00.

In every district the winning contestant's agriculturist will receive a duplicate prize.

Terms of the contest for Northern Ohio Sugar Company growers are similar for first and second prizes in the Fremont and Findlay districts, respectively, except that a two-tie trip to Miami, Florida, instead of to Phoenix, the first prize, plus $200.00, the same as offered in the GW districts.

One contestant will be selected from an agriculturist's district, and the contestants selected within a factory district will compete against each other. Contestants will be selected from among those growers in an agriculturist's district whose post card entry applications were received at the factory on or before March 14, 1968. The contestant within an agriculturist's district will be chosen from the applicants in such district by having a non-employee of Great Western or Northern Ohio draw a name from among those of such applicants.

The contestant selected in each agriculturist's district will be required to enter into separate 1968 beet contract in the form used in his district covering an exact 10 measured acres of sugar beets. The 10 acres may be selected by the contestant and will be measured before planting by the contestant's agriculturist. The contestant may use any method raising sugar beets he desires on his measured acres. The sugar beets from such measured acres must be harvested, weighed and delivered separately from other beets grown by the contestant.

At the completion of the harvest, the contestant selected in each agriculturist's district will receive a cash award of $100 toward the payment of any special expenses he may have incurred because of participation in the contest, providing he completes the contest in accordance with the contest rules and harvests his 10 measured acres.

PRIZES WILL BE AWARDED IN ACCORDANCE WITH THE FOLLOWING SIMPLE CONTEST RULES

Tons per acre and manhours of field labor per acre are the key. Scoring will be on a point system. In order to be considered for a prize, the yield from a contestant's 10 measured acres must at least equal the average yield per acre of all sugar beets harvested within the contestant's factory district.
A credit of 5 points will be given for each ton by which the average yield per acre from the contestant’s 10 measured acres exceeds the average yield per acre of all sugar beets harvested within the contestant’s factory district. A credit (or a penalty) of 10 points will be given (or deducted) for each average hour per acre of field labor used on a contestant’s 10 measured acres below (or above) an established standard of 15 manhours per acre.

Fractional yields in average tons per acre in excess of the average yield in the factory district and fractional credits (or penalties) for each average hour of field labor per acre used on the 10 measured acres below (or above) the established standard of 15 manhours per acre will be determined proportionately.

The contestant within the factory district receiving the highest numerical score under the above point system will receive the first prize. Second prize will be awarded to the contestant receiving the next highest number of points.

The contest will be conducted on the honor system. Maintenance of an accurate record of the number of manhours used on the 10 measured acres will be the joint responsibility of the contestant and his agriculturist. Awards and prizes will be determined by the Southern, Northern or Eastern District Manager for the factory districts within their areas, and the decisions of such District Managers will be final. All prizes and awards will be made upon completion of the 1968 harvest season.

This contest is subject to all federal, state and local regulations and any liability for federal, state or other taxes imposed on prizes or awards is the sole responsibility of the winners. A contestant’s entry in the contest constitutes acceptance of the rules.

No Labor Worries for Vic

Vic’s spring work comes easier because he started it last fall.

Victor Frank, who delivers his beets to Siding Two station, west of Billings, is expert in growing beets without outside labor. Since the discontinuance of Nationals in 1964, Victor has been producing his usual 35 acres of beets with chemicals and his GW thinner along with a couple of 5-inch hoes which he and his wife have sparingly used.

Vic starts by planning his beet crop the previous year. Here in the accompanying picture he was plowing down green pea straw to be summer fallowed and made ready for next year’s beets. By eliminating weeds in previous crops, he has been getting excellent weed control through overall spraying of one quart of Avadex and one quart Tillam which he immediately harrows into the soil twice over before planting 6 seeds per foot.

After the plants have 6 to 8 true leaves, he uses an 8-spoke one-inch knife, going over each field one, two or, if necessary, three times which he feels has worked very satisfactorily for him. Later in the season he and his wife spot hoe wherever weeds are, or do a little beet trimming where necessary. The following data the past five years proves he has not sacrificed any yield through his methods of thinning over his old way in 1963 and 1964 as compared to station average.

<table>
<thead>
<tr>
<th>Year</th>
<th>Labor</th>
<th>Acres</th>
<th>T/A</th>
<th>Station Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1963</td>
<td>Nat’l</td>
<td>36.0</td>
<td>16.04</td>
<td>17.66</td>
</tr>
<tr>
<td>1964</td>
<td>Nat’l</td>
<td>38.0</td>
<td>21.08</td>
<td>15.86</td>
</tr>
<tr>
<td>1965</td>
<td>None</td>
<td>35.1</td>
<td>15.99</td>
<td>12.46</td>
</tr>
<tr>
<td>1966</td>
<td>None</td>
<td>35.5</td>
<td>21.43</td>
<td>16.85</td>
</tr>
<tr>
<td>1967</td>
<td>None</td>
<td>36.0</td>
<td>19.88</td>
<td>18.86</td>
</tr>
</tbody>
</table>

—John W. Sherman, Agriculturist
One must be careful not to build walls unless he is fully aware of what is walled in and what is walled out. Wall building at best is a risky endeavor, particularly during periods of rapid technological change made possible by the discovery of proven alternatives to accepted practice.

Often, we fail to take advantage of recent opportunities available in chemical weed control because of unpleasant experiences during early developmental stages or skepticism based on absence of knowledge. Essentially, the attitude of non-participation amounts to 'wallowing off our mind to change which is natural until we learn the facts.

Current Facts:

Planting sugar beets in weedy ground without applying herbicides is too great a risk to take in 1968. Results with new chemicals and improved methods show conclusively that near complete chemical weed control is possible from split-application, viz., pre-plant plus post-emergence. The record shows that odds are much in our favor to obtain at least 80 percent success from a single herbicide application, either pre-plant or post-emergence. These favorable odds are reflected by current usage figures among Great Western growers of 95 percent in Montana and at least 85 percent of the sugar beet acreage covered in Wyoming. Growers in both the northern and southern districts have made unprecedented progress due largely to individual persistence and the courage to try and succeed.

Consult and Act:

A beginner in chemical weed control can find competent advice on the best materials and methods suited to a particular field by consulting the area agriculturist. Examine in detail elements of farm practice including water availability and machinery because these items and the way they are employed affect herbicide application method and consequently performance. Select the chemical and application method based on an overall analysis of the management, agronomic (soil, water and weeds present) and the economic features of the situation. Plan back-up and alternative chemical and/or mechanical schemes to control weeds, particularly in the event something goes wrong, and to control weed escapes or late weed infestations until harvest. Act on your plans this spring to make them a successful reality.

Watch for Pitfalls:

The best laid plans precisely implemented sometimes go wrong, although chemical weed control non-performance often is caused by untimely management decisions. We have little control over weather, yet most seemingly adverse field conditions may be modified enough to promote favorable results by continued field examination and prudent alternative action.

Primarily, the limiting factor affecting pre-plant chemical weed control effectiveness is the lack of timely moisture, principally overhead moisture. Furrow irrigation supplements lack of sufficient moisture to a great extent but not completely. If spring weather after planting and pre-plant chemical application remain dry without some rain (about one-half inch) within the emergence period, the grower should expect somewhat less weed control, even when furrow irrigation is employed early. When faced with this situation, activate your plans for supplemental chemical control (post-emergence) or use mechanical weed control measures.

Under cool, dry and warm, or wet spring weather following pre-plant application, expect some chemical retardation of seedling beets, depending on herbicide and rate of chemical dissipation. Visit the retarded field daily and check on the recovery rate which usually occurs within ten days. Irrigate if necessary to keep plants actively growing, and know that a selective chemical dosage causes little to no stand reduction. Temper this judgment with the fact that herbicides properly applied, although retardation exists, more-than-likely
Incorporate Ro-Neet or Pre-Beta-1 at the 1 1/2- to 2-inch soil depth with a properly calibrated and adjusted power-driven incorporator.

will increase root yield because of the elimination of weed competition.

Sub-standard post-emergence weed control frequently results from treating relatively large or drought-stricken weeds. To correct this common error, it is best to anticipate weed growth and to apply a foliar treatment too early rather than too late. Also, apply irrigation water to a dry soil to promote active plant growth and chemical activity. In all post-emergence situations, check plant-growth rate daily before spraying because timing the spray at maturity stages when weeds are most susceptible is important. Usually, only a 7- to 10-day spray period exists for optimum performance. Temperature and particularly soil moisture reserve affect post-emergence spray performance. Daytime temperatures between 60 and 80°F, and the presence of dew at the leaf surface for about three continuous mornings optimizes effectiveness.

Do It Right:

Approach chemical weeding with the same precision and intent for success as the practicing physician. Employ proven success factors—knowhow, precision, timeliness and examination. Use properly selected, calibrated and adjusted equipment to apply the weed-killing chemical at the correct dosage for conditions.

If a broad-spectrum pre-plant program is selected, incorporate Ro-Neet, Ro-Neet + Avadex or Tillam + Avadex (Pre-Beta-1) at the 1 1/2-2-inch soil depth with a power-driven incorporator. Use the shallow incorporation depth for Pyramin + Herbicide 282. Incorporate the herbicide into relatively dry soil when the moisture content allows unimpeded planting.

Irrigate the field within seven days after chemical application and planting, in the absence of germinating precipitation. Consider the possibility of employing total coverage applications of Ro-Neet where dense weed infestations are expected especially on heavy textured soil. Incorporate with a harrow or other seed-bed machine, but reduce the chemical application rate by 25 percent on a unit area basis. Remember, improper incorporation of thiocarbamates produces costly, unsatisfactory weed control, although you may expect 85 percent broad-spectrum control except kochia when the job is correctly accomplished.

If a post-emergence program is selected, apply Pyramin + Dalapon + surfactant to small, actively growing pigweed, nightshade, lambsquarters and grass infestations. Topicide can be used effectively to control kochia especially following a pre-plant chemical like Ro-Neet. Post-emergence programs work well under simple weed infestations when there is lack of early irrigation water, on certain sandy, low-organic-matter soils, and to con-

(Continued next page)
If soil moisture is lacking, it is very important to irrigate the field within seven days after chemical application.

Control weeds that have escaped pre-emergence chemicals. Expect 80 to 90 percent weed control from post-emergence chemicals when the job is correctly accomplished. Treflan and Eptam may be used lay-by to control late emerging weeds in sugarbeet fields.

Progress Defined:
Technological advancement in chemical weeding is measured as much by cooperative effort as by measurable responses to treatment. We have fared well because of ready acceptance of new materials and methods when adapted by the grower to local conditions. Progress is a comfortable taskmate for those prepared to accept the challenge that comes from change. Mending walls in weed control means teaching your neighbor what you have learned in chemical weeding while looking ahead to changing to better herbicide practices in the future.

Lew Lost His Beets
But SAVED The Tops

Lewis Schroeder, Route 3, Billings, is a grower who doesn’t let conditions get him down. Last spring the Yellowstone River rose higher day after day, until it finally came out of its banks and flooded farms in the valley. Lew had a field that was partly thinned when this happened. The water stayed so long on the field that when it receded, there wasn’t much left. When the field finally dried out he decided to save what he could from it; he harvested the tops and ensiled them. We are proud to have growers like this in the Billings district who have the courage to make what they can out of what they have to work with. —Tom W. Mullowney, Agriculture

Conducting an autopsy on a drowned beet field (above) left to right: Tom Mullowney, Art Melby, Jerry Jarrell and Jim Gonyou; but darned if Lew Schroeder didn’t harvest those valuable tops and how. Note (below) his pile of silage.
LPC as Protein Supplement

By J. D. LINDER, J. K. MATSUSHIMA AND K. L. KNOX

Liquid Protein Concentrate (LPC) is a relatively new non-protein nitrogen molasses-like material. It is an ammoniated product which includes residue of the sugarbeet industry. LPC contains approximately 60 per cent dry substance and a guaranteed content of 33 per cent protein equivalent. The majority of LPC produced is combined with dried beet pulp and merchandised as LPC dried beet pulp.

Even though a fairly large quantity of LPC and LPC dried beet pulp pellets have been used in beef cattle rations, no information has previously been available as to their value as a source of protein.

Nine digestion trials involving five growing rations and four fattening rations have been conducted at CSU to compare LPC and cottonseed meal as sources of nitrogen (protein). Individual daily nitrogen balance data was collected during each trial and apparent digestibility of several nutrients was determined.

Each digestion trial was replicated with three calves per treatment. Calves with initial weights of approximately 600 pounds were used for the growing rations. A similar number, but different cattle, weighing about 800 pounds were used for the fattening rations.

Cottonseed meal and LPC were included in all rations except basal rations, in amounts to supply equal quantities of nitrogen. These supplements were fed in increasing increments in order to evaluate LPC at various levels of supplementation. In two trials, with growing rations corn silage replaced non-legume hay as roughage.

The five digestion trials with growing rations were:

Trial 1—Basal ration containing non-legume hay (primarily bromegrass), small quantity of flaked corn and plain dried pulp. This trial was conducted to establish a base point and therefore no nitrogen supplement was included in the ration.

Trial 2—Basal ration plus 0.75 pound LPC or equivalent quantity of nitrogen from cottonseed meal.

Trial 3—Basal ration plus 1.1 pounds LPC or equivalent quantity of nitrogen from cottonseed meal.

Trials 4 and 5—Similar to trials 2 and 3, respectively, except the basal ration was replaced with corn silage as the main feed in place of bromegrass hay.

In trial 2, where steers were fed LPC at the rate of 0.75 pound per head daily, a significantly higher digestibility of protein, dry matter, organic matter and acid detergent fiber resulted than for steers fed cottonseed meal as a source of supplementary nitrogen.

The level of LPC was increased to 1.1 pounds per head daily, results were similar to those in trial 2. The per cent of nitrogen retention (apparent digested) was 52.4 per cent for those fed cottonseed meal and 52.6 for those fed LPC in the ration.

In trials 4 and 5, where corn silage replaced bromegrass hay as roughage, there was very little difference in the digestibility of nutrients when supplemental nitrogen was furnished by LPC or cottonseed meal.

Results from the five digestion trials reveal that nitrogen in LPC is utilized just as efficiently, if not slightly more, than nitrogen from cottonseed meal in a growing ration for beef cattle. Also, under conditions of this experiment, it was shown by digestibility and nitrogen retention figures that LPC was utilized just as effectively with non-legume dry roughage (bromegrass hay) when substituted for corn silage as the major roughage.

Digestion trials where LPC and cottonseed meal were used in fattening rations proved again that both supplements were comparable as nitrogen sources. In fattening trials, the same ingredients were used as in growing trials, except the concentrate level was much higher and quantity of roughage was decreased.

Some difficulty was encountered in keeping steers on uniform feed intake from day to day when the level of LPC was increased from 0.9 pound to 1.25 pounds per head daily. This suggests, that in high-energy rations, it might be desirable to consider about one pound of LPC as the upper limit in fattening cattle rations for palatability reasons, whether they weigh 600 pounds or 1,000 pounds.
The importance of research in the development of the sugarbeet crop cannot be overestimated. Great Western’s Agricultural Research Station at Longmont, Colo., commenced operations in March, 1910, and is the oldest sugarbeet experiment station in the country. Developments have taken place that have benefited beet growers for more than half a century.

Abraham Lincoln, in his famous address “House Divided,” emphasized that in order to chart the future, one clearly had to understand the past and the present. This certainly we can appreciate as a starting point in this discussion of research. Many advances in technology are only improvements and extensions of what we explored in the past and know more about today.

In 1925 a government survey was made on the amount of labor required to raise a crop of beets from planting to harvest. This totaled 120 man hours. At that time, field workers hand blocked and thinned beets and would generally accomplish a quarter or third of an acre a day. Ungraded, multigerm seed at the rate of 22-25 pounds per acre was used in order to have sufficient stand of beets to work on.

Following the thinning, a first hoeing was required which quite often took more time than the thinning. There were generally two weedings and all the work was done as a contract, with the labor specified to work a 10-inch width along the row. The big job, however, was in the fall with the labor lifting and piling the beet roots on both sides of windrow, and then came the hand topping. The total labor in the fall generally exceeded that of the spring.

The farmer didn’t have it easy then either, with horses generally not plowing over an acre a day with a single bottom plow. Compare that with a modern hydromatic, variable-speed, air-conditioned cab with four plows or more covering many acres a day. I wonder what the total horsepower requirement is in 1968 compared with that of the mid 20’s. I wish we had some way of measuring the actual horsepower days.

What a change today in our handling of the sugarbeet crop! Certainly at the present time, when we plant and cultivate 6 rows or more and do multiple-row harvesting, things are quite different. It’s possible now with 6-row drill at a speed of 2½ miles per hour to plant 20 to 25 acres a day quite accurately with accurately graded seed and precision drills.

Thousands of acres and hundreds of farmers find the combination of chemical weed control and machine thinning making the change almost complete. At the present time, over by labor to remove weeds pretty well does the job, particularly where annual weeds are encountered. This operation for hand labor takes only 4-8 hours per acre, particular when followed by post-emergence herbicide after the weeds had been weakened by a preplant incorporated herbicide.

What a change and what possibilities! What about tomorrow? What changes can we expect? Well, let’s add up a few.

1. Certainly herbicides are getting more dependable in killing a wide variety of weeds and we are learning how to make use of them for an extended all-season control.

In the last three years it has become apparent that electronic thinning is being developed to a stage where it may be expected to replace not only the drudgery of the hand labor but will do a much better job in leaving the desired stand. It has to be combined, how
Founded 58 years ago, the GW Agricultural Research Station progressively explores advanced methods for increasing the sugar output of the beet. Observing hundreds of pedigreed beets are P. B. Smith, Director-Agricultural Development, left, and Whitney Newton II, Vice President-Research. Recording the pedigree numbers in one of the greenhouses at Longmont is Jim Swallow.

(Photo by T. H. Ferril.)

ever, with procedures for ridding the field of weeds.

2. That brings up another point and that is self-guiding tractors. Unlike as this may sound to some, the fact is that this has already been done by a number of farmers. All that is necessary is to start right with the planting with the double-disc guide following a double mark on a setup in front of the tractor which fastens to the steering bar. This makes for no more wide or narrow guess rows and the path is laid for each subsequent operation from then on for the full season. The four-wheel tractor, some think, works best but it has also been done with a tricycle. Those who have done it have found that they can drive faster and keep on the row accurately.

3. Let's talk also about the new chemicals that promise much, among them, fungicides. We are testing some new ones for elimination of black root in the spring which look better than the ones we are now using. Some of these may be systemic and taken in by the plant. New systemic fungicides for control of leaf spot were used last year for the first time and appear quite promising. It takes very small doses to do the trick.

Further, we are hearing a good deal about new chemicals that may increase yield or sugar content. We are learning all we can about them and some look very promising. We do not know yet, however, exactly the right time to apply them ahead of harvest or exactly how they upset the metabolism of the beet plants. Some of them make a remarkable change in the foliage when applied at the rate of only a few ounces, one week, two weeks or three weeks ahead of harvest. The plants take this chemical into the system and, in some instances, we have seen substantial increases in sugar per acre. We are also studying chemicals applied in the spring to try to speed up the growth process.

Indeed, tomorrow's horizons are widening for our wonderful sugarbeet plant which not only furnishes sugar to us but also, for livestock, rich beet tops and LPC dried pulp. Thanks to research, the potentials of the beet offer new opportunities and challenges to be welcomed.
How Soil Analysis Helps You Choose the Right Herbicides

BY W. C. McGUFFEY
Manager, Mitchell

Chemicals have been used for weed control in sugarbeets for some time, and this experience has emphasized the need for additional research into their functions and use.

The results obtained from a herbicide are dependent upon the number and extent of variables to which it is subjected. Environment or weather is the greatest variable that affects the efficiency of a chemical. There are optimum weather conditions under which the herbicide functions, and to have moderate weather not only provides a favorable climate for the growth of the crop, but also improves the reliability of the chemical. Naturally we do not control the weather, but we must adapt our operations to play the weather odds to our best advantage.

The human variable in application for the most part can be controlled by exercising care and sound management.

The third variable, and one over which we have little control, is the soil itself. However, it is wise to try to understand our soil, its make-up and function, to the best of our ability. We have all noticed variations in weed control or chemical effects on sugar beets that appear in certain fields or areas of fields. Since the area has been subjected to substantially the same rate of chemical application and weather environment, we are led to believe that the soil, as a carrier of the chemical, may be different enough in its physical and chemical make-up to cause a difference in the results of the herbicide.

The textural and physical difference between the north side sands and south side loam soils of the North Platte Valley at Mitchell have been noted for years, but the extent of these variations has been a somewhat casual observation. There was a natural curiosity as to the actual clay and organic-matter content of these soils and, since the advent of herbicides, the need for this information was further emphasized.

One must realize that all of the Nebraska Panhandle soils are sandy by comparison to most Wyoming, Colorado and Montana soils. These sands are more delicately responsive to the adverse effects of environment and do not have as much ability to carry and buffer chemicals as do the loam or clay soils. This does not mean that they are not productive soils or that one cannot use herbicides on them, but lower rates are necessary and the choice of chemicals is more limited.

It should be understood that it is the colloidal clay and humus fraction of the soil that is responsible for the greatest part of the chemical activity in the soil. These minute particles provide absorptive processes necessary for the attraction and subsequent releasing of chemicals in the soil. The coarser particles simply support the plant.

Therefore, the organic matter content of the soil has a definite relationship to its ability to carry herbicide chemicals effectively. Consequently, organic matter percentages were determined in conjunction with the separation of the soil samples into physical size fractions.

During the fall of 1966 and spring of 1967, extensive soil testing was performed in the North Platte Valley from Wheatland, Wyoming, to Alliance, Nebraska. This work pointed out that sandy soils do vary in their clay and organic-matter content and that herbicides can be used under proper conditions with adjusted rates. Additional sampling is anticipated where interested growers are applying herbicides.

One must realize that soil analysis is an additional tool in the use of herbicides and that it acts only as a guideline to complement recommendations, and if we can more fully comprehend the soil with which we are working, an additional building block can be added to the foundation of the herbicide program.
Consequently, if a grower has soil samples to aid him, he can be more discerning as to rates, chemicals and still adapt herbicides to his farming operations. The following chart more fully explains the results of soil testing in the Nebraska area.

Bear in mind that most Nebraska soils are in the Transitional or Ideal group, that new chemicals could be adapted to this guideline chart, and that environment can move the rate schedule up or down slightly on the chart depending upon its good or bad effects.

**Chemicals, Soils & Rates for Nebr. Panhandle Beets**

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<tr>
<th>BUFFER SOILS</th>
<th>NEBRASKA IDEAL SOILS</th>
<th>TRANSITIONAL SOILS</th>
<th>&quot;NO-GO&quot; SOILS</th>
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<td>ORGANIC MATTER</td>
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<td>65 35 40 25</td>
<td>55 45 25 20</td>
<td>40 60 24 16</td>
<td>24 76 13 11</td>
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**Pyramin + 282**
Rate: 3.75 + 2.5
Pre-Beta + Ro-Neet
Rate: 3.5# ➔ 4.0#
Granules: 11# ➔ 12#
Lyman & South Side heavies

**NO PRE-PLANT CHEMICALS**

**Pre-Beta — No**
Ro-Neet — ?

**South Side Alliance Wheatland**

Ginger and Cynthia

**Sugar in the Morn-in’**

Ginger Yost (pictured with accordion) and her sister, Cynthia, entertained the Beet Growers Association and their wives at their annual meeting at Billings by singing the below lyrics to the tune of "Sugartime."

**Sugar in the morn-in’, sugar in the eve-nin’, sugar at suppertime,**
**Thanks to you Beet Growers—we've got it all the time.**

**Sugar in the morn-in’, sugar in the eve-nin’, sugar at suppertime,**
**When you grow for Great Western—you're growin' for the prime.**

This continued for four more stanzas to the delight of the enthusiastic audience.

—Ralph W. Hettinger, Manager
HIGH SUGAR PRODUCER 196
<table>
<thead>
<tr>
<th>FACTORY</th>
<th>GROWERS</th>
<th>TOTAL POUNDS OF SUGAR PRODUCED</th>
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<tr>
<td>Billings</td>
<td>William Hojio</td>
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<tr>
<td></td>
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<td>Merle Hojio</td>
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<td></td>
<td>Paul Hojio</td>
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<tr>
<td>Scottsbluff</td>
<td>Alex Pester</td>
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Yes, "Kancol" has replaced "Tri-County" to designate the beet-growing area and new Great Western factory nearing completion near Goodland, Kansas.

When first projected, the name "Tri-County" seemed good enough, implying Kit Carson County, Colorado, and Sherman and Wallace Counties in Kansas. But looking to the widening horizons of future beet-growing potentials in this favored area, it appeared that "Tri-County" might soon become an understatement, so the name was changed to "Kancol," combining the first syllables of Kansas and Colorado.

Construction of the new plant is proceeding on schedule. Only 14 men were on the job when work began in January, 1967, and it currently appears that upward of 400 will be busy in the days ahead in order to complete the plant in time to receive and slice beets this coming fall.

The functions and equipment of this ultra-modern factory have been previously described in Through The Leaves, so here we are simply printing two photographs, taken by Jim Lyerly, to give some idea of how the project looks as it nears completion.

The plant is the most colorful in the Great Western system, with blue walls and white vertical strips. Gleaming white bins and green landscaping of the yard will further enhance the color scheme.

The eight sugar bins were slip-formed for continuous pouring. They stand 185 feet high with storage capacity for 630,000 cwt. of sugar.

The upper photo shows the modern white office building with the main factory in the background. Note parking space for some 15 cars. A portion of the locker room and but loading and sacking station is seen at the right.

The lower photo gives a panoramic view from the pellet warehouse on the left to the bins. The pulp drier is to the left of the white office building. Beet receiving facilities are on the opposite side of the buildings.
How the "Kancol" factory looks from the northwest, showing the office and parking space for some 150 cars.

A panoramic view from the pellet warehouse, left, to the eight tall storage bins, as seen from the southwest.
Charlie Campos, agent in San Antonio, Tex., left, signs up Santiago Rodriguez to take his family to Fort Collins, Colo., and Domingo Rodriguez, for Sterling. Looking on to the right of Charlie Campos are Rex Morgan, supervisor from Estes Park, and supervisor Bert Givens, retired from the Denver general office.

Great Western labor recruiting agents and supervisors predict there will be sufficient labor this year to work company area beet fields.

Company supervisors are hard at work in agency offices in Texas cities. Headquarters for signing up these families or groups of workers is at San Antonio. Other main offices are at Crystal City, Laredo, Corpus Christi, Weslaco, Mercedes, Harlingen, San Marcos, San Angelo, Big Spring and Lubbock.

Agents and supervisors at these offices say laborers go north each year basically to earn money. But, living conditions and efficiency of the farmer in caring for his fields are important factors for the laborer.

Agency offices find the vast majority of laborers are striving to raise their standard of living. They tend to work together as family units rather than as individuals.

It is at the Texas offices that workers compare notes on farmers who treat them fairly and honestly and furnish them with habitable housing.

They praise the farmer who patches a leaky roof and repairs the windows and door screens.

These workers are the first ones to acknowledge that some laborers do not treat the farmers fairly. But, they point out these are in the minority.

Jim Alvarez of Combs, Tex., gives an example of how he handles the 40 to 50 workers he takes to Burlington, Colo., each year.

"I assign workers to housing and check to see that everything is in order," he explains. "A few children left at home unattended can cause damage to housing but we keep after them to behave.

(Continued on page 24)
Armando Barbosa and his wife, Edelmira, stand in front of their lovely home recalling some of their happier moments while working the beet fields in the Prospect Valley, Colo., area. They will be returning this summer.

C. F. Schroeder points out the new labor recruiting office in Lubbock, Tex. The retired agriculturist from Eaton is supervisor at the Lubbock office. Formerly he was at Corpus Christi.

There are mighty few fathers who never took a look in the pot to see what is cooking. Here Roberto Anzaldua, Raymondville, Tex., takes a peek while his wife and daughter stand by to see nothing else is taken. He has been working at Loveland and Longmont, Colo.

Preparing his bus for the long trip from Combs, Tex., to Burlington, Colo., is driver Jim Alvarez who will take about 40 to 50 workers with him. Watching him check out the bus is Jerry Jarrell, Scottsbluff agriculturist who is supervisor for the Harlingen office. Center is Jesus B. Garcia, local agent.

Everyone got into the act when Pedro A. Astudillo, Laredo, Tex., third from the right, signed up to take his family back to Montana where the older members work the beet fields at Belfry. Next to Pedro on the right is agent Jim Orfila, Laredo, and supervisor James Donelan, Sterling, Colo.
"It would be a good idea for farmers to check with the laborers when they move into housing and then check again for damage before they leave. This would protect the good workers who take care of their housing."

Almost unanimously the workers say they would like to have the farmers carefully go over the type of work they want performed and agree beforehand on the rate of pay. They say there is too much misunderstanding.

Laborers comment favorably on the good farmer who uses his machinery and herbicides properly to help the worker. They like the grower who does a workmanlike job in cultivating and does not expect labor to make up for his errors.

These Mission, Tex., residents pose in front of their house bought with money earned in sugarbeet fields around Longmont, Colo. They are the Jose Guadalupe Cantu family and goat.
LOVELAND—Front row, left to right: C. R. Schooley, 20.49 tons per acre; LeRoy Winick, 22.75 tons; Carl Herber, 20.92 tons; Harry Winter, 20.55 tons; Paul Wang, 21.23 tons. Back row: Antonio Pineda, Jr.; Cedric Pineda; Manuel Pineda; Theodore Wacker, 22.16 tons; Elvin Spreng, 22.55 tons; Robert Felte, 20.43 tons; Earl Hoff, 22.08 tons; Antonio Pineda, Sr. Absent when picture was taken: Demitrius Pineda. (Pineda & Sons, Inc., 20.35 tons.)

LOVELL—Front row, left to right: Claude Craft, 23.6 tons per acre; J. L. North; A. M. Burgener; Winston Miller; Douglas Miller. Back row: James H. Smith; Harold Smith; Ronald Burgener; Charles Ando, 21.3 tons; Larry Leonhardt, 22.0 tons; Merle Gimmeson, 23.6 tons; Wayne Sparks, 21.2 tons. Absent when picture was taken: Ray Harrison, 20.8 tons; Koe Ando, 21.0 tons. (J. L. North, Winston Miller, Douglas Miller, 21.2 tons; A. M. Burgener, Ronald Burgener, 19.8 tons; James H. Smith, Harold Smith, 20.5 tons.)
GERING—Front row, left to right: Gary Grasmick; Leo Keller, 19.71 tons per acre; Norman Grasmick; Melvin Grasmick. Center: Grant Gingrich; Dave Schuldies, 19.11 tons; Robert Gingrich; Jake H. Stinnett, 19.95 tons. Back row: John Abel, Jr., 20.54 tons; Neal Gross; Donald Colson, 19.33 tons; William Kaufman, 20.44 tons; Ted Smith, 20.53 tons. (August Grasmick & Sons, 20.61 tons; Norman Grasmick; Neal Gross, 20.52 tons; Grant Gingrich, Robert Gingrich, 17.95 tons.)

FORT MORGAN—Front row, left to right: Lester Schlagel, 21.13 tons per acre; Herman Stark, 22.74 tons; Jake Kammerzell; Donald C. Richardson, 23.63 tons. Back row: Herman Cook, 22.74 tons; Henry Kammerzell; Alfred Pope; Paul Pope; Henry Willfang, 23.48 tons; Robert Kauk, 23.39 tons; Russell Gahagen, 24.41 tons; Gary Gahagen, 24.77 tons. (Jake Kammerzell, Henry Kammerzell, 23.63 tons; Alfred Pope, Paul Pope, 24.52 tons.)
LONGMONT—Front row, left to right: Sam Hoffman, 23.06 tons per acre; LeRoy Schlagel, 22.49 tons; Bernard Huwa, 21.39 tons; J. M. Pierce, 21.83 tons. Back row: Wallace J. Lebsack, 21.54 tons; Howard Rasmussen, 22.36 tons; Leonard Rasmussen; Farmer Rasmussen; Jacob F. Weingardt, 21.49 tons. Right: Vernon Peppler, 23.65 tons; Roy A. Williams, 22.72 tons. (Leonard Rasmussen, Farmer Rasmussen, 20.83 tons.)

BILLINGS—Seated, left to right: Henry E. Steinmetz, 23.81 tons per acre; D. E. Becker, 17.2 tons; D. R. Reichert, 16.9 tons. Center: Harry Schmidt, 17.5 tons; John C. Potts, Jr., 18.3 tons; John Bauer, Jr., 17.3 tons; Alex H. Reifschneider, 17.1 tons. Back row: Richard Polley, 17.2 tons; Jerry Meier, 18.2 tons; Loyd Reisig, 19.2 tons.

SCOTTSBLUFF—Front row, left to right: Elmer A. Klein, 17.1 tons per acre; D. E. Becker, 17.2 tons; D. R. Reichert, 16.9 tons. Center: Harry Schmidt, 17.5 tons; John C. Potts, Jr., 18.3 tons; John Bauer, Jr., 17.3 tons; Alex H. Reifschneider, 17.1 tons. Back row: Richard Polley, 17.2 tons; Jerry Meier, 18.2 tons; Loyd Reisig, 19.2 tons.

BILLINGS—Seated, left to right: Henry E. Steinmetz, 23.81 tons per acre; James Ruff, 25.13 tons; Maynard Zimmermann, 24.73 tons; Leslie L. Kolb; Keith Kimball, 23.09 tons; Raymond J. Kolb. Standing: Albert Robertus, 24.81 tons; William Kramer, 25.13 tons; W. E. Willems, 25.41 tons; Clarence Kolb; James Krum, 24.47 tons; Alex Wetsch, 25.47 tons. (Leslie L. Kolb, Raymond J. Kolb, Clarence Kolb, 26.68 tons.)

EATON—Front row, left to right: Harold Felte, 22.54 tons per acre; Erik Isakson; F. F. Winder, 20.60 tons; Stoke Morita, 22.58 tons; Alec Wambolt, 20.41 tons. Back row: Dale Prior, 20.79 tons; Eugene Winter, 22.36 tons; Ellis Isakson; Tom Kerbs, 21.36 tons; Donald Lebsack, 19.99 tons. Absent when picture was taken: Wendell Ottoson, 22.29 tons. (Erik Isakson, Ellis Isakson, 22.18 tons.)
GREELEY—Front row, left to right: Ronald Kissler, 22.73 tons per acre; Werner Detterer, 23.99 tons; Donald R. Uhrich, 22.99 tons; Leo Brug, 20.49 tons. Back row: Herman D. Feit; James L. Sitzman, 20.66 tons; Donald E. Feit; Edward Heimbuck, 20.23 tons; John Ehrlich, 23.21 tons. Absent when picture was taken: Ivan H. Klein, 21.24 tons; C. Evans Lyster, 22.02 tons. (Herman D. Feit, Donald E. Feit, 20.37 tons.)

KANCOL—Front row, left to right: Vernon Popp, 24.39 tons per acre; Allen Schutte, 20.83 tons; Wayne Woodmancy, 22.17 tons; Orville Walker, 21.13 tons. Back row: Garth Mangus, 22.38 tons; Kenneth Hitchcock, 20.95 tons; Leon Silkman, 22.44 tons; Melvin Sall, 23.85 tons; Lohnnie Wall, 21.45 tons; Garold Davis. Absent when picture was taken: Marvin Heinrich. (Garold Davis, Marvin Heinrich, 20 tons.)
HIGH IO '67

MITCHELL—Front row, left to right: Albert Strauch; Reuben Strauch; E. G. Schleicher, 18.03 tons per acre; Jack Reifsneider, 18.53 tons; Richard Butcher, 19.39 tons. Back row: Howard Edwards, 18.49 tons; Harold Richard, 19.28 tons; Burley Kindred, 18.28 tons; Alex Strauch; George Sommers, 17.29 tons. Right: Leo Nickel, 18.14 tons; George Bauer, Jr., and George Bauer, Sr., 18.50 tons. (Albert Strauch, Reuben Strauch, Alex Strauch, 18.12 tons.)

STERLING—Front row, left to right: John Gareis; Everitt Bartholomew; Martha Dick, 18.59 tons per acre; Gerald Dick, 18.61 tons; Harry Bartholomew. Center: Louis Rizzolo, 19.15 tons; Eugene Parsons; Vincent Folladori, 19.08 tons; John Amen. Back row: Albert Albrandt, 18.32 tons; Henry Schaffer; Kenneth Gareis; Raymond J. Parsons; Harold M. Kautz, 20.58 tons. (John Gareis, Kenneth Gareis, 22.43 tons; Everitt Bartholomew, Harry Bartholomew, 19.74 tons; Eugene Parsons, Raymond J. Parsons, 17.60 tons; John Amen, Henry Schaffer, 19.80 tons.)
Honored by Jaycees

Mr. Romick, Alliance, Nebr., grew his first beets in South Dakota, then worked for a beet processor in Montana four years. Since 1964 he has developed 320 acres in Box Butte County, has drilled 24 wells, has built a new home and has won regard for his progressive methods.

Would You Call This Ruminating Over The Evening Paper?

Cows have no trouble stomaching newspapers. That’s the interesting fact covered by Penn State researchers. A group of heifers fed on a newspaper-molasses mixture gained weight and appeared as healthy as another group of heifers that ate a standard high quality feed supplement, the researchers found. In both cases, the supplement was added along with conventional corn silage.

— The Quartermaster
ASSETS TO ANY COMMUNITY

Cletus Hanlon, an excellent Nebraska beet grower on Dutch Flats in the Mitchell district, has been successful for the past three years using Pyramin + 282 on light soils. According to soil tests, very light rates of chemical would be recommended; however, Mr. Hanlon has used the medium rates.

Being a progressive farmer, Cletus saved 24 rows of beets for the Eversman electric-eye thinner. Due to rain and muddy spots, conditions were not ideal. Good weed control, however, enabled the machine to do a commendable job.

Mr. and Mrs. Hanlon are real assets to their community, having been very active in school affairs, 4-H work, wool promotion, soil and water conservation, and recently have been especially busy promoting the Nebraska Centennial. Mr. Hanlon has also been a very active member of the Governor's committee on migratory labor. So it is no wonder that the Hanlons are so interested in growing beets the progressive way.

—Asst. Mgr. Robert Sanborn and Agriculturist Tom Herrin

Keep all field crops weed-free!

Billings area growers believe in fighting weeds, no matter where they are. It's important to keep all field crops weed-free, as 95 percent of our growers are proving every year with their usage of selective pre-plant herbicides. In years like 1967, where the month of June favored us with 5.18" of rain over a 3-week period, the proper use of these chemicals proves their worth beyond a doubt. In some fields, the weeds were taller than the beets, and if one would look carefully, a second crop of seedlings could be seen coming along under the older weeds.

If we must have fences, let the fence-rows look like this!

Later in the season it was easy to read the results because the check plots in our annual field tests looked ragged, even after hand labor had passed over the ground.

Our growers have realized that even though weeds put up a good battle, they can be controlled. They also know that the immediate problem of getting them out of the beets isn't the only way. If we have to have fences, let them look like the one in the snapshot. Ditches can be kept clean, too, using almost any number of both new and older tools that are available and at hand. Sometimes it is much easier to get these pests at their source. At any rate, we don't care where the weeds are eliminated, or how it is done.

Control and elimination is the important thing, and it is everyone's job to work together and get it done.

—James F. Gonyou, Assistant Manager

All big things have little names, such as life and death, peace and war, or dawn, day, night, hope, love, home.

Learn to use little words in a big way. It's hard to do—but they say what you mean. When you don't know what you mean, use big words. That often fools little people.

"The fortunes of empires have hung on the rise and fall of sugar." —Napoleon
For winning Colorado's top FFA award, Joedy Hartman is congratulated by Director Paul Foster, left, and GW Vice President Fred G. Holmes.

Fine work was done by these Colorado Voc teachers in FFA instruction: Seated, left to right: Leonard Pruett, Eaton; Ron Monasmith, Buhlton; Ron Uhrig, Fort Morgan; standing, Slim Koon, Jr., Fort Collins; Rex Davis and Jack Smith, Kersey, and Wayne Ball, Keenesburg.

Colorado's young sugarbeet growers are looking to higher accomplishment this year if 1967 achievements are any indication.

Future Farmers of America advisors and 4-H Club leaders are preparing their young people for entry in Great Western's annual growing competitions.

This past season was a busy one with 226 projects completed with average tons per acre passing the 18.7 mark.

The youthful growers came up with a total of about 2.6 million pounds of sugar for an average of more than 6,100 pounds to the acre.

These junior farmers were praised at achievement day banquets for being among the nation's finest examples of today's youth.

Colorado's 1967 beet-growing winners districts, seated, left right: Alan Fritzier, Morgan; Joedy Hart (state winner), Burton; Dean R. Greenwald, land. Standing: Arther Rohr, Jr., Greesley; D. Hendrickson, E. and Bob Lauer, Stie (Absent when picture taken: Vern Kauffman, Brighton.)

Colo. Junior Growers Aiming High for '68

Speakers emphasized again and again the fact that a very small segment of America's youth captures the headlines because of headline notoriety and wayward behavior.

It was pointed out that the great majority of the nation's youngsters get little publicity for their splendid accomplishments as typified by FFA and 4-H Club work.

It is through this company-sponsored competition that the coming generation of farmers is shown the advantages of growing sugarbeets.

The best producers in individual factor districts are selected each year. Winners are picked for production, records, income, interest and techniques toward elimination of hand labor and conservation of beet tops.
Out of 181 4-H competitors in the Colorado district, these young beet growers came out on top, seated, left to right: Judith Muroya, Greeley; Harvey Bauer (state winner), Loveland; Mary Pierce, Longmont. Standing: Leslie Yoshimoto, Ovid; Mike Chalk, Eaton; Sheri Kautz, Sterling; Steve Cook, Fort Morgan; Joe Amen, Brighton; and Kenton Davis, Burlington.

County Agents and their assistants are key men in 4-H accomplishment, seated, left to right: Fred Fitzsimmons, Julesburg; Alvie Roth and Stanley Boyes, Greeley. Standing: Gayle Knott, Fort Collins; Bob Croissant, Burlington; Ed Slocombe, Fort Morgan; and Charles Sylvester, Longmont.

Cecil G. Stover, Colorado 4-H Club Leader, presented a savings bond to Harvey Bauer, state winner. That's Harvey's dad, Alvin Bauer, at right. The Bausers live near Berthoud, Harvey did his own work, used herbicide and got a yield of nearly 21 tons on his project.
NEBRASKA'S JUNIOR BEET-GROWING WINNERS

Left to right, the 4-H girls are Jeni Muth, third place, Scottsbluff; and Christie Lye, third place. The boys are Kent Buehler, third place, 4-H, Gering; Stan Walker, third place in state FFA; Scott Stratton, second place, FFA, Mitchell; and Glenn Ross, second place in state 4-H.
Left to right: Herb Kelsey, Floyd Gabel, Bill Bohl, and Basil Ashcraft, Supervisor, Vocational Agriculture, Helena, Montana.

Left to right: William Yager, David Kelsey, Donald Overcast, Lonnie Seidel.
Beetles Don’t Bug Bob

Robert Pieper of Mitchell, Nebraska, has for twelve years chemically controlled flea beetle larvae in his beet fields. Since the coming of more reliable herbicides for weed control, Bob has also been chemically controlling weeds. It has been three years now that Bob has used a combination of Pyramin plus TD 282 for weed control, and Diazinon for control of the flea beetle larvae. This combination of chemicals, for both weed and insect control, is applied in a single operation at planting time. The insecticide is mixed with the herbicide and incorporated into the soil in a seven-inch band two inches deep.

—Jerome D. Reed, Agriculturist

Dowpon by “Air Mail”

The replants were coming up in good shape in the Ogallala area. The rains kept coming, the ground had warmed up and everything was “lush,” but it was too wet to work and there was also a lot of grass coming and in many fields it was doing just great.

It was generally agreed this was a good time for Dowpon to really work, but it was too wet for tractors so an aerial sprayer was contacted and started to work.

George Vasa, Ben Vasa, Bob Collins and Tony Washa were the first to have their beets sprayed with a 5-lb. rate with 3 gallons of water per acre. Where there was an overlap it looked pretty tough, so the rate was reduced to 4 to 4½ lbs. if it was under 70 degrees, and 3½ lbs. if it was over 70 degrees. Charles Washa at Grant and Henry Reitz of Brule had the lighter rates.

In all cases the grass control was very good with little or no apparent reduction of yield at harvest time.

It would appear that with rain, as in these cases, and 70-degree temperature, Dowpon is sure of giving a good grass kill and you can only get into those wet fields with a plane.

—R. V. Gray, Agriculturist, Sterling

Applied Lay-By with C&M Weeds

In Sedgwick County of the Ovid factory district a number of growers last year applied Eptam granules as a lay-by for the control of late germinating weeds and grasses, results showed good control for the rest of the season. We borrowed a cultivator from Ovid-area farmer Bernard Powell, a Gandy applicator from the American Fertilizer company, and C&M weeders from C&M products and set up the lay-by applicator and used it on 400 acres. The applicator was up so the Eptam granules were dropped directly over the beet row in an 8-inch band at the rate of 6 pounds per acre and incorporated into the soil by C&M weeders. We found that for best results the beets should not be taller than 6 to 8 inches. The C&M weeders also work well as crust breakers, moving dirt from the row, and to mulch and cover small weeds in the beet row.

—Gordon Friede, Agriculturist

Many Fields Saved by Post-Emergence Treatment

In the field of chemical weed control, growers in the Platteville-Ft. Lupton area in 1967 used the post-emergence herbicide combination of Pyramin-Dalapon-Citowett on more than 600 acres of beets with remarkably good results. Three growers using pre-plant herbicides on a total of 175 acres realized a similar benefit.

Although the area was well supplied with labor, many beet fields would have been thinned at high cost or lost completely if it not been for availability of the post-emergence system and the growers’ confidence and willingness to use it.

In many cases, continued rains kept cultivators, labor and herbicide sprayers standing still for so long that the fields appeared to be beyond any possibility for thinning, though post-emergence herbicides are recommended for small weeds, quite a number of beet fields were saved by this system. Weeds had reached a growth of 4 to 6 in. in height. It was a gamble at this stage, but not one acre of post-treated beets was lost.

Two growers, Carl Hirsch and Merrill dergraft, had fields of beets that received hand labor attention after the post-emergence and machine thinning.

—Carl Luft, Agriculturist
Lookie, lookie, lookie,
Here comes Cookie!
Lots of Cookies, I’m tellin’ you,
Made with Sweet G-W!
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The Great Western Sugar Company  
P.O. Box 119, Longmont, Colorado 80501
serving progressive growers in Colorado, Nebraska, Kansas, Montana, Wyoming and Texas

THE GREAT WESTERN SUGAR COMPANY

SEE PAGE 2
After many years of dedicated service to producers growing beets for Great Western, Thomas Hornsby Ferril, noted American poet and author, has retired from Company employment. (See story on page 13.) Under his long editorship, "Through the Leaves" was recognized as a leading growers' magazine across the sugar world. Circulation was broad. Reprinting of its articles in other publications was frequent.

Now this magazine's direction is in other hands. As might be expected, change of personnel will bring some changes in "Through the Leaves." But there shall be no change in its purpose.

Like the entire GW management, this magazine shall have these primary goals — to produce more sugar per acre with less effort and at lower cost, so that beet-growing can be even more attractive and profitable to farmers than now.

We remain dedicated to bringing readers the latest ideas in sugarbeet culture and in mechanical and chemical development. We shall cover as fully as we can news of goings-on throughout the sugar world and particularly in the sugarbeet-growing areas of Colorado, Kansas, Montana, Nebraska, Texas, and Wyoming. There will be more pictures and more human interest stories than before.

It's Your Magazine

Some of these changes began in the early Spring issue you received some weeks ago. For example, larger page size, a different type face, and more color. Other changes begin in this issue. More will be forthcoming.

It is largely a question of what you readers want. Won't you please consider this as your magazine? Please tell us what you like or don't like. What kind of articles would you like to see? Please send us leads on news and feature stories. Please feel free to submit short articles of your own.

If there is enough interest, we shall run a letters from readers section. Write on any matter you choose. Ask questions. Letters should be signed, but, on request, names of senders will not be published.

Your views will be of important help to us. We seek your cooperation; we urge it.
70 Nations Meet in Switzerland
In Try for World Sugar Accord

By RICHARD W. BLAKE and ROBERT J. FISHER

GENEVA, Switzerland—In this renowned city of diplomacy, in the historic Palace of Nations, in the very room where general sessions of the old League of Nations once were held, representatives of more than 70 sugar importing and exporting countries are convening in April and May in another attempt to reach a new International Sugar Agreement.

We are two of five industry advisers to the American delegation. The other three are the president of the U. S. Beet Sugar Association, the president of the New York Coffee and Sugar Exchange, and the president of a California cane sugar refining company. Representing the U. S. Department of Agriculture are Horace D. Godfrey, ASCS administrator, and Tom O. Murphy, head of the Sugar Policy Staff. The State Department is also represented.

Indicative of worldwide interest in this conference, the American delegation is surrounded in front by Colombians behind by Hungarians, left by Spanish, and on the right by Ethiopians.

Whatever the language of the man speaking, simultaneous translations over earphone transmission are made in French, Russian, Spanish, and — thank goodness — English.

What has an international agreement to do with sugar beet growers in, for example, Morrill County, Neb., or Wood County, Ohio, or with a beet sugar factory in Lovell, Wyo.? Plenty. What happens on the world level indirectly affects the American sugar system and American sugar prices — both of vital concern to beet growers and sugar manufacturers alike. To illustrate, in the early days of this conference, efforts to curtail production appeared to be directed more to beet than to cane sugar.

**World Dumping Market Prices Too Low**

Prices for raw sugar in the international dumping market — erroneously called the world free market — are at historically low levels, considering inflation, and are far below cost of production in even the poorest countries, where wages per day are less than American wages per hour. That prices are so depressed is understandable when one considers that only about 10 to 15 percent of the world’s production — homeless sugar — is pushed on an even smaller market, which is outside of preferential systems as, for example, those of the British Commonwealth of Nations, the Common Market, the Communist Bloc, and the United States.

The International Sugar Agreement of 1961, to which America was a party, was in 1962 effectively scuttled by Cuba. An unsuccessful attempt to revive the pact was made in 1965 in Geneva. Now another try is believed to have a greater chance for success. Until now, since 1962, only the statistical department of the Council has been operating.

Market prices, soaring in the 1963-64 boom period, nose-dived in the 1965-68 bust period. With current production expected to be less than world consumption, some price improvement is likely to occur. But, with sugar inventories at high levels, international action also is required to reduce stocks so as to balance the supply-demand equation.

Under auspices of the United Nations Conference on Trade and Development (UNCTAD), efforts are being made in the current sessions to provide that producer-importer nations follow the provisions in the present American Sugar Act, requiring 35 percent of sugar consumption growth to be filled by foreign suppliers. Another point being considered — from the 1961 International Agreement, but there at lower levels — is a minimum/maximum price range for world sugar transactions.

Other restraints also appear necessary if all participating nations — sugar producers, importers, exporters, developed nations, and developing nations — are to share in the mutual benefits of a new Agreement.

Only time will tell if conflicting interests of the participating nations can be reconciled.
New Company President Sees More Research and More $$$

Greater research! That is a certain dividend for Great Western Sugar Co. growers as a result of recent changes in management of the Company.

Robert R. Owen, newly-elected president, said recently, “The new management and I, personally, are research-minded. We are expanding our scientific activities and are hiring more investigators. We will continue to seek better methods and techniques to make beet-growing more profitable and easier.”

Born and raised on a farm, the new executive brings to America’s largest beet sugar company a wealth of agricultural research and general management knowledge. His previous position was with Ford Motor Co. as general manager of equipment operations.

Prior to 12 years at Ford, Owen worked in agricultural research at DuPont, Pineapple Research Institute and California Packing Corp. (Del Monte).

He is not new to sugar beets. While a student at University of California, he worked his way in part by hand-topping beets. His first professional job after graduation was on a Beet Sugar Development Foundation project at Davis, Calif., where a commercially acceptable beet harvester was being sought.

From Beets to Army

Now a brigadier general in the U.S. Army Reserve, Owen recalls that while operating a prototype harvester in a California beet field, he received a wire changing his classification from junior engineer to second lieutenant.

Happy to be back in sugar, Owen promised to run the organization “as a sugar company and maintain its leading position” in the industry. “We are now,” he said, “an integral part of Great Western United, but the sugar company will be operated as a separate entity.

“We, as always before, have obligations to stockholders. But, likewise we will continue to be wholeheartedly dedicated to making the sugar business better for beet growers, employees and the communities in which we operate. We will continually strive to be a good neighbor.”

The president also said, “by being part of a larger organization we will be able to call upon more experts than heretofore in fields of management, marketing and research, among others. Furthermore, we have gained financial strength and a willingness to increase our investments in new facilities and modernization to improve efficiencies.”

Other efforts to improve financial stability of Great Western sugar beet growers were pledged by Owen. “Working as we must with the framework of the Sugar Act, we have lost control over the gross price we can get for our sugar,” he said. “Uncle Sam determines that price. But, we can and we will continue to seek to reduce our selling expenses and to all possible to obtain top net return.”

Efforts won’t stop there, the president continued, “Net return from sugar is only one of the factors that determine profit for growers. Another is sugar content of beets. Another is yield of beets per acre. Still another factor is the cost of producing beets.”

Praising the company’s research facility and the seed geneticists and technicians in Longmont, Colo., Owen said they were responsible for developing the present excellent New Company President Sees More Research and More $$$

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over the years and under all climatic conditions this seed has produced commercial beets of the highest sugar content in the domestic industry," he explains. "We are proud of what our scientists have accomplished, but, more important, we are confident they will continue to improve seed varieties."

Seed, he said, is far more than simply sugar content. "Better seed means more tons of beets per acre. It also means more resistance to disease and insects. Better seed means higher juice purity and better keeping quality of beets in storage piles, where they must remain for months after harvest."

Recent decisions of grower and Company representatives, to adopt a new type beet contract and to set up a joint research committee, were termed "far reaching and great strides forward" by Owen. He said growers and Company have many things in common and by "our working together the mutual gains we have made will be consolidated and the future will be even brighter."

Knaus Heads New Farms Department

K. D. "Kenny" Knaus has been named manager of the Company's farms department, according to Murray R. Petersen, GW special products division vice president. Petersen says activities of the current livestock department will be absorbed by the farms department.

In the past, the GW farm enterprise was used largely to conduct small-scale experiments. For example, down-the-row mechanical thinning equipment and techniques were developed on the Company farm at Windsor, Colo., and were therefore called the "Windsor method." Now, Petersen says, "emphasis will be on a commercial, conventional-sized operation to enable Company men to gain firsthand experience in facing the same problems confronting our growers, so that our agriculturists will be in better position to advise other sugar beet producers."

One of Kenny's first duties is to improve the Company's Windsor farm and cattle-feeding operation. There are four tenants and a Company-operated portion there.

Practical Experience Vital

"Every farmer knows he learns something more each year," says Kenny. "There is no substitute for practical experience in recog-

K. D. "Kenny" Knaus, new Company farms department manager, left, assists George Weber, Windsor, Colo., farms foreman, in putting together a power-driven rotary cultivator, adapted for bed-planted sugar beets at Windsor.

nizing and understanding problems involved in a complex undertaking like growing sugar beets and feeding cattle."

The farms department will follow and seek to improve techniques already adopted by progressive farmer-feeders to increase efficiency, lower costs and make the combined sugar-beet-livestock enterprise more profitable.

As Kenny sums it up, "We expect to be in better position to find answers to perplexing agronomic and economic problems facing today's farmer-feeders."

The new farms department manager joined the Company in 1939, following his graduation from Colorado State University where he majored in agronomy. From assistant fieldman at Ovid, Colo., he became fieldman in 1940 and took the same position at Longmont in 1947. He became assistant manager at Brighton in 1951 and then assistant to the southern district manager in Denver in 1956. In 1957, he took on the additional job of assistant general livestock consultant, making it his full-time work in 1959. He became livestock manager in 1966. He and members of his family run a sugar beet farm and livestock operation at Niwot, Colo.
Efficient Use of Water Is a Key To Nebraska Farm's Expansion

Efficient use of water has helped the Smiths of Imperial, Neb., expand their sugar-beet operation from 80 acres in 1964 to 640 acres this year. The father and sons team began with one well in 1964, after Les Smith Sr. had been dry-land farming since the early 1920s. This year they have seven wells.

Total acreage jumped from 160 acres of leveled ground, during this four-year period, to 1,280 acres today—with another well planned for next year. The Smiths say their change to irrigated farming resulted from the profit to be made from sugarbeets.

During a number of grower meetings in 1968, Gene Smith pointed out these facts of life—there is little profit in dry-land wheat and the farm about breaks even on corn.

It didn't take the Smiths long to discover that they had to make more efficient use of their water to stay in business.

Considerable time was involved in repairing damage to irrigation ditches when water leaked from board-check holding boxes. Through use of valves and underground pipes, the Smiths now can alter movement of water into any of two or three ditches at one time. The water is unseen until it hits the ditch.

Gene says the family likes to use post-emergence herbicides after the beets are up and have a good population. This is chiefly to combat kochia. He says they use about 50 laborers in the summer. Other brothers running the farm are Les Jr., and Stan.

Colorado's Pioneer Spirit Still Strong

The pioneer spirit of neighbor helping neighbor is still with us in Colorado—especially when a neighbor is in trouble. When Bert Crona, Harney station, Longmont, underwent a serious throat operation early this year, it became apparent he would be unable to do his spring farm work.

A great portion of the land was yet to be plowed. Barley, sugarbeets and corn had been planted. Bert, tenant farmer with the Miller-Grant families as owners, was too confined to hospital for some time, with recovery time needed at home. That is when his neighbors came in.

A swarm of farmers with their tractors went to work. They included: Dick Purcell, B. Hepp, Leo Berger, Lavern Hamilton, Herb and Herman Johnston, William Hinkle, Lee Jesser, Dan Wagner, Ray Taggart, Frank Gallein, Ray Elmquist, Harlan Giantz, Lyle Heid, Bill Bell, Albert Kipsinger and Alex DeBruin. Bert's brother, Alvin, also came out from town to lend a helping hand.

Businesses Helped

Many firms got into the operation. Fuel for the tractors was furnished by Evezich Garage of Frederick, Sig's Service of Longmont, and Del Camino. Great Western supplied seed for 45 acres of sugarbeets. Lunch at Del Camino restaurant was provided by owners of farm and Golden West Milling Co.

Neighbors also helped by donating both during Bert's operation. Dick Purcell and his wife, Bob Hepp and his wife, Lyle Heid, Tom Russell, O. E. Staley and Dan Aschbrenner all contributed.

The entire project is proof once more of the prevailing farm spirit of generations past: "That is what neighbors are for," Ralph Price, agriculturist, Longmont.

The Smiths of Imperial, Neb., check the flow of water from underground pipes directly into two irrigation ditches. Left to right are: Smith, Sr., Gene, Les Jr., and Stan Smith. By setting valves, they can control flow of well water into their ditches.
Otto Hoffman, his wife, Millie and grandson, Jeff, get a "Phoenix or Bust" ride, with agricultural Gordon Hobert pulling the buggy cart built by Otto. The Bayard, Neb. grower has 10 measured acres entered in the 1968 sugar beet contest. Winners from each factory district go to Arizona. Otto is using slightly more than three seeds per foot to cut thinning and is using Ro-Neet for weed control. He says he hopes to have no hand labor at all on his 30 acres of beets.

It's 'Agriculturist' Now

Don't call him a "fieldman" any longer; he's officially an "agriculturist."
For more than six decades company contacts with growers have been made by "fieldmen."
But they are more than company representatives in the field. They are "versed and trained in agriculture — a science."
Hence for the past few months, your fieldman has been designated as your agriculturist.

Though title has changed, duties remain the same. Agriculturists continue in their devotion to sugar beets and in their dedication to serve you, the grower.

Ovid Farmer Builds Own Tractor Cab

Bruno Cortez of Ovid found bad weather was keeping him off his tractor at critical times of the year. So, he decided to do something about it.

Being handy with tools, Bruno spent a winter building his own cab, after finding commercial cabs cost from $600 to $1,200 for a deluxe model. He drew up blueprints for a 730 diesel and spent about $260 on welding rods, angle iron, bolts, masonite board, paint, windows, weather stripping and other miscellaneous items.

Now, Bruno finds he can work earlier in the day and later in the evening, when the temperature drops. Dust or rain offer no handicaps. The Ovid farmer has 160 acres, with 45 in sugarbeets.

"All it takes is patience and time to build a cab," he explains. Another spare-time job was construction of a 1900 model Winton car. He built the small, three-horsepower replica from magazine plans. Every summer he enters the tiny vehicle in downtown parades.

Bruno Cortez looks down from his homemade tractor cab to discuss his sugar beet crop with Gordon Friede, Company agriculturist.
James L. (Jim) Sitzman, 31-year-old farmer has grown crops in La Salle, Colo., for the past seven years, but 1967-68 will be long remembered in his family. First Jim was named Outstanding Young Farmer by the Greeley Jaycees, then he was named high sugar producer in the Greeley district. He was then designated Colorado's Outstanding Young Farmer by the state Jaycees in Denver.

Jim has a 420-acre operation south of Kersey where he grows 140 acres of beets. He also grows alfalfa, barley, corn silage and feeds about 200 head of cattle. All of this was brought out in Des Moines, Iowa, during the National Jaycee OYF contest April 7-9.

He kept busy, when not involved in the contest, passing out miniature silk bags of Great Western sugar with the slogan "Compliments, Chamber of Commerce, Greeley, A Sweet Place to Live." Before Jim left, Sven Johansen, agriculturist, held a "sewing bee" to put the bags together. (See picture on back cover.)

Jim and his wife, Ruth, have three boys, Jim Jr., Jeff and Jay. She keeps the farm's books when not busy around the house. They are both active in church work. Jim is on the church board, young couples group and choir. He is also a member of the Kersey Lions Club.

Close calibration when spraying for weeds is vital. Too much herbicide can harm beets and not enough fails to kill the weeds. Choosing Topcide sprayer timing are Sven Johansen agriculturist, and Jim Sitzman, L to R.

Vietnam Troop Planes Carry GW Sugar Packs

Passengers on flights throughout America and overseas to Vietnam, are making the coffee and tea a bit sweeter through use of GW sugar. Millions of packets of this sugar are being flown by airlines flying from Canada to Texas, California to New York and Minnesota to Florida. Troop planes to Vietnam carry GW sugar.

Braniff, North Central and Frontier airlines have been carrying these servings of sugar on their flights for some time. Now, GW sugar is also riding the "friendly skies of United," United has put our sugar on its flights throughout this country. In addition to travel, Burlington Railroad serves GW sugar on its Denver Zephyr.

Also at ground level, hundreds of restaurants in the Rocky Mountain and Midwest areas and Northern Ohio serve these individual portions.
Kancol Acreage Growth Great

By LaMAR C. HENRY
Kancol Manager

Growth of sugarbeet acreage in the High Plains area of eastern Colorado and western Kansas was relatively steady from 1957 through 1967. And then came the revolution. There aren’t enough adjectives to describe the phenomenal growth increase this year.

First beets in the area were planted in Kit Carson County, Colo., in 1957. This acreage was under government allotments which continued until 1961. Then acreage increased to 2,500, with beets also being grown in Sherman County, Kan. Wallace County, Kan., came into production in 1962, with acreage harvested in three counties then totaling 6,000. This tri-county area grew from 10,217 acres in 1963 to 13,000 in 1964; 16,000 in 1965; 19,000 in 1966; and 21,500 in 1967. In 1968, contracted acreage jumped to 41,000 acres in Kancol district proper.

Producing sugarbeets in this vast high-plains area became a reality through advent of deep-well irrigation. In 1957 there were 150 wells in Kit Carson County, and about 50 in Sherman County. Today the well totals have grown to about 700 in Kit Carson County; 300 in Sherman County; and about 200 in Wallace County.

Additional Counties

In addition to these counties, sugarbeets have been contracted for 1968 in the following western Kansas counties: Cheyenne, Thomas, Sheridan, Rawlins, and Decatur. Per-acre production of beets, in the Kancol area, has been comparable to other areas of the company, in most years—and in some years, better. The 1967 crop averaged nearly 18 tons per acre, and was one of the best for any Great Western area.

Now just who are these eastern Coloradans and western Kansans growing sugarbeets? For the most part, they are second and third generation folk whose families have had strong roots in the productive soils of the area. There are only a few newcomers. There are probably more owner-operator arrangements here than in any other producing area of our company. Since they are few in numbers, vast land resources are available to them. Average acreage of beets per grower this year is about 200 acres. Two area growers have acreages in excess of 1000 acres each.

The Kancol area extends from Menlo, Kan., on the east, to Stratton, Colo., on the west—a distance of more than 100 miles; and from Sharon Springs, on the south, to St. Francis, Kan., on the north—more than 60 miles.

The crop is handled somewhat differently here from other areas of Great Western. Beets are planted on modified beds and then irrigated for germination. Bed planting greatly eases water application for beet-seed germination. Because of this sure moisture timeliness, the area has been producing excellent harvest stands and tonnage.

Soil type is uniform throughout the area—a deep loessial type that carries 70 to 80 percent fines. The major ingredient is silt with a low percent of clay and a small amount of sand. Tillage tools last a long time here, the soil absorbs water readily, and the life-giving fluid is easily withdrawn from the soil by growing plants. Precipitation averages around 15 inches a year. Usually about five irrigations are required for maximum beet tonnage.

It has been a pleasure for us on the Kancol agricultural staff to note the success our hard-working, careful and efficient growers have attained.
1968 Beet Contest Participants

**EATON**

**GROWER**
- A. L. ANDERSEN, JR.
  Ault, Colo.
- W. S. LONG
  Ft. Collins, Colo.
- LELAND W. CARLSON
  Greeley, Colo.
- BILL SAMESHIMA
  Ault, Colo.

**AGRICULTURIST**
- AL AUGER
- DUANE MCDONALD
- JIM ROBERTSON
- DALE TORMEY

**GREELEY**

**GROWER**
- W. S. LONG
  Ft. Collins, Colo.
- ROBERT L. SITZMAN
  Greeley, Colo.
- PAUL G. HENNECK
  Greeley, Colo.
- CARL JOHNSON
  Greeley, Colo.
- BILL TORMEY
  Greeley, Colo.

**AGRICULTURIST**
- AUGUSTINE GALAVIZ
  Ogallala, Neb.
- ROBERT A. ABAMS
  Greeley, Colo.
- AL ROBERTSON
  Fort Collins, Colo.
- DALE JOHANSEN
  Loveland, Colo.

**LOVELAND**

**GROWER**
- TOM J. DYKMAN
  Fort Collins, Colo.
- LESEACK BROS.
  Berthoud, Colo.
- ROBERT OHNSNER
  Fort Collins, Colo.
- TOM STROH
  Fort Collins, Colo.
- LEROY WINICK
  Windsor, Colo.

**AGRICULTURIST**
- REID DICKERSON
- ROY MARSH
- DALE SHULL
- BERT NELSON
- DON REDABAUGH

**LONGMONT**

**GROWER**
- VERN HAMILTON
  Longmont, Colo.
- EDWARD SHULTZ
  Berthoud, Colo.
- RICHARD E. SMITH
  Longmont, Colo.
- SAM HOFMAN
  Longmont, Colo.

**AGRICULTURIST**
- RALPH PRICE
- O. L. OLDEMEYER
- ROBERT J. BEVER
- ROY DRAGE

**BRIGHTON**

**GROWER**
- HERMAN STRAUCH
  Platteville, Colo.
- JAMES E. KNAUB & HENRY KNAUB, JR.
  Keenesburg, Colo.
- FLOYD OSTERMILLER
  Hudson, Colo.
- ALBERT WATADA
  Fort Lupton, Colo.

**AGRICULTURIST**
- CARL LUFT
- RAY REYNOLDS
- R. H. RIDDLE
- M. A. SILVERNALE

**KANCOL**

**GROWER**
- B. RICHARD CORTEZ
  Ovid, Colo.
- LAVERN TRANEL
  Big Springs, Neb.

**AGRICULTURIST**
- GORDON FRIEDE
- JERRY YOUNG

**STERLING**

**GROWER**
- STEWART G. DENNY
  Sterling, Colo.
- RICHARD A. BURROUGHS
  Sterling, Colo.
- PAT WEIGEL
  Crook, Colo.
- PETE REGIER
  Madrid, Colo.

**AGRICULTURIST**
- IVAN STAHL
- GARY BRADON
- AL DZINGLE
- BOB GRAY

**FORT MORGAN**

**GROWER**
- F. EDWARD & HENRY WEBER, JR.
  Fort Morgan, Colo.
- JAKE HOKI, JR.
  Weldon, Colo.
- RUSSELL A. GAHAGEN
  Wiggins, Colo.
- DEAN & RICHARD NEB
  Wiggins, Colo.
- ROBERT STEYAERT
  Hillrose, Colo.
- LANCE CHRISTENSEN
  Brush, Colo.
- JOHN UHRICH, JR.
  McCook, Neb.
- M. A. & K. A. DICKSON
  Idalia, Colo.

**AGRICULTURIST**
- A. B. BERRY
- C. W. JONES
- T. E. ENGLISH
- V. VIESELMEYER
- E. N. GRAHAM
- L. FRANKLIN - N. DAVIS
- W. WAGNER
- J. BRENCLE

**MITCHELL**

**GROWER**
- CLAUDE CHAMBERS
  Wheatland, Wyo.
- RICHARD W. BUTCHER
  Morrill, Neb.
- HOWARD EDWARDS
  Lyman, Neb.
- HARLAN D. KURTZ
  Mitchell, Neb.

**AGRICULTURIST**
- HERBERT PEARCY
- PAUL BLOME
- ROBERT MORLEY
- TOM HERRIN
- JERRY REED

**KANCOL**

**GROWER**
- W. T. POTTORFF
  Stratton, Colo.
- NORMAN BAUMAN
  Factory
- LOHNNIE WALL
  Pecos, Colo.
- MURRAY BAALMAN
  Menlo, Kan.

**AGRICULTURIST**
- CHARLES HEPFENIEGER
- DONALD LINDSLEY
- BILL GRAY
- EVERETT LAGE
- MERLE WORDEN
Merle E. Worden, Company agriculturist, squats on the wing of Jerry Winter's crop duster plane as Wayne Winter pumps in a load of pesticides before his son takes off on another "ground-hugging" spraying operation in Kansas.

**Beet Growers Fly To Battle Beetles**

There's a father-son team of sugarbeet growers in Kansas who are having a time keeping their feet on the ground. As a matter of fact they like it that way.

Wayne Winter and his son, Jerry, grow 140 and 280 acres of sugarbeets respectively when they are not up in the air crop-dusting in one of their three low-wing monoplanes. Winter's Aerial Spraying operates out of Kanorado, Kans.

Wayne has been flying for 20 years. He taught his son to fly. This is Jerry's sixth year spraying. The first part of May they led the attack on cutworms while June opens the battle with beetles and webworms. Jerry has three hired men and Wayne, two, working on the farm. This is necessary for last year their "battle with the bugs" kept them in the air about 1,100 hours.

They fly between two and six feet from the ground when dusting. This means early in the morning or in the evening when the air is still. Even then the job has its hazards.

Wayne has walked away from three accidents. Once he hit a power line, another time his motor quit and the third time he ran out of altitude when the wind changed. "We fly so low spraying we have to go on oxygen when we are higher than six feet," Wayne says with a laugh.

"In addition to sugarbeets, we will be spraying wheat, corn and milo. This takes considerable care to control the pesticide so it does not harm neighboring crops, livestock or fish and wildlife."
Weed Control in Sugarbeets

By E. E. SCHWEIZER
Plant Physiologist, U.S.D.A.

Cost of weed control in sugarbeets, in the U.S.A., has been estimated to exceed $20 million annually. More than 1.1 million acres of sugarbeets were planted in 1967—about 30% in non-irrigated areas and 70% in irrigated areas—with weeds a major problem.

Herbicides, used to control these weeds in sugarbeets, and the methods of application, vary considerably because of major differences in soil, climate, cultural methods and weed species. Since there are so many different species of weeds growing in the 23 producing states—from Maine to California—a single herbicide or even a mixture of herbicides simply won’t do the job on every farm. Such weeds as kochia and lambsquarters belong to the same generic family as sugarbeets. Therefore, herbicides must be highly selective to kill these without injuring sugarbeets.

Selection of a specific herbicide or mixtures of herbicides is dependent on the specific weed problem, type of soil, percentage of organic matter and clay content, and availability of moisture. In irrigated areas of the Central High Plains and Intermountain West most herbicides are applied as preplant treatments and are soil-incorporated, because moisture needed to move herbicides into the soil is often inadequate.

Many are Absorbed

Many herbicides are absorbed by the roots and shoots of weeds. Consequently, these chemicals must be present in sufficient quantity where weed seedlings germinate. The principle herbicides that are now being used as preplant treatments are: diallate (Avadex*), pebulate (Tillam*), pyrazon (Pyramin*) and TD 283 (Herbicide 283). Several of these are used as mixtures. R-2063 (Ro-Neet*) is the most promising new herbicide for use at the time of planting.

Some herbicides are more effective when applied after weeds have emerged (postemergence application). These are more effective when weeds are actively growing; this means that soil moisture should be adequate. However, too much moisture immediately after the application of a postemergence treatment can reduce the effectiveness of the treatment and in some instances even nullify it. Therefore, herbicides are most practical in areas where rainfall is timely, or where moisture can be supplied by either sprinkler or furrow irrigation.

Dalapon (Dowpon*) is widely used in the United States as a postemergence treatment to control grass in sugarbeets. A mixture of dalapon plus TD 273 (Herbicide 273*) plus pyrazon will control many broadleaf species. A package mix of dalapon plus pyrazon (Pyramin Plus*) is being sold in 1968. Dalapon plus pyrazon should not be applied when pyrazon was used as a preplant treatment in sugarbeets, to avoid possible residues of pyrazon in the soil. Another new herbicide S6173 (Topcide*), appears promising for kochia control. This herbicide should be applied to kochia in the early rosette-stage before stem elongation begins.

In Colorado, Kansas, Montana and Wyoming, barnyard grass, lambsquarters, nightshade, pigweed, kochia, foxtail and pig grass are major annual weeds.

Results at Colorado State University show where herbicides were applied both before planting (preplant) and after the crop emerged (postemergence), 80 to 90% of
major annual weeds can be controlled. This means labor will have to remove only those weeds that escape.

Sugarbeet growers making a conscientious effort to control weeds in other crops will have less trouble controlling weeds effectively in sugarbeets. Importance of controlling weeds in crop rotation is being studied at the Colorado Agricultural Experiment Station. Progress reports have been published in "Through the Leaves", Volumes LIII, No. 2, pages 26-30, and LV. No. 3, pages 21-27.

Weeds should also be controlled in fence rows, along ditches, and in other waste areas, to prevent the weed seeds that are transported by water and wind from re-infesting fields relatively free of weeds.

Rules to Follow

To control weeds most effectively and safely in sugarbeets the grower must: 1) Know the weed species on his farm. 2) Control weeds in all crops, fence rows, ditches, etc. 3) Consider applying herbicides both before and after planting to control a broader spectrum of weeds. 4) Calibrate sprayers properly and periodically check pump and nozzle tips for wear. 5) Irrigate within a week, if natural moisture is inadequate, after herbicides have been applied preplant. 6) Be sure weeds have adequate moisture for growth where herbicides are applied postemergence. 7) Consult local agriculturists to obtain current herbicide recommendations. 8) Finally, read the container label carefully before using any chemical. It pays to be careful.

* Mention of a trademark name or a proprietary product does not constitute a guarantee or warranty of the product by either the U. S. Department of Agriculture or the Colorado Agricultural Experiment Station, and does not imply its approval to the exclusion of other products that may also be suitable.

(WEED CONTROL IN SUGARBEETS: This is a report on the current status of research on weed control practices. It does not contain weed control recommendations, nor does it imply that herbicide uses discussed have been registered. All uses of pesticides must be registered by appropriate state and federal agencies before they can be recommended or used.

T. H. 'Tom' Ferril Retires
As Magazine's Editor

□ Much water has gone over the sugarbeet rows since T. H. "Tom" Ferril joined the company 42 years ago. His retirement was recently announced.

During his long and distinguished career with Great Western, Tom served as editor of "Through the Leaves" and as publicity director for the company. Tom also carved out a name for himself as the most honored poet of the Rocky Mountain West. He wrote frequently for the Rocky Mountain Herald, a Denver weekly paper owned and edited by his wife, Helen.

Earlier he was editor of "The Sugar Press," a publication for Company employees. He joined GW in 1926, after five years in the motion picture advertising business. Previously, he was a reporter and drama critic for The Denver Times and The Rocky Mountain News.

Pioneer Parents

Tom was born of pioneer parents in Denver, where he plans to remain. He graduated from Colorado College, Colorado Springs, and was later awarded four honorary degrees by western universities. He won many honors and awards for his poetry.

His first book was "High Passage" in 1926, followed by "Westering" in 1934, "Trial by Time" in 1944, "New and Selected Poems" in 1952 and "Words for Denver and Other Poems" in 1966. He won a national competition and a $10,000 prize in 1958 for his verse play, "... and Perhaps Happiness." It was produced at the Central City Festival in Colorado.
It was a cold spring day as work was completed on the irrigation well northwest of Big Springs, Neb. Examining the drag bit used on the well are, R to L, Mrs. Doris Tranel, Kim Kemper, 10, Konni Tranel, 13, and Jerry Young, Ovid agriculturist.

New Well Waters
Beets On Dry Land

Something new has been added to LaVern Tranel's dry-land wheat farm northwest of Big Springs, Neb. In fact, there are two things — water and sugarbeets.

The Tranels drilled 284 feet to water and are growing 82 acres of sugarbeets on the North Table. Ten acres are entered in the 1968 sugarbeet contest. LaVern also grows about 28 acres of beets in Julesburg, Colo., and 20 acres in Keith County, Neb.

Mrs. (Doris) Tranel says soil tests were made before the well was dug and sugarbeets planted. It took five days to drill the well. Costs ran over $10,000 for the well and pipe to carry water about one-half mile. The land was terraced to keep rain runoff out of the irrigation project.

Weeds Cost Money

Weeds cost American farmers about $500 million annually and can reduce crop yields from 15 to 50%, according to Dwayne Konrad, South Dakota State University extension irrigation specialist.

He says Colorado research shows ragweed takes as much water as three corn plants; a sunflower, enough for 2½ corn plants; a mustard plant, as much as four oat plants; and a Russian thistle, enough to produce three sorghum plants.

Joint Committee Acts
In Research Matters

Research, always an important work among Great Western area sugarbeet growers and Company management, has taken on even greater meaning through formation of a joint research committee.

When it was established last summer, grower association presidents termed the committee of "far-reaching significance to beet growers and Great Western." Prime purpose, according to them, is to "see greater sugar production per acre at a lower cost to the grower."

Commenting for the Company, Vice President Robert J. Fisher said "new chemicals, new techniques, and new machines offer real opportunity to all of us. The good job we have done in these areas and in seed improvement will continue, and with better understanding, through the joint committee."

The second meeting of the group was to be held in early June at the USDA facilities at Ft. Collins and at the GW Experiment Station at Longmont, where the initial meeting was held last September.

Grower members of the committee are Billings—Joe Alles, Edward Kountz, and Bob Yost; Lovell—Paul Rodríguez, Jerry Collin and Howard Hart; Colorado and Kansas—Kit Otsuka, Waldo Reichert, and Carl Peters; and Nebraska—L. D. Towater and Harry Weber.

Phil Smith heads the GW committee delegation, assisted principally by Dr. Robert Oldemeyer, director of agricultural research, and Ralph Wood, director of agricultural services.

Diversified farming keeps Don Blackburn, Merrill, Neb., right, on the go with civic work taken up the rest of his time. Don is a director of the county fair for youth activities, is active in 4-H work, and is chairman of the high school and county rodeos. Above, he talks over his 46 acres of sugarbeets and his beans, corn and hay crops with Thelma Shannon, Mitchell. Don also feeds hogs and cattle.
Yesterday’s Crop Production Is a Guide to Future Plans

By LEE E. BUTLER
Southern District Manager

Good planning is always necessary to get the most out of efforts going into sugarbeet crop production. It is well to think about the whole picture, as well as the problem at hand. The past is a guide to the future, whether it involves insect and disease control, weed eradication or use of fertilizer and water.

Thinning season is coming into full swing and we can already see results of spring efforts in weed control. It is too early to assess the nematode fumigation program. But, it is time to be thinking about the balance of the growing season.

Plans can be laid for further weed control and cultivation of the crop. We must think about insect and disease problems and about fertility and irrigation, to keep the crop in the best possible growing condition.

In areas where root maggot is known, a pesticide may be needed for control. Agriculturists have established a system of fly traps to pinpoint more accurately the time when control will be most effective.

Watch Neighbors

The maggot usually appears the latter part of May. Best way to keep from guessing is to use traps, as its appearance is affected by temperatures and other conditions. Farmers would do well to see what their neighbors are doing in maggot and nematode control. This could be a key to next year’s crop planning.

Cultivation and control of weeds after thinning can combine both chemical and mechanical means. Fighting weeds in early stages helps cut down labor costs and can bring higher yields, through better plant population and lack of weed competition. Many new tools are available to supplement or replace old standbys, in cultivation and weed control.

Side dressing of fertilizer, soon after thinning, may be of great benefit, where needed.

Leaf spot problems occur in a part of the area during late summer and prompt control measures will more than pay in increased sugarbeet yields.

Irrigation water is in good supply over most of the area and wise use of this water, in keeping the crop actively growing at all times, will be a great asset. A crop allowed to suffer periodically, from lack of water, cannot yield its highest potential.

In general, farmers should follow the many local tests and commercial treatments of herbicides. In all, we can see what a variety of chemical practices have demonstrated this year. A look at the electronic thinner, in operation in various factory districts, will be well worth the time spent. Combinations of the use of chemicals and the electronic thinner will help reduce future labor requirements.

Sugarbeet growers will be seeing a number of Eversman Selectronic thinners in the field this year. These improved machines will be running field tests in almost every area served by Great Western. Above, Company men examine two of six control boxes with Ray Barmington, C.S.U. agricultural engineer. Roy Drage, agriculturist, Longmont, is in the foreground with Jerry Reed, agriculturist, Mitchell; Barmington; Merle Riggs, assistant manager, Ft. Morgan, and Bill Nelson, assistant manager, Bayard, L to R, in background.
Silverware is featured at High Sugar Producer Banquet meetings throughout Great Western territory. Admiring trays and sugar bowls at the Longmont banquet are, left to right, Roy Williams and his wife, Pearl, and Mrs. Cathirene Pierce and her husband, Jack.

Fort Morgan was site for fine food during a spring grower meeting. Shown enjoying the lunch are, left, front to rear: Henry Weber, Sr., president, Fort Morgan Beet Growers Association; Jay Squires, Farmers State Bank, Yuma; Max Harper, Yuma grower; and Carl Wacker, Hillrose beet grower. Right, front to rear: David Weber, Fort Morgan grower; and Alex Ostwald, Colorado Interstate Gas farm manager.

Loveland factory growers take a welcome coffee break during a spring meeting. Included in the photo, left to right, are: Clayton Bearly, Louis Hart, Phillip Bearly, Harold L. Morgan, Eugene Bashor, Walter Carlson, John W. Nelson, Vern Johnson, Robert Felte, Marvin Johnson (back to camera) and Bob Ochsner.

Movie and slide projectors are used to keep growers up-to-date on latest methods of growing and harvesting sugar beets. Checking a projector at a Colorado grower meeting are, left to right, Albert Hofferber and John Mitzel, both of Prospect Valley; John C. Mollendor, Hudson; and John Stewart, Brighton manager.

Keenesburg farmers compare notes during a grower meeting held in that town. Left to right, they are: Standing, Larry Bauer and Conrad Bauer Jr. Seated, Bob Marolf, Jack Goble and Robert Hofferber.
Colorado sugarbeet growers turned out in force for spring educational meetings at the Greeley Community Building, above. Weather permitting, good crowds attended all Great Western grower meetings.

Two proud young farmers and their wives display awards received for High Ten achievement. Mr. and Mrs. Donald Colson, left, have a coffee server for third year participation in the High Ten at Gering. Mr. and Mrs. Jerry Meier have a creamer for their second year award at Scottsbluff.

This Nebraska award picture was a family affair from two factory districts. Mr. and Mrs. John Abel, Jr., left, were in the High Ten for the seventh time at Gering while Mr. and Mrs. Alex Pester took high sugar producer honors at Scottsbluff. Mr. Pester and Mrs. Abel are brother and sister.

Sterling and Fort Morgan sugarbeet growers were well represented at educational meetings held in the latter town. Above, left to right, are: Albert Albrandt and Gerald Dick, both of Sterling; Jake Kammerzell and Russell Gahagen, Wiggins; Henry Schaffer and Everitt Bartholomew, Sterling; and Henry Wiltfang, Wray.
**Special Events Time**

This is the time of year when special events give farmers and livestock raisers an opportunity to show off their best products and enjoy the company of their neighbors.

Here are a few of the events scheduled in Colorado, in GW factory districts:

At Greeley, the FFA Rodeo will be held on May 30; 'Go West With Greeley' (Horse Show, June 29; Parade, July 4, and Rodeo, July 3-5). The Gilcrest 4-H Club Exhibit Day will be July 28.

Boulder County Fair will be held in Longmont Aug. 21-24. Eaton Community Days are Aug. 1-3 and the Ault Fall Festival is scheduled Sept. 6-7.

Adams County Fair Grounds events at Henderson include the Open Horse Sale, July 13, and Adams County Fair, Aug. 5-10. Trader Days will be observed at Fort Lupton, Aug. 16-17; and SE Weld County Fair and Rodeo at Keenesburg, Aug. 23-25.

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**A Money-Saving Idea**

In this era of rising production costs, Kenneth Hitchcock, Burlington, Colorado, has put his mechanical ingenuity to work. He has taken a good cultivation tool, the Alloway Disc, and made it better.

Kenneth, by enlarging the upright shaft for added rigidity, was able to attach the knife to the rear of the same shank. This eliminated the need for two clamps. This method enabled him to equip a complete 12-foot cultivator with discs and knives, for first cultivation, using only 12 clamps. Add an additional clamp for each sweep and the cultivator is complete. When setting the tools on a cultivator it is necessary to adjust only one clamp per row instead of the previous 4.

This method decreased the cost of cultivation and increased its efficiency.

—Merle Worden, Agriculturist
Lovely Karlene Burbach gives a moving rendition of “Please Release Me” during rehearsals at her Minatare, Neb., home. Others in the combo are Vern and Von Keller and Karlene’s husband, Roger, right.

“Lost Beats” Combo
Like Modern Beat

Country and Western music with a modern beat are “soul music” for the “Lost Beats” combo of Minatare, Neb.

When not working on his 42 acres of sugarbeets, Roger Burbach and his wife Karlene get together with 18-year-old twins Vern and Von Keller to play for dances in neighboring towns. They have appeared before cowboy music lovers in Torrington, Wyo., Kimball, Neb., and other area spots.

The twins also come from a “sugarbeet family.” Their father, Robert Keller, has 36 acres of beets at Minatare.

In addition to beets, Robert Burbach raises beans, corn and hay and feeds stock cows. Karlene keeps her musical hand in giving piano lessons.

Jerry Wegelin, Gering, Neb., carefully mixes a batch of Pyramin and 282 for weed control. He says he has been using these for the past four years with “pretty good success.” He has 140 acres of sugarbeets in partnership with his father, Jake.
Montanan Forecasts
Beet Acreage Hike

(Editor's Note: Excerpted from an article which appeared in "The Missoulian," Missoula, Mont. The author, Ray Efteland, is ASCS office manager at Hamilton, Mont.)

Sugar beet growers in Ravalli County may be down, but they're not out, according to Home C. Bailey, Corvallis, Mont., longtime producer. He states prospects are encouraging and forecasts plantings this year about double those in 1967. Last year's high average yield is a factor, along with a basic price increase.

Also, growers no longer face uncertainty over a market as they did during the last years the Missoula factory was in operation. For the years ahead he sees favorable conditions because of new hybrid seed just coming into production, and the use of less hand labor, as a result of more mechanization.

Sugar beets have been grown continuously in the valley the past 40 years. ASCS records over the last 30 years show the industry has always had its ups and downs. Over this time acreages have fluctuated widely, as has the number of producers.

Usually plantings have been unrestricted and acreages were governed by individual grower decisions. However, in some years controls served to hold down total acreage. These controls, known as "farm proportionate shares," were applied when necessary to avoid a buildup of sugar supplies above marketing quotas and normal carryovers.

Yields also varied greatly from year to year. Last year's county average yield of 20.87 tons per acre is the highest on record. The low average of 10.88 tons was in 1943. This may have been partly due to wartime conditions. But generally, weather has played the most important role in determining yields. There appears to be a trend toward increased productivity with the averages in later years running about 2 tons above earlier years.

Weeds Waste Water

Six-inch tall weeds have already wasted the following amounts of water: Russian thistle, almost one-half-inch of moisture; Kochia, six-tenths of an inch; green foxtail, one and four-tenths inches of moisture.

Many Good Neighbors
Lend a Helping Hand

Everyone pitched in this spring when Mr. Schreiner, Janise Station, Lyman, Neb., was unable to work in the sugar beet fields following a cataract operation on both eyes.

At least 20 of Mr. Schreiner's friends turned out in a community "Good Neighbor" effort to help in seed-bed preparation for planting of his crop.

In the accompanying photo, part of the group is shown during coffee break. They are: Left to right, Yutaka Yamamoto and Charles Carson, Mike Hernandez, (kneeling foreground), Carl Reifschneider (standing) and Mrs. Don Lind and Mrs. Ray Lind (in car).

Among the other workers on hand were: De'bert Trupp, Yukio Sakurada, Jerry Linn, Kenneth Carpenter, Howard Edwards, Eugene Hort, Walter Ott, Victor Hoff, Ray Lind, Fred Sakurada, Wilbur Markheim, Jack Reich, Phillip Hort, Leo Lillard, Dan Daggett and Proviance.

—Robert More
Rodeos, Horse Shows Keep Teenager Busy

Vacationing is an unknown word for pretty Kerry Blackburn of Morrill, Neb. Her summers are spent competing in rodeos and Quarterhorse shows while keeping active in 4-H Club work.

The 18-year-old Morrill High School senior, daughter of sugarbeet grower Don Blackburn, excels in her favorite sport. This is evident at home where her room is overflowing with trophies, prizes and ribbons won at many rodeos and fairs.

She will compete in seven rodeos this summer, with her main target the Harrison State Rodeo, June 20-23. This rodeo is a stepping stone to the national, to be held in Topeka, Kan., the first week in August. Last year, Kerry qualified for the national at Elko, Nev. In her own words, the national last year “was an experience I will never forget.” Nebraska rodeos she plans to enter this year include those at Wauneta, Chadron, McCook, Gordon, Valentine, Crawford and Scottsbluff.

Busy 4-H Member

In addition to 4-H horse club activity, Kerry keeps busy in sewing, cooking, home living and baby beef clubs. She is a member of the Nebraska Cowgirls Rodeo Association and Scottsbluff Saddle Club. It has taken hours of dedicated practice to make her a champion. A chore time always comes around, for in good or bad weather stalls have to be kept clean.

This summer she must sacrifice some riding in favor of working sugarbeets for her father. She drives a tractor at hoeing time and, when asked what other connection she has with sugarbeets, she replied, “I love to chew on the sweet, raw beets.” Maybe that’s where she gets the energy to keep going on all her activities.

Thinning Methods Test

University of Wyoming 1967 tests indicate the electronic thinner leaves sugarbeet plants more evenly spaced than either hand or mechanical thinners. Dr. Clarence F. Becker, university agricultural engineering head, says thorough tests are continuing using 120 beets per 100 feet of row as an ideal spacing.

Counts made in Lovell area field tests show the electronic thinner left beets closest to the desired stand. These studies are jointly sponsored by the University and Great Western.

Ground Water Study Underway at CSU

Sprinkler and furrow irrigation with pumps are changing dry land farming in eastern Colorado to profitable irrigated farming, but replenishment of ground water is a problem. W. D. Kipper and R. E. Danielson, USDA, ARS soil scientists at Colorado State University, are carrying out studies to find out the cost of use of gravel mulches and importance of this system to eastern Colorado farming.

They say mulches may help. They estimate 10 to 12 additional inches of rainfall per acre of mulch can be put into the water table annually. The soil scientists say it takes about 15 acres of prairie to get rainfall needed to provide ground water for one irrigated acre at present.

Kipper and Danielson explain that other means of improving the water recharge are eradication of sagebrush and deeper plowing, to break up clay soils and increase permeability while bringing sand and gravel layers to the surface.
Old friends from three nations compare notes at a recent industry meeting. They are, L to R, Geo. Duchateau, director of research, Tirlemont refinery, Belgium; Phil Smith, Company director of agricultural development; and Sydney Ellerton, director, Bush Johnsons, Ltd., Maldon, Essex, England.

More Monogerm Seed Needed Desperately in North Europe

Shortage of field-workers has created a desperate need for more monogerm sugarbeet seed in northern Europe, according to reports from overseas.

Phil Smith, Company director of agricultural development, says this need is being met gradually in part through research assistance from this country. Sugarbeet research on an international basis is revolutionizing the labor picture in Europe through use of this monogerm seed, he explains.

Smith reports, for example, that the Company has assisted cooperating Dutch and English seed companies in transferring the monogerm genetic character in developing strains adaptable to the climate of particular countries. Annually, Company researchers meet with officials from Bush-Johnsons, Ltd., Maldon, Essex, England, and the Dutch firm of D. J. van der Have to compare notes on new strains of monogerm sugarbeet seed.

Phil and Sydney Ellerton, a director of the English firm, say breeding of sugarbeets is complicated. They indicate European varieties generally do not adapt to U.S. conditions. In the same way, Great Western strains do not fit all European requirements. European strains are not suited for our areas where spot or curly top are problems.

Phil says most of our seed is now diploid hybrid while English and Belgium strains are polyploids. The Company Experiment Station at Longmont is constantly testing hundreds of new hybrids. Tremendous advances result from close cooperation between these internationally associated staffs. Cooperation between English and Dutch seed firms goes back to 1956 when exchange of information on varieties began with our Company.

Ellerton says use of monogerm seed is a long time coming to Europe much later than to America. He forecasts about one-third of England's sugarbeet acreage will be in single-germ seed this year. Ellerton estimates England will use monogerm seed entirely in about two years.

The Company, through international operation has its varieties tested in foreign lands — Europe, Latin America, Japan and Northern Africa.
Careful planning and close cooperation keep labor problems at a minimum on the George Vasa farm, Ogallala, Neb. Above, left, Mrs. Refugia Bravo minds the kids while her husband, Israel, works with George on records. Standing is Company agriculturist Don Bernhardt. At right is Israel's sister, Teresa.

**Farmer-Labor Team Work Well Together**

George Vasa, Ogallala, Neb., has found an answer to much of his labor problem through close cooperation with a family of workers from San Benito, Tex. Mutual understanding has led to an arrangement whereby these workers are on the Vasa farm from March to the first of December.

Israel Bravo and his wife, Refugia, arrived this year on March 6. Israel’s father, Jose, came up later with six workers.

George reports Israel is handy around the farm and pitches in as welder, auto mechanic, tractor driver and general farmhand. George has him on the payroll as a general farm worker, contracts with him to work the sugar-beets and shares 20 of his 210 acres of beets. Israel and his father, help with wheat and corn crops and other odd jobs around the farm.

As George says, “we exchange visits and every so often I’ll show up with some soda pop for the kids. It helps us understand each other and makes our work more pleasant.”

Robert C. Thomas, Morrill, Neb., right, came up with an idea to solve his crusting problem. Here he shows agriculturist Tom Herrin his front-mount crust breakers, which roll over the row. They weigh about 80-pounds each. He has six of them hooked-up. In back of the tractor he uses rotary hoe type rougheners when preparing his 75 acres of sugarbeets.
P. B. Smith Reviews 44 Years In Sugarbeets Here and Abroad

By P. B. SMITH
Director of Agricultural Development

[EDITOR’S NOTE: We have asked Phil, noted around the world as a sugarbeet expert, to write the accompanying article on the event of his retiring shortly from almost a half-century of important contributions to the industry. Old growers will “remember when;” new growers will see an even brighter future in Phil’s comments.]

I have seen a lot of water go over the dam and down canals to beet fields in the 44 years since I graduated from Ohio State University and started working in the agricultural department of Great Western.

My job the first fall was as a tareman at the old Morgan Station. It was a hard beginning for a novice, but I soon became well-acquainted with beet roots, I can tell you!

Practically everything was done with horse-drawn implements. We had a few Fordson tractors, mostly for plowing. I had earlier experience in Ohio cranking those stubborn engines. Things have really changed in this brief four-decade span. For yield changes, see the accompanying chart.

Tonnage Counts

Tonnage is the primary thing that interests a farmer. The chart shows the average yield since 1928. Since 1931, when individual tests began on beet samples in Colorado and Nebraska, the quality of beets also improved over that of the 20’s. This striking example of Company research is unique.

The only fertilizer used when I first came to Morgan County, Colo., was barnyard manure. Shortly afterward, due partly to my experience in Ohio with sweet clover in furnishing organic matter and nitrogen, we campaigned to get farmers to plant sweet clover. Superintendent Holden of the University of Nebraska Station at Mitchell, carried on excellent tests, showing need for more organic matter, by plowing under sweet clover in sandy soils on the north side of North Platte River. We look to other sources of organic matter today but benefits of a good legume in the rotation are well known.

We conducted nematode surveys and marked infestations on maps for farmers to employ better rotations in the mid-20’s. Due largely to use of proper non-host crops, the nematode problem was never too serious until recent years, when mostly row-crop farming was seen as a way of life because of economic stresses. Farmers were obliged to choose cash row crops instead of longer rotations which included alfalfa.

Soil Testing Use

Great Western started soil testing in about 1926 to determine phosphate needs. The Longmont Experiment Station was the first research station in the West to realize that its arid soils are short in this important element. I remember the first test with ammonium sulphate, in a sandy soil west of Fort Morgan, which, in combination with phosphate, produced tremendous results. Look at what’s happened since that time in fertilizer practices, soil testing, micro-element additions to fertilizer, and various additives to bring about a more balanced nutrition diet for the beet plant.

Old-timers will also remember that until World War II we planted 22 to 25 pounds of ungraded multigerm seed so as to have a plant every inch of the row, with the labor cutting out 10 to 12 inches. This in itself reduced tonnage, if there was a delay in thinning. Finger work made for lots of labor and slow development of the beet plant.

Many nights I could not sleep because of webworm outbreaks and repairing iron Ames
power sprayers pulled by horses. We also used hand sprayers filled with Paris Green or lead arsenate. We didn't have much in the way of insecticides. I remember seeing farmers in the dry 30's using grasshopper crushers and catchers around hay fields and borders of beet fields. What a blessing today to have many fine selections of pesticides for killing insects, killing nematodes, controlling fungus diseases and stimulating beet plant growth.

**Better Irrigation**

We have also learned to irrigate better and more properly conserve water to advantage of the crop. Concrete-lined ditches have meant a lot to prevent subbing of fields and assisting in better water distribution. We have learned better to keep the crop growing without drowning it. Many farmers in the "good old days," if they had a decent water right, believed in using all water possible. The same men early in the season thought drying out the top foot of soil would make roots penetrate deeper. Fortunately, these things have gone the way of horses. Today we have measuring devices, better implements, and labor-saving devices for electronically telling growers when water has reached the opposite end of fields.

Segmented seed meant saving much labor in the early 40's. Better planters were developed to accommodate this new seed shortly after World War II, followed a dozen years later by introduction of single-germ seed. Now plant breeders are gradually bringing in higher-producing hybrid varieties, which should mean still further increases in production for the future, in the same way they spelled the difference for corn growers.

In 1944, I saw the first successful beet harvester, and in a few years' time I saw 90 percent of the acreage mechanically harvested. In about five years more, such harvest of roots was virtually 100 percent. Since then we have seen improvements in dirt and trash removal by harvesters, and separate harvesters for beet tops. This latter development, if taken advantage of, could mean substantial additional income for sugar beet growers.

**Concentrated Research**

I spent some five years in starting the Beet Sugar Development Foundation, being selected by the industry for development of harvesters, planters, thinners, cross-blockers, and other mechanical equipment. This organization has created a clearing house for research by all American beet sugar companies, and is directly responsible for concentrating sugar beet research, which means so much for the future. I was fortunate in having a staff of engineers and agronomists who literally worked 20 hours a day, assisting inventors and implement manufacturers to bring mechanization of the beet crop to all parts of the country.

In looking back on my active sugar life, the most pleasant memories are those of good friends in all beet districts of the United States and in a dozen foreign countries where, for a number of years, it has been my privilege to visit. I have found the cooperative spirit of a true sugar beet research worker is to have an open mind, listen to other men's ideas, analyze them, develop them, and put them to good use, to the benefit of crop production.

Satisfaction in seeing things progress, to the magnificent level they are now, instills me with great pride.

I hesitate to mention honors I have received from several agricultural organizations, as well as having been named to Who's Who in the American Leaders of Science. I cite them only in contrast. The greatest honor I consider is that I have perhaps helped in benefitting friends in the beet farming areas of the Company, as well as overseas.
Youths Learn from Catch-it-Calves

Two Colorado and Nebraska teenagers are finding their lives returning to normal after raising 1967 catch-it-calves, sponsored by Great Western. The boys, Gay Stencel of Greeley, Colo., and Doug Schlegel, Culbertson, Neb., found keeping accurate records was the most helpful—and time-consuming—part of the calf-raising.

Gay, 14, and Doug, 17, caught their calves during the National Western Stock Show in January 1967 and sold them following competitions during the 1968 show in Denver. The Greeley boy, son of Ben Stencel, placed eighth out of 41. Points are awarded on gains made, accuracy and completeness of records, sponsor relationship and quality of the steer when shown at the stock show.

Doug lost his company-sponsored calf in 1966, but the insurance enabled him to replace it in 1967. His Hereford calf was sold at 1,115 pounds last January with total gain of 655 pounds. It sold for $26.75 cwt. Gay's Shorthorn sold at 1,065 pounds with a total gain of 715 pounds. It brought $31 per cwt.

Gay fed his calf on corn and oats with beet pulp pellets, molasses, some milo, calf manna, and dehydrated "A" pellets. His 4-H Club projects are beef fattening, breeding beef and raising field corn.

His family farms about 220 acres of irrigated land. Last year they raised sugar beets, peas, corn, potatoes, grain and hay. Gay had one and one-half acres of beets himself.

Both boys are active in church work—when they are not doing their farm chores. Gay is on his school's wrestling, basketball and football teams. Doug, son of Darold Schlegel, carries a heavy 4-H and Future Farmers of America work load. As an example he stated, "I come home from school about 3:00 p.m. and work until about 7:30 or 8:00 p.m. on my livestock and chores. Then I have to do my homework." He couldn't play football last year as he wanted because he tore ligaments in his knee playing baseball.

Catch-it-calf projects were "fun and educational" for the boys and offered valuable training in animal care and record keeping. It was only another step on the way to the future. Anyone looking around the area 4-H and Future Farmer projects at county fairs will probably find Gay and Doug competing for prizes this year.

The 1968-69 Company catch-it-calf went to Dean Reeve, 14. He is the son of Mr. and Mrs. Cecil Reeve, LaPorte, Colo.
Dean Reeve, 14, LaPorte, Colo., has his hands full taking home the 1968 catch-it-calf sponsored by Great Western. The son of Mr. and Mrs. Cecil Reeve named the 505-pound Shorthorn steer "Great Red" for the company and its color. He caught the calf during this January's National Western Stock Show at Denver.

Farmer To Cover More Ground

While Edgar Pratt, Burlington, Colo., had difficulty planting and cultivating 200 acres of sugarbeets last year in bad weather, this year he is leasing a fourth well and is expanding to 275 acres.

He is speeding up his operation by putting a multiple-purpose tool bar on his tractor. The bar is used for bedding, planting and cultivating 12 rows at a time. Now, by planting large fields, he says he can drive at three miles-per-hour and handle 80 acres per day. He also eliminates some labor by moving to 12 rows. He says one man can do the work of two.

Pre-Forms Ground

Edgar pre-forms his ground for water control. He says this bedding gives more efficient use of irrigation water and helps to prevent erosion caused by heavy rains. This Eastern Colorado farmer raised beet since 1963 when he started with 80 acres. He uses gated pipe for irrigation, with wells that pump about 850 gallons per minute. He also raises corn.

Edgar calls weeds his biggest headache. Formerly he used Pyramin and 282 for control. This spring he applied Ro-Neet. He used part-time workers on his 200 acres.
Good for Connie Wacker, daughter of Mr. and Mrs. Leo R. Wacker. She was one of four University of Nebraska freshmen chosen to represent the state's 37,000 4-H members at the 38th National 4-H Conference in Washington, D.C., in April.

Leo is a 4-H Club leader in Alliance and raises sugarbeets six miles north of town. Not only is he a good 4-H leader — look at Connie's achievement — but he is also a good farmer, according to Ron Jones, agriculturist. Ron reports Leo uses little labor each year thanks to chemical weed control and mechanical thinning.

Connie, a 10-year 4-H member is a champion public speaker, winner of the county 4-H scholarship, two-time trip winner to state club week and has taken numerous awards in dress review and demonstrations.

Eight growers are among those using Tel-one and Shell DD soil fumigants in the Bayard area this spring, according to A. E. Heldt, agriculturist. They are the Zeiler Brothers, Harvey Eirich, Harry Stricker, William Franklin, Larry Kilthau, Andy Pierce, Alvin Hagen and Alex Eirich.

Heldt says the Zeiler Brothers at Clouse station are carrying out a test to determine practicability of broadcast method versus in-row method of applying Ro-Neet. They broadcast the chemical this spring and worked it into the seed-bed with a roller packer. Using the Sinner injector with Ro-Neet are Ed Lye, William Franklin and Art Diemer at McGrew Station.

Rick Kuntz, Custer, Mont., high school senior, is the new Montana Future Farmers of America state president, Robert L. Pierce, agriculturist, reports. Rick, son of Mr. and Mrs. Edwin J. Kuntz of Custer, is active in both 4-H and FFA work. He and his younger brother, Cody, raise sugarbeets as one of their projects.

Rick was elected president at the state organization's 38th annual leadership conference in Bozeman. The honor speaks well of Rick, his family and the school. The Custer FFA Chapter has come a long way since it was founded five years ago.

Charles Cure, Stratton, Colo., has been raising sugarbeets only a couple of years but he believes in putting his ingenuity to work. To compensate for high and low spots on his seed-beds, he added an extra shank to the tool drilled a hole in the bottom end and added a bolt to make a pivot point. Merle Worden, agriculturist, says Charles then added a support rod with an adjustable spring tension. The photo shows the adjustable spring tension on the support rod.

Chester Whomble of Fort Morgan deserves credit for producing 2,282,610 pounds of sugar in 1967. This put him in second place in the High Sugar Producers category. He erroneously listed in 11th place in the last issue of the magazine.

Congratulations to Steve Emerson, son of Dr. John Emerson of the Greeley district. He represented Colorado at the National 4-H Conference in Washington. His father is a landowner with tenant farmer Gerald Firestick growing 49 acres of beets.

Bill Gray, an agriculturist at Goodland, Kans. since 1961, has been named assistant manager of Kancol district. Bill was formerly an agriculturist at Eaton, Colo., and assistant agriculturist at Brighton. An agronomy graduate of Colorado State University, he was raised at Fort Lupton, Colo. He is on the Goodland Board of Education, belongs to the First Methodist Church and the Elk's Club.
Robert G. Sterkel, Bridgeport, Neb., has attacked his weed problem with wholehearted determination, according to S. J. Davidson, agriculturist. He says Bob broadcast sprayed his 160 acres of beets with Ro-Neet and plans to follow up with a post treatment, where needed, and lay-by every acre at ditching time.

Amos and Ernst Mehl, North Platte, Neb., believe in getting the job done. They combine fertilizer application, modified bedding and planting in one operation. They use an 18-inch—24-inch row spacing which allows use of larger tractor tires, a larger irrigation ditch and an eight-row planter. They cultivate eight rows but harvest their 400 acres with a four-row lifter, according to Roeland Elliston, agriculturist.

Glen Zemanek has been hired as assistant agriculturist at Holyoke and Imperial-Grant, Neb. He will be living in Holyoke. Glen put some campaigns under his belt in the chemist's department at Bayard. His brother is chemist at Ovid and his father is a long-time campaign worker at Bayard. He comes to GW from the ag and sales department at Kuner-Empson.

J. R. Elliott, agriculturist, reports LeRoy Leever and Jake Reifschneider of Bayard, Neb., station are shooting for complete elimination of labor this year. They soil incorporated Ro-Neet over their entire acreage.

Richard Michal, also of Bayard station, is carrying out an experiment to shorten beet rotation through soil fumigation, Elliott adds. He says Michal has applied Telone to five acres of land previously treated three years ago—in addition to application on new acreage.

Herman Wagner, Longmont, was named the year's outstanding young farmer by the local Junior Chamber of Commerce. He grows 55 acres of sugarbeets on the Rev. Huntington farm.

Gary Elmquist, son of Mr. and Mrs. Ray Elmquist, Longmont, won the annual Soroptimist Citizenship Award for outstanding service to his community and school. At school, Gary is a member of the National Honor Society and participates in the Honors Colloquium. His father grows 40-acres of sugarbeets.
Growing Sugarbeets in Texas

By DONALD LEE TERRELL
Plainview, Texas

Prior to planting sugarbeets in this area, we have two primary factors to consider: first, we need to loosen the soil as deeply as possible because, as our season progresses with several irrigations and heavy rains, the soil sets together tightly; second, at the beginning of the season our soils are always very deficient in phosphorus.

To correct for these two conditions I plow my land at least 12 inches deep with a moldboard plow followed by a light discing. Then I broadcast 300 to 400 pounds of dry fertilizer, such as 11-48-0, on top of the ground, disc it in and then level. After the surface of the soil is smooth and level I mark out my rows with a lister.

The beds turned up by the lister on 40 inch centers are then packed and shaped with a bed shaper. Just prior to final bed shaping I apply more phosphorus in the form of phosphoric acid and approximately 180 pounds of nitrogen, in the form of anhydrous ammonia, in the sides of the beds on 20-inch centers. This gives me the benefit of the dry fertilizer folded into the beds, under the rows, and a band of fertilizer adjacent to each row.

Planting the Seed

Beet seed is then planted in rows 14 inches apart on top of the beds with the water furrows between the 26" rows being smoothed out by large pipe drags. This leaves the soil in perfect shape for irrigation. I irrigate for germination immediately after planting.

Since I plant my beets about the first of March, I do not have many weeds emerged until after the beets are thinning size. Our big weed problem in this country comes from the emergence of "careless" weeds from the middle of May on throughout the rest of the summer. We found the solution in Treflan.

Herbicide and machine thinning are "the friends" in Donald Lee Terrell's excellent beet growing system. He had a 29½-ton yield last year.

Just before the beets are ready to thin, apply ½ to ¾ of a pound of Treflan, broadcast over the entire area, incorporated approximately 1½ inches deep between the rows, leaving about a 3-inch strip down each row.

Then Comes Thinning

I then thin with a Blackwelder thinner adjusted to leave 170 to 200 beet-containing hills per 100 feet of row. After mechanical thinning I reshape the water furrows and push some of the Treflan-treated soil back around the beets and drag my pipes in preparation for the next irrigation.

The only hand labor I have used with this scheme the past three years has been to pull out what few weeds had emerged prior to the Treflan treatment and had been missed by the mechanical thinner.

All I find it necessary to do for the beet from that time is irrigate when they need and apply fungicides for leaf spot control.
How your appestat* and sugar can control weight.

Your “appestat” is a kind of hunger switch in your brain.

When it’s turned up, you’re hungry. And you may overeat.

Sugar turns your appestat down—helps you eat less.

Read how.

In these days of artificial sweeteners and fad diets, you may have some trouble thinking of ordinary sugar as a key to weight control. But that’s exactly what sugar can be to you when you understand how your appestat and sugar work together.

When your blood sugar level is low, your appestat is turned way up, and you’re hungry. You’re apt to eat more than you need, before your blood sugar level can rise again.

So what you do is this: when you’re very hungry, take a little sugar—in coffee, a soft drink, ice cream, pastry, or candy. Sugar raises your blood sugar level faster than any other food. (Artificial sweeteners have no effect on blood sugar level.) And then your hunger switches off. As a result, you can eat less and feel better when you keep sugar in your diet.

The calories in sugar burn up fast and they give you energy to go on. And sugar tastes good, too. Do you need any more reasons to stay with sugar?

Only 18 calories per teaspoon—and it’s all energy.

*S“A neural center in the hypothalamus believed to regulate appetite.”—Webster’s Third New International Dictionary.

SUGAR INFORMATION, INC.
P.O. Box 2664, Grand Central Station, New York, N.Y. 10017
An unofficial Colorado sugar ambassador, Jim Sitzman, La Salle, was loaded with sample sugar bags for distribution in Des Moines, Iowa in April. The sugarbeet grower represented the state as Outstanding Young Farmer of the Year. (See story on Page 8)
serving progressive growers in Colorado, Nebraska, Kansas, Montana, Wyoming and Texas

THE GREAT WESTERN SUGAR COMPANY
A DREAM COME TRUE

Tower monuments to the foresight and perseverance of grower and Company leaders, glistening white GW sugar bins dominate the western Kansas skyline as the Kancol factory, featured on the front cover, gets ready to slice its first crop of beets.

The factory was just a dream 11 years ago, when the first sugarbeets were planted in the region, in Kit Carson County, Colorado. In its first year, the new plant will not be able to process all the beets from the 41,000 acres that were planted in the eight counties that now comprise the Kancol area. Excess beets will be processed in Colorado.

Formal dedication and open house ceremonies for the new plant, located five miles west of Goodland, are scheduled for Saturday, Sept. 21, with beet harvesting and processing slated to begin shortly thereafter.

National, state, and local agricultural, business, community and political leaders will join with thousands of growers and neighbors in paying tribute to the sugarbeet industry, which will pour millions of dollars into the economic bloodstream of eastern Colorado and western Kansas by reason of the new factory.

You are cordially invited to be with us on the big day. Open house begins at 9:00 a.m. and ends at 5:00 p.m. Formal dedication ceremonies will be at 2:30 p.m. Come and bring your friends.
Whether sugarbeet acreage allotments are to be imposed for 1969 is now being considered by the U. S. Department of Agriculture. Interested parties have presented their views. The record has been closed.

The answer will not come easily. It will not satisfy everyone. At the hearing in Denver July 25, some grower groups testified for and some groups against proportionate shares. Likewise among beet sugar companies, there was no common position.

Proponents of restrictions feared that without controls the industry could wind up on Jan. 1, 1970 with too much sugar. Advocates of no controls, on the other hand, feared that inventories then might not be large enough to permit the industry to fill its 1970 marketing quota.

Directly ahead are the 1968 production campaign and the final months of the quota marketing year. Therein lie a big part of the answer as to whether 1969 proportionate shares will be necessary. Unfortunately, the Government must make its decision before all the facts are known.

The current crop's sugar outturn could beat the prior record of 3,320,000 tons in 1964. But it is still anybody's guess. Thousands of 1968-crop acres are yet to be planted in California and Arizona. Equally uncertain is the size of calendar 1968 marketings. They, too, could be of record size, but an inadequate Jan. 1 inventory will likely prevent them from equaling the 3,264,000-ton quota presently assigned to the industry.

Back of us lie three straight years when beet industry crop production was less than our annual marketing privilege. This year will hopefully see a turn. Beet area proponents and opponents, on the matter of 1969 acreage allotments, agree on one point—the need to balance supply with quotas. We must demonstrate our ability to utilize the marketing privilege granted us by the present Sugar Act.

The total size of 1969 plantings does not appear to be an issue among those favoring and those opposing 1969 beet proportionate shares. For discussion purposes, the Government witness at the hearing spoke in terms of an allotment of 1,585,000 acres. Those against controls thought that, without them, 1,587,000 acres would be planted. Share proponents, while recommending a total of 1,550,000 acres, also asked that no established grower receive a 1969 allotment below his 1968 plantings. If controls were imposed and if more than the single year 1968 were considered as "history," which the Government itself advocated, it would be difficult to accommodate in 1969 all growers' 1968 plantings within a 1,550,000-acre total.

For reasons detailed at the hearing and amplified in an Aug. 16 brief, Great Western is opposed to 1969 acreage allotments. A spokesman for most of our growers favored controls. Each view was presented fairly and without rancor.

With such mutual respect for each position, we know that, whatever decision is reached in Washington, growers who favor allotments, growers who do not want restrictions, and Company representatives will work together in 1969 to solve the many difficult problems that are bound to arise.
Now is the Time to Plan for Use Of the Electric Thinner in 1969

Growers contemplating use of electronic thinners should start making plans now to expedite thinning of their sugarbeets in 1969.

Early planning was one of the major factors for successful use this year of two Eversman Selectronic thinners at Brighton. One was operated by Great Western and thinned 207 acres, while the other, operated by a grower, thinned 246 acres. Grower acceptance was favorable.

Growers, anticipating use of electronic thinners next year, should have a good seed bed and use proper selective herbicides, the Brighton work shows. Growers must decide whether they will plant on beds or flat planting and they should establish furrow or chisel marks early, so the tractor will follow the same route in all operations, such as planting, ditching, cultivating and thinning.

**Pre-emergence Best**

Among points brought out in the operation of the Company machine:

—Results were better on beets treated with pre-emergence herbicide (Ro-Neet in all cases). Post-emergence treatment killed the weeds, but they were still present and activated the thinner knives.

**Ro-Neet Does Good Job For Brighton Growers**

Grower acceptance of Ro-Neet was excellent this year in the Brighton area, thanks to good results on 4,100 acres.

Fields receiving pre-plant Ro-Neet had almost weed-free conditions, making a nearly complete mechanization program possible with electronic thinners. Only minor follow-up weeding was required.

Growers who were unable to use the thinner, because of the time factor, experienced no difficulty in labor acceptance of the clean fields. Many laborers worked the fields at authorized lower wage rates. Growers are being encouraged to use more Ro-Neet in 1969.

—Murray Silvernale, agriculturist.

All acreages were cultivated before use of the machine; however, it would be better to cultivate before using the thinner, if possible. In some instances, cultivation threw up rocks or other materials in the row, activating the knives.

—Six seeds per foot seemed to give best seeding results. The average plant population was 25 plants per 100 inches of row.

—Average beet size was in the eighth stage at thinning time.

—After thinning, the stand per 100 feet of row averaged 109 plants (this varied from 104 to 126).

The Eversman machine, or ones of similar design, show much hope toward full mechanization of the sugarbeet crop. Acres thinned by the Eversman this year still needed hand labor for removing some plants or weeds, but the labor could work more acres per day.

—Dick Riddell, agriculturist.

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**Bill Strauch, Morrill, Neb., and Juan Mendez Laredo, Tex., are celebrating 21 years together. Juan, left, and his family arrived May to help Bill with his irrigating, field, and sugarbeet care. ("The Business Farmer" photo.)**
Electric Thinner Demonstrations

You are invited ...

by The Great Western Sugar Co., to attend any or all of four electronic thinner demonstrations in Colorado, Nebraska and Kansas.

They are scheduled to give everyone interested in sugar beets an opportunity to see the new machines in action.

Summer plantings of beets have been made at these locations. Weed control herbicides were incorporated on a modified bed.

GW monogerm seed was space-planted, utilizing a guidance system for accuracy of subsequent field operations.

Prior to each demonstration, each machine will have thinned some beets to show the condition of the field after removed plants have died.

A representative of each thinner manufacturer will be present to explain the operation of his machine and show it thinning beets. Beet stand counts will be taken before and after the thinners are used.

Refreshments will be served at all four demonstrations.

TIME: 9:30 a.m. and 1:30 p.m.

PLACE:

GREELEY, COLO. SEPT. 9
7 1/2 miles east of Greeley on 8th St. Road, or 4 miles north of Kersey and 1/4 mile east, on the Charles Achziger farm.

HOLYOKE, COLO. SEPT. 11
4 miles east and 1 mile south of Holyoke, on the Gary and Stan Willmon farm.

SCOTTSBLUFF, NEB. SEPT. 13
1/2 mile west of Scottsbluff on the W. O. Barbour farm. (Between Hwy. 26 and the new bypass.) Or 1/2 mile west of Taylor's furniture store.

GOODLAND, KANS. SEPT. 16
On the Company field, adjacent to the factory which is located 5 miles west of Goodland on U.S. Hwy. 24.
Nearly complete elimination of labor in sugar beet fields is the major aim of herbicide screening experiments and commercial application tests being carried out by Great Western. This is a cooperative effort, with a number of annual tours, on farms and Experiment Station test plots, enabling those interested in weed control to compare ideas in search of better means for elimination of weeds.

Testing, touring, teaching and learning are key factors in the work being carried out. Frequently, the process of solving problems together has enabled us to avoid mistakes.

Two cooperative tours this year demonstrated how many different groups and organizations can work together.

These tours were basically learning sessions for Company agriculturists, growers, chemical suppliers, state experiment station researchers, USDA scientists, county agents and others interested in the industry.

In late May, a tour of approximately 100 acres of research plots and several grower fields at Longmont, Greeley and Fort Collins Colo., was completed in cooperation with the Colorado Agricultural Experiment Station and the USDA. Company agriculturists and grower association research committee members had a similar tour in early June.

The 1968 Tests

In 1968, the standard herbicides — Neet, Ro-Neet + Avadex, Pyramin + Herbicide 283 and Tillam + Avadex applied pre-plant — gave effective results with broad spectrum weed control averaging 85 percent. This percentage was achieved under adverse planting conditions. Ro-Neet had more...
effect than in previous years, showing slight to moderate retardation.

Pyramin + Dalapon + Adjuvant and Topcide were effective post-emergence treatments, particularly when applied after a pre-plant treatment of chemical, such as Ro-Neet. Broad-spectrum weed control, obtained from Pyramin + Dalapon and Adjuvant alone, averaged 85 percent, with significant carry-over control beyond crop thinning, until the crop canopy period.

Some unsatisfactory post-emergence weed control was observed. This was probably caused by applying the Pyramin mixture when the weeds were too large, particularly under cold air and dry soil conditions. Kochia control with Topcide ranged from 80 to 95 percent, although cool weather (air temperatures below 55 degrees at application time) and treatment of large weeds caused some unsatisfactory results.

New Herbicides

New experimental herbicides appeared encouraging. The most promising chemicals, out of many herbicides and combinations tested, were CP 52223, applied pre-plant or pre-emergence, and Schering-4075, placed post-emergence. Schering-4075 also performed well in many European countries and elsewhere in the U.S. this year. It was demonstrated on tours that this fast-acting, relatively weatherproof herbicide had excellent control of many broad-leaved and grassy weeds, including Kochia, but not pigweed. In addition, certain 2- and 3-way post-emergence combinations containing Schering-4075 had broad-spectrum effectiveness.

CP 52223 responded exceedingly well to soil placement, either pre-plant or pre-emergence. This versatile herbicide may well have potential on very large, particularly on alkaline soils infested with grass, pigweed and Kochia.

Helps Cut Labor

Some split-application tests had complete or nearly complete chemical weed control—the criterion necessary for precision machine thinning, grower approval and early retirement of hand labor. Selective chemical pre-conditioning (toxication of weed tissue which weakens the plant and makes it more susceptible to a second application of chemical), inherent to split-application, can be helpful in improving efficiency of herbicides. This technique, combined with the post-emergence timing factor, may well reduce the total amount of herbicide required and decrease dependence on lay-by application.

Results obtained with total coverage, harrow-incorporated Ro-Neet and CP 52223 applied alone, were equal to weed control obtained with power incorporation in bands using the same chemical. Less chemical rate per unit area treated was required when herbicides were applied in total coverage, as compared to band coverage, on some soil types. Injector placed Ro-Neet in sandy to sandy loam soils had weed control effectiveness equivalent to the other placement methods. However, injection under high moisture conditions, at a shallow depth on heavier soils, gave faulty results.

Real technological advancement is the direct result of the attitudes and skills of the men involved cooperating together to work toward the goal of nearly complete chemical weeding in sugarbeets.

Aqua Shoes and Ro-Neet Help Cut Farm Labor

Chemical weed control tests were the topic under discussion on this Matsuda farm test plot in the Eaton, Colo., district. In the foreground L. to R. are: L. E. Butler, southern district manager; Dr. E. F. Sullivan, Experiment Station agronomist; Janice Matsuda, daughter; her grower father, Tatsuo Matsuda; and Allan Auger, agriculturist.

Chemical weed control tests were the topic under discussion on this Matsuda farm test plot in the Eaton, Colo., district. In the foreground L. to R. are: L. E. Butler, southern district manager; Dr. E. F. Sullivan, Experiment Station agronomist; Janice Matsuda, daughter; her grower father, Tatsuo Matsuda; and Allan Auger, agriculturist.

Aqua Shoes and Ro-Neet Help Cut Farm Labor

Chemical weed control and use of aqua shoes when planting are methods used by Robert Felte, Loveland, Colo., district, to help cut down on field labor.

He applied Ro-Neet to his 45 acres of sugarbeets and used the aqua shoes to add water, to facilitate germination of the seed. Bob used about 100 gallons of water per acre and planted three seeds per foot with his converted planter. He finished with a 90 percent stand.

He then used Pyramin plus for post-emergence control and says both chemicals did an adequate job. Next year he says he hopes to continue his labor elimination program.—Dale Shull, agriculturist
Eastern Colorado Farmer Prefers Sugarbeets as a Great Cash Crop

Year in and year out sugarbeets are proving the best bet for the Loren F. Dickson and Sons farm at Vernon, Colo. Theirs is a large operation, and the enterprise has been growing steadily since Loren's father, James Henry, moved from Illinois and homesteaded in 1887.

Loren was born on the farm, as were his sons, Marvin and Ronald. They own 4,000 acres with nine wells and sharecrop with four more wells. Their first well was put down in 1955. Today they have 12 water-propelled sprinklers. The Dicksons ditch irrigate from one of their wells.

The Dicksons have 400 acres of sugarbeets, 1,150 acres of corn, 400 acres of wheat and 100 acres of barley. Loren says both the wheat and barley were hit by worms and dry weather this year.

In addition to the foregoing crops, they raise some alfalfa hay to feed their 150 cows. They run their cow-calf operation on 1,800 acres and winter-feed an additional 400 to 500 cattle.

Loren says he not only likes sugarbeets as a consistent cash crop, but he finds the tops work well as a cattle feed.

Loren even plans to work his sprinklers into his cattle operation. This new project is nothing unusual for the farm pioneered the use of self-propelled irrigation sprinklers in the area.

Next move is to experiment with the sprinklers on pastures to see if the size of the cow-calf operation can be increased. These sprinklers are a must for the Dicksons. Loren says the land is too rolling for ditches.

Holding Loren down long enough to talk is a tough job. He jumps from the seat of his tractor to the cockpit of his four-seater plane with equal dexterity. Loren is a president of the Colorado Flying Farmers Association. He has more than 2,000 hours in the air and now his son, Marvin, is flying—-a busy family.
Initial Results Appear Favorable On Largest Fumigated Acreage

By LEE E. BUTLER,
Southern District Manager

A record amount of sugarbeet acreage was fumigated for nematode control this crop year and initial results appear favorable.

Considerable impetus was given to this fumigation practice by the Company's program of reimbursing the grower $5 for each acre treated. This, plus results of past experience of limited commercial applications, helped show the way for growers.

Many strip tests were applied by Company-owned applicators this year, to determine need for treatments on various farms and to study rates of application and compare brands of chemicals.

At this time, there is much enthusiasm about results. While final proof of effectiveness must await harvest, it is easy to see differences in size and vigor of tops and roots, between treated and untreated areas. Variations in plant population are also noticeable. Good stands remain on treated strips and lighter stands are left where nematodes have taken their toll on untreated areas.

Planning Ahead

Growers should make plans now for fall fumigation of land for the 1969 crop. Results to date, while not final, must be judged in making the decision to use fumigants this fall.

Either spring or fall applications are approved, since good results have been observed in both cases. Fall application, however, allows planting the following spring, as soon as weather permits. Spring fumigation is advised for land normally prepared at that time, followed by a waiting period of ten days to two weeks before planting.

To encourage fumigation, the Company has a 3-point program:

1. $5 will be paid for each acre treated on which sugarbeets will be grown in 1969. However, no payment will be made to growers who received reimbursement this spring. The grower's agriculturist must approve rates and methods of application.

2. Strip testing will continue, with Company-owned machines applying 12-row strip tests over the area, at no charge to the grower.

3. Company machines will be made available—on loan to growers at no charge—for commercial applications.

Soil fumigation is not a substitute for good farming practices. Continued emphasis must be placed on crop rotation and control of weeds which are hosts to the nematode.

Methods and rates of application may vary from farm to farm when applying fumigants. For this reason, use of strip tests and checks in commercial applications will be of great value in adjusting requirements for each farm.

SWEET FISH FROZEN

Sugar to freeze fish? Indeed. Commercial processing experts know that flavor is better preserved in frozen foods—especially fish—when a sugar solution is used in freezing.
Production of high root tonnage, with a high sugar content, is the goal of sugarbeet growers. To attain this goal, the producer must draw upon past crop experiences and knowledge of soil types (using soil tests) on a particular field or area. At the same time, he should use proper management of his fields, with the right fertilizer formula.

If growers use proper crop rotations, apply correct amounts of fertilizers, plant early, have a uniform stand free of weeds, and irrigate often enough to keep the plants from showing signs of drouth, they have done their part toward obtaining top yields of sugar.

Adjustments to past cropping history, soil type, climatic conditions and other factors must be made before actual fertilizer amounts can be determined. But, at the same time, manure or a legume rotation is strongly recommended to maintain high yields.

Manure Application

Manure should be applied to the crop being grown ahead of sugar beets. Manure releases the bulk of its nitrogen late in the season, which may result in an excess top growth and a lower sugar content. Actual practice has shown a trend toward lower yields and less sugar, where legumes were not included in the rotation for several years. Factors which increase beet tonnage often reduce sugar content. Nitrogen application later than the last of June also can result in reduction of sugar.

<table>
<thead>
<tr>
<th>Available Soil Nitrogen</th>
<th>Roots</th>
<th>Sucrose</th>
<th>Sucrose</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Ton/A</td>
<td>Percent</td>
<td>Pounds/A</td>
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<tr>
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<td>13.9</td>
<td>16.1</td>
<td>4500</td>
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<tr>
<td>Adequate</td>
<td>28.8</td>
<td>15.3</td>
<td>8800</td>
</tr>
<tr>
<td>Excess</td>
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<td>8000</td>
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</tbody>
</table>

Table 1. Interrelationship of nitrogen and sucrose production.

Ideally, the supply of nitrogen should be sufficient to promote maximum plant growth during the early part of the growing season. Table 1 shows the interrelationship of nitrogen supply in the soil and sucrose production.

Some producers use the general rule of thumb of 100 pounds nitrogen and 100 pounds of phosphate per acre. This formula may furnish too much nitrogen and phosphorus where the soil is high in organic matter or where the soil already has high reserves of the two nutrients. Coarser textured soils where organic matter is low, may require more than these amounts.

Soils with highly calcareous surface profiles (soils of high calcium content and perhaps iron and aluminum-bearing salts) tend to tie up phosphorus. Actually, there are no research data that indicate high rates of nitrogen will offset high rates of phosphorus or

<table>
<thead>
<tr>
<th>Year</th>
<th>15 tons manure annually plus 80 lbs N 80 lbs P₂O₅</th>
<th>12 tons manure annually plus 40 lbs N 40 lbs P₂O₅</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Roots T/A</td>
<td>Sugar lbs/A</td>
</tr>
<tr>
<td>1959</td>
<td>19.2</td>
<td>5721</td>
</tr>
<tr>
<td>1960</td>
<td>19.1</td>
<td>6265</td>
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<tr>
<td>1961</td>
<td>17.0</td>
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<tr>
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<tr>
<td>Average</td>
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<td>6197</td>
</tr>
</tbody>
</table>

Table 2. Comparison of yield of roots and sucrose from two fertility levels for six years. (When manure is not available, rates of commercial fertilizer must be adjusted accordingly.)
high rates of phosphorus will offset high rates of nitrogen.

Rhoades and Harris, Nebraska researchers, found there is probably a greater need for phosphate fertilizers for sugarbeets grown on calcareous soils, such as Mitchell and Buffalo. Bayard and Bridgeport soils would be intermediate in phosphorus supply. Response to phosphate fertilizers was least on Tripp soils, which have a non-calcareous surface soil.

Sugarbeets in these areas rarely respond to fertilizer nutrients other than nitrogen and phosphorus. Maximum sugar yields are usually reached with applications of 90 to 120 pounds of nitrogen as a preplant, or 60 to 90 pounds as early side-dress. These amounts must be adjusted for nutrient reserve on each individual field.

Table 2

Table 2 shows less nitrogen and phosphate fertilizer resulted in less tons of roots, but more pounds of sugar per acre—the ingredient that puts more dollars in the bank. This work was under the direction of Frank Anderson, Scotts Bluff Station agronomist.

The above-ground portion of the sugarbeet plant reaches maximum dry weight by mid-August. Roots and sucrose production continue to increase at a relatively uniform rate until harvest. Weather has much influence on yields and sugar content. For example, cool nights and warm, sunny days in autumn promote formation and storage of sugar. It should be remembered that early plantings generally produce the highest yields. Beets planted April 1-15 have yielded up to five tons more per acre than later-planted beets at the Scotts Bluff Station.

Wyoming Governor Sets Farm, Ranch Month

Importance of agriculture to Wyoming’s economy was pointed out by Gov. Stanley Hathaway when he proclaimed August, 1968, as farm and ranch month. The governor says agriculture, second largest enterprise in Wyoming, returns $200 million to the state’s economy annually.

Gov. Hathaway praised the state’s producers of sugarbeets, cattle, sheep, wheat, dairy products, hay, dry beans, barley, oats, corn, potatoes, hogs, poultry, honey and horses. Agriculture was featured Aug. 27-31 at the Wyoming State Fair in Douglas.

New Magazine Editor Is Former Newsman

(Note: I asked the editor to reserve this space for me so that I might tell readers something about him and his background.—Robert J. Fisher, vice president, grower and government relations.)

The new editor of “Through the Leaves,” John M. Young, is a former farm editor and newspaperman with worldwide experience.

He takes the place of T. H. “Tom” Ferril whose retirement, after 42 years with Great Western, was announced in the last issue of the magazine.

Before coming to the Company last December, John was briefly with the Federal Crop Insurance Corp. He wrote farm stories for that agency in eight northwestern states.

He was farm editor on the “Billings (Mont.) Gazette” and the “Ogden (Utah) Standard-Examiner” before joining the FCIC. He was previously regional reporter on the Colorado Springs “Free Press” and on the Montrose, Colo., “Daily Press.”

Father Raised Cattle

John was born in Hollywood, Fla., but his father later had a cattle ranch in Peyton, Colo. John well remembers the dust storms of the 30s. His father later managed a ranch at Woodland Park, Colo.

He began his newspaper work on two English language dailies in Havana, Cuba, where he attended the University of Villanova—an affiliate of the same named university in Pennsylvania.

After five years in Cuba, John was on the sports copy desk of the “Montreal (Canada) Herald”. He later was city editor of the “Moose Jaw Times-Herald” and the “Calgary Albertan,” both in Canada.

He worked a year and a half on the Sydney, Australia “Daily Mirror”, after leaving Canada. He had been in Sydney in 1943 and 1944, during rest leaves from duty as a 13th Air Force gunner-radio operator.

Enroute from Sydney to England, John was a feature writer for the USDA dairy exhibit at the Verona (Italy) fair. In London, he was a copy editor on the “London Evening News,” before returning to this country.

John and his wife, Della Rae, were married in Ogden, Utah, Mrs. Young’s former home. They now live in Aurora, Colo.
Ro-Neet, Pyramin Plus are Good For Greeley Area Weed Control

Ro-Neet, applied pre-plant in the Greeley, Colo., area, gave satisfactory weed control for nearly every grower who used it this year. Pyramin plus, applied post-emergence, gave equally as good weed control, if used timely and with proper moisture conditions.

Ro-Neet worked equally well with overall application as it did with power incorporated band application. It is felt by many growers that the secret of getting good results on overall application is to have the soil surface in good tilth and as dry as possible before applying the herbicide.

If the ground is such that growers can fall plow, without the wind blowing soil, it would be a good idea to do so.

Of course, it goes without saying that growers must use the correct amount of chemical and mix it into the soil, with a harrow, immediately following application.

Preliminary observations show Ro-Neet has greater longevity than some of the herbicides used in the past.

In this area, where growers had to replant due to a severe freeze, there was enough residual Ro-Neet to give good weed control throughout the thinning season. Growers found it didn’t make too much difference whether they surface-worked the field before replanting or replanted in the same row— they still had weed control.

Soil moisture is of primary importance. After the herbicide has been applied and the beets planted, an environment conducive to good plant growth must be established. If there is insufficient rainfall for good germination, then irrigation is a must.

Soil moisture is even more critical with post-emergence than with pre-emergence herbicide. Here again, to get good weed control, an environment for ideal plant growth must be established. In most years, means an irrigation just prior to the application of the herbicide.

With the knowledge gained by the many growers using herbicides successfully the past spring, we believe there will be much wider use of chemicals, to control weeds in sugarbeets, in 1969.

Successful use of chemical weed control for sugarbeets is a means to an end. With these electronic thinners being developed, separation of the beet from the hoe is drawing closer to being a fact.—Waldo T. Peterson, Greeley manager.
Sheep pasturing on beet tops created a compaction problem for a Morrill, Neb., farmer who found irrigation water not penetrating satisfactorily and running off his sloping ground.

Tim Dollerschell, agriculturist, says Don Weinmaster was having to irrigate his sugarbeets as many as 13 times before he started using a sub-soiler to rip as deep as 30 inches. Don does his tillage in the fall after the beet tops have been removed. The field is then spring plowed and planted to corn for the next two years. In the third year, the process is repeated following another sugarbeet crop.

Another advantage of sub-soil tillage is more extensive corn root systems and longer and more uniformly shaped sugarbeets. It is about 11 inches to hardpan on Don's farm. It takes a 90-horsepower tractor to pull the sub-soiler.

Don has 360 acres of land with about 100 in beets and the remainder in corn, potatoes and hay. He feeds about 300 cattle per year on the beet tops and usually has 2,000 to 3,000 head of lambs. He contracts his spuds for a steady market.

Sugar Research Group In 4-Continent Study

Sugar companies on four continents are sponsoring a new association to study use of sugar on a global scale. The International Sugar Research Foundation, Inc., which began operations July 1, has elected Dr. Philip Ross, Potomac, Md., as its first president.

The new organization succeeds the 25-year-old Sugar Research Foundation. The International Foundation plans to expand the older group's activities in dental health, consumer preferences, improvements in food technology, and non-food uses of sugar.

Dr. Ross, a botanist and ecologist, says the early program will concentrate much of its efforts on finding answers to questions on the safety of artificial sweeteners. He says the U.S. Food and Drug Administration recently asked the National Academy of Sciences—National Research Council to conduct an evaluation of the safety of cyclamates, most widely used artificial sweeteners.

A Broad Membership

Membership of the international group includes sugarbeet processors, raw sugar producers and cane sugar refiners from the U.S., Canada, Mexico, Ireland, the United Kingdom, Belgium, South Africa and Australia. Representative organizations, in several other countries, have indicated interest in joining, Dr. Ross says.

The foundation's president was previously scientist-administrator of The International Centers for Medical Research and Training and the U.S.-Japan Cooperative Medical Science program of the National Institutes of Health at Bethesda, Md.

Dr. John L. Hickson, with the original Sugar Research Foundation since 1953, is vice president and director of research for the International Foundation. Its headquarters are at 52 Wall St., New York City.
Howard Hart, Powell, Wyo., poses with a group of youngsters working his 110 acres of beets. L to R, they are: Randy and Brett Williams; Judy Heimer; Howard's daughter, Rhonda; Howard; Kay Heimer; the grower's granddaughter, Leatha Snell; and Bonnie Brinkerhoff.

**Teenagers Work Wyoming Beets**

Chemical weed control and mechanical thinning enabled Howard Hart, Powell, Wyo., to grow his beets with a minimum of field labor this year. All that was needed was some weeding by his daughter Rhonda, granddaughter Leatha Snell, and seven of their neighbors from Powell High School.

"With labor conditions as they are today, we need herbicides to raise sugarbeets," Howard explains. "Farmers have to do everything they can to make the job easier for labor."

The president of the Big Horn Basin Beet Growers Association says his 110-acre beet crop was 100 percent mechanically thinned this year, with his 15- to 17-year-old "laborers" only having to pull out a beet "here and there." Howard says they worked well and earned about $250 each for six weeks work.

The Wyoming farmer has been raising sugarbeets since 1946. He farms 500 acres with 140 acres in hay, 100 in beans, 75 in corn, 28 in barley and the balance in beets and pasture.

Once in a while, Howard grows beans after his grain, but basically he rotates beets with barley and corn. He plows down his grain straw with a heavy application of nitrogen. He fall-plows his alfalfa and uses 160 pounds of nitrogen on this green manure.

Planting dates for Howard vary between April 6 and April 18, depending on weather conditions. He space-plants his seeds, five to the foot. He incorporates a 7-inch band of herbicide — mostly Pre-Beta with some Ro-Neet. For thinning, he uses a Speedy thinner with 4½-inch blades. And, his methods work for the Hart farm averages between 17 and 18 tons of beets to the acre.

Everything has to move correctly on the Hart farm for there is no time to waste. In addition to his farm and growers association chores, Howard is president of the 5-county Worland Federal Land Bank Association and is president of the local REA.
These Goodland High School boys, aged 14 and over, raise their hoes before attacking weeds in John Stroyer's sugar beet fields near Goodland, Kans. Planning their work are the new supervisor, R. B. Rigor, and outgoing supervisor, Harry Bennett, L. to R.

The Basin (Wyoming) Woman's Club was chosen one of the 10 best in the country in competition with 11,835 distaff organizations. Above, Mrs. Ralph Stahle, wife of the Company agriculturist, is presented the club's third place plaque by television star Art Linkletter at Boston, Mass.

Mrs. Orvine Kitchen, Kanorado, Kans., shows a group of Goodland High School girls, aged 14 to 17, how to hoe beets. This is the first year Mrs. Kitchen and her husband raised beets. They have 320 acres of farmland, with 30 acres of sugar beets. The rest is corn under irrigation and some wheat. Mrs. Kitchen says they went to beets because there "is no money in corn and milo." The girls work from 6:30 a.m. until about 2:00 p.m., leaving before it gets too hot.
Richard Butcher has received another scholarship for agriculture studies. The son of Mr. and Mrs. Dick Butcher, beet growers in the Stegall, Neb., area, won a $200 scholarship from Ak-Sar-Ben for use at the University of Nebraska agricultural college.

Richard also received the John R. Jirdon Foundation Scholarship for the second straight year. A graduate of Morrill High School, Richard is majoring in agronomy at the university.

Holyoke, Colo. Chamber of Commerce sponsored a picnic to show appreciation for the fine job out-of-state workers did this year in thinning and weeding sugarbeets.

Approximately 250 people attended the event, including growers and Company agriculturists and their wives. A group of Catholic Sisters and students from Denver, who have been working with the migrants, helped with games and refreshments — sandwiches, watermelon and soft drinks.

Lovely Virginia Kolb, 18-year-old daughter of Mr. and Mrs. Clarence Kolb, Hysham, Mont., has chosen an exciting career.

The Hysham High School graduate is now enrolled in a six-month course at an airlines training school in Denver, Colo.

She is to graduate in December. Virginia used to hoe beets for her father.

Lyman H. Andrews, who retired last year as Great Western southern district manager, is now in Tehran, Iran. He is helping train Advaz Sugar Refinery personnel as they work to expand their beet crop to make the country self-sufficient in sugar.

Big question around Billings, Mont., is: What does Ed Lenhardt catch his many three-and-foot-pound native cutthroat trout? Above, Ed holds tray of frozen cutthroats with daughters Shanna, 6, and Sharlene, 4. John Sherman, Company agriculturist, kept asking but all Ed would say was "It's a secret reservoir in the Livingston area."

Congratulations to John Rock, son of Mr. and Mrs. John Rock, Brighton, Colo., for fine work in fattening his 4-H Club calf. The 15-year-old’s entry, at the Adams County Fair, took first in its class and grand champion steer.

The Hereford-Angus cross, weighing 953 pounds, sold at 75 cents a pound. The youth says he will use the money to buy another calf. In addition to other chores this year, John helped his father cultivate and irrigate 20 acres of sugarbeets.

Seven young beet growers came out on top at the recent Morgan County Fair, Brush, Colo. They entered groups of three beets for prizes.

Mike Cook took first in the under 2½ lb. class, second in the over 2½ lb. and had the winning best type beet.

Russel Kauk took second place and Allan Fritzler, third, in the under 2½ lb. class. Rodney Kauk placed first and Jeff Cook third in the over 2½ lbs. Rodney Cook took second and Melvin Green, third, in best type competition.
William C. “Bill” McGuffey has been appointed vice president of agriculture and grower affairs for Northland Research Co. of Minnesota, recently aligned with Great Western. He will direct agricultural activities for the company, which is seeking to perfect a process for extracting sugar from “sweet stalk” corn. Bill operates out of Denver, where he continues as GW assistant director of grower and government relations.

Huntley Project (Mont.) Lions Club promoted the recent field day at Montana State University’s Huntley Branch Experiment Station. One of the key men behind the day-long tour, barbecue and games was Marvin Balzar. Marvin and his brother, Ronald, raise 105 acres of sugar beets.

Featured were thinning demonstrations by John Deere, Eversman and Monomat machines. Considerable sugarbeet research is carried on by Huntley Branch, in addition to investigations on other crops and livestock.

The Billings Chamber of Commerce Agriculture Committee, banks, area civic clubs, farm equipment dealers and other groups helped make welcome the 600 people attending the field day.

Bob Pierce, Great Western agriculturist at Pompey’s Pillar, Mont., has been appointed to the Huntley Branch Experiment Station advisory board for a three-year term.

This board, composed of farmers, bankers, county agents and others, advises the station on its overall research program. Bob will be able to give special assistance on sugarbeet research.

Tim Dollerschell is the new agriculturist for the area north and west of Mitchell, Neb. A Colorado State University graduate, Tim taught vocational agriculture at Grover, Colo., before joining the Great Western Agriculture Experiment Station staff at Longmont, Colo.

Tim, his wife, Mary, and their two preschool age children, live northwest of Mitchell.

On top of his duties as vice president of grower and government relations, Robert J. “Bob” Fisher will spend part of his time in the next half-year as a member of Colorado Gov. John Love’s blue-ribbon committee on efficiency and economy in state government. Similar “Little Hoover” commissions in other states have resulted in millions of dollars in savings to taxpayers.
Where there's irrigation, there's mud. Herb Hughes, Imperial, Neb., and his son, Larry, L. to R., carried some of their sugarbeet field with them when they finished adjusting their self-propelled sprinkler. The sprinkler waters about 125 acres of the 250 acres they have in beets. Herb's tenant farmer, Gilbert Rightmeir, has another 200 acres of sugarbeets. Herb was a member of President Johnson’s National Advisory Commission on Food and Fiber.

Chemicals, Thinner Solve Help Problem

Chemical weed control and a Blackwelder thinner proved to be the answer to Harlan Giantz’ labor problem this year—plus assistance from his family.

The Dacona District farmer at Longmont found the only labor required was his wife and three children — after the chemicals and mechanical blocker did their job. It took the “laborers” only two weeks to work the beets part-time.

Harlan used the following pre-emergence chemicals on his 101 acres: Ro-Neet on 91 acres; Endothal, 5 acres; and Pyramin and Herbicide 283, 5 acres. Ro-Neet did an excellent job, although allowing some Kochia to slip by. He used Pyramin plus on 10 of his acres, post-emergence, where Endothal and Pyramin and 283 failed to do the job.

—Robert J. Bever, agriculturist.

Farms Plan Unchanged By Windsor Land Sale

Few changes, if any, will occur in Great Western's commercial farming operations as a result of the recently announced pending sale of Company lands at Windsor, Colo., to the Eastman Kodak organization, according to Murray R. Petersen, a GW vice president.

Since Eastman will require only a small portion of the land for its immediate needs, GW will lease back the Windsor farms on a long-term basis and continue to operate them.

Kenny Knaus, manager of the GW farms department under Petersen, announced for 1969 furtherance of a three-point program that began this year at Windsor:

1. Continuous beet cropping on a limited acreage to ascertain its feasibility and the success of fumigation.
2. Bed planting of beets, as is practiced in some of the newer GW areas, to learn if irrigation and cultivation can be done at less cost.
3. Use of forage harvesters in making haylage and accurate recording of dry matter yields to determine alfalfa’s place, under this system, in a beet rotation.

Kenny stressed that the GW farms are not operated as research plots but as a sound commercial enterprise. “We want to face the same problems,” the farms manager said, “as those faced by our growers in the operation of a beet and livestock farm.”
Bridger, Montana, Beet Acreage Expands Ten-Fold in Decade

There is money to be made in sugarbeets, and growers in the Bridger, Mont., area expressed their faith in the industry by expanding from 400 acres 10 years ago to 4,000 acres in 1968.

Leo C. Bratsky, Bridger, boasts of the expansion. He has been growing sugarbeets since 1946, and his father since the mid-1920's. Leo was the only sugarbeet grower at the Bridger station in 1953.

Today there are three receiving stations in the valley—Bridger, Fromberg and Edgar—with a total of 6,900 beet acres.

Leo explains the growth thusly: "Improved farm methods and use of herbicides make sugarbeet growing more profitable than ever before."

A director of the Mountain States Beet Growers Marketing Association of Montana, Leo has a total of 625 acres owned and leased. He has 200 acres of sugarbeets, 110 acres in corn and the balance in pasture and hay. He winters about 500 calves and fattens about 400 steers annually.

Leo reports "excellent" weed control with the use of Pyramin, Avadex and Herbicide 283 incorporated. Major control problems in his area are wild oats, Kochia, red root and lambsquarter.

Since Leo started using herbicides in sugarbeets, he found control of web worm host plants also has been good. Farmers in his area work hard keeping fence and ditch lines as free of weeds as possible.

They are finding it easier to get labor to work their relatively weed-free fields. Leo says labor finds the work easier and they can make more money by covering more ground.

Labor performance figures out at 22 acres per worker thinning at Bridger, as compared to about 17 acres per worker for the Billings territory as a whole.

Additional sugarbeet volume created receiving problems that have been met by additional Great Western equipment at Bridger. The old beet dump was replaced with a high capacity Silver piler. Last year the station was able to receive 40 loads an hour. Now, with two pilers, 60 loads can be handled. There is also a new set of scales with dual weighing facilities.
Sugarbeets are Important Crop
For Kansas Father-Son Team

Sugarbeets are an important crop for Harvey and Leo Hatcher of Goodland, Kans.—and have been for the past 10 years. Harvey and his son, Leo, farm more than 2,000 acres annually, with 195 acres of beets in crop rotation with corn and milo.

The Hatchers have 400 acres of corn, 250 acres of milo, 120 acres of alfalfa and “very little wheat.” It was 20 years ago that Harvey came to Kansas from western Iowa. “I got tired of mud in Iowa,” he says with a smile, “so I came out here and started irrigating.” There are seven wells used for ditch irrigation on the farm.

Harvey and Leo have been averaging about 20 tons of beets to the acre and have been in the “High Ten” for several years. “We put manure on our beet fields in the fall. This tends to keep down the sugar content, but the fields stay green right up to digging time,” they say in explaining their operation.

The Hatchers summer fallow 120 acres and fall plow it for the following year. They plow silage land before they put it back into beets. For weed control, they use Ro-Neet. They say rain after planting, rather than irrigation, makes this chemical work better.

This year they experimented with a John Deere mechanical electric thinner. Preparation of land was a vital part of their tests. They put in monogerm seed, at about six seeds per foot, with a two-inch drop.

Before using the thinner, they cultivated the fields and used a roller to get foreign items out of the way. This roller flattened corn stalks and clods so they did not falsely trigger the electric probe of the thinner. Then, the Hatchers left the beets alone for a couple of days, so they could straighten up for better thinner operation.

After thinning, Harvey says they were getting close to a goal of 100 to 120 beets in 100 feet of row. The thinner works six rows at a time, on the feeler rather than electric eye principle.

**Feeding Baled Tops**

As part of their operation, the Hatchers buy 400-pound calves and fatten them to about 800 pounds before they are sold. Sugarbeets fit well into this cattle feeding. Following harvest, the beet tops are piled and baled for feed.

When their farming and feeding chores are completed, the Hatchers still find time to take part in the charitable work of Goodland Elks Club. Harvey is past exalted ruler of Lodge 1528 and Leo is present exalted ruler. It’s one of several ways they keep busy in local community affairs.
Livestock Feeding and Farming
Keep Nebraskan on the Jump

Farming 480 acres keeps Howard Edwards, Lyman, Neb., busy during summer and feeding cattle and lambs keeps him hopping in the winter. He raises beets, beans, corn, grain and alfalfa. Howard is a “High Ten” grower and a firm believer in feeding his beet tops.

He lambs out 200 ewes and feeds 130 fat calves each year. His ewes get the beet tops in pens while lambing and chopped hay with ground tops afterwards. His cattle get corn, beet top silage and alfalfa hay. Howard swears by siloed beet tops as a superior feed.

He used Ro-Neet on his 84 acres of sugarbeets this year and found it helped cut his need for labor. In the past, he had at least 8 to 10 workers. This year he had 5 regulars and 1 worker part-time. They did some thinning and still had time to work other farms, during their 30 days with Howard.

Following harvest, Howard will be roughing his ground to keep the soil from blowing. He says there is not enough moisture in winter to pack the ground for spring, if the land is plowed. He explains that other farms in the area prefer fall plowing but, in his particular case, the soil is too light.

The Lyman farmer says crop rotation gives the land a rest and gives him a better chance to get more humus in the soil—whether from corn stalks or manure.

Plowing time comes as soon as winter weather breaks. This is usually by the end of February or early in March. Howard says he uses hybrid sugarbeet seed “all the way.” He plants eight seeds to the foot. His Ro-Neet granules are incorporated at planting.

He is agriculturist Bob Morley’s 1968 beet contest participant. He uses a Silver thinner on his 10 contest acres. He also uses the thinner on acres where the beets are thick, so as “to make it easier for laborers.”
Early Soil Samples Avoid Spring Rush

Farmers should bring in soil samples this fall to avoid the rush of heavy spring sampling and give themselves time to plan, according to Jay Partridge, soils technician, University of Wyoming Agriculture Substation at Powell, Wyo.

The station checks about 600 Wyoming samples annually at no charge. A copy of the result goes to the farmer, one to his county agent and one is kept in the station's files. Tests are made for organic matter (for nitrogen recommendations), available phosphorus, white alkali, pH (measure of acidity or alkalinity), soil texture and potash.

Jay says these tests are proving invaluable in western sugarbeet growing states. He says without tests farmers can lose money from not applying the right kind of fertilizer or from putting on unnecessary fertilizers.

Soil sampling tests also help show how cropping practices affect the building up of organic matter and indicate whether phosphorus level is improving or declining.

The soils technician says need for tests ranges from every year to once in five. Fields being tested for the first couple of times should be sampled more frequently. If crop or fertilizer history has been different from one field to another, they should be tested separately.

Knowing the clay and organic matter content of the soil is also helpful in determining the types and amounts of pre-emergence herbicides to be used for weed control.

Further information is available through Company agriculturists. County agents and experiment stations have soil sampling bags with instructions on their use.

Beet Sugar Supplies 45% Of the World's Sucrose

Beet sugar from the 1967-68 crop constituted 45 percent of the world's sucrose production, according to the July "Foreign Agriculture Circular" of the U. S. Department of Agriculture.

Record output of beet and cane sugar totaled 74.1 million short tons, raw value, an increase of 3.1 million tons from 1966-67, the Department noted.

Beet sugar, with 2.6 million additional tons, contributed 84 percent of the world's increase.

Full Chemical Cover Planned in Alliance

H. R. Henkel, Alliance, Neb., started using a bedder three years ago to make irrigation easier. This spring Howard went one step further—combining the bedder with pre-plant chemicals for weed control.

On one plot, he bedded one and one-half acres and three days later applied Ro-Neet, at the medium rate, with an Eversman incorporator.

He sprayed 22 ounces of Ro-Neet per acre, total coverage, on another field and pulled a harrow directly behind the sprayer. The treated soil was then bedded with 22-inch centers.

Good weed control could be seen in both plots, with the only difference being that the total coverage application had weed control between the rows.

Next year Howard says he plans to use Ro-Neet sprayed total coverage and bedded on all 46 acres of beets.—Ronald A. Jones agriculturist.
Morrill Men Share Chores, Tools

Hired hands are hard to come by so two Morrill, Neb., sugarbeet growers pitch in to help each other with their spring and fall chores. Elmer Cook and Tom Tomoi found this relationship very satisfactory, with an occasional “flipping of a coin” to see who uses machinery first.

At harvest time, their wives, Virginia Cook and Ruth Tomoi, join in by driving trucks under the beet loader. The men, however, drive to the receiving station.

A third neighbor, Art Grasmick, rounds out the “friendly trio” by lending a helping hand from time to time—and receiving one. His wife, Betty, is no stranger to a truck wheel. She hauls beets to the station.

But, it is Elmer and Tom who really swap equipment back and forth. Last fall each was ready to use the Weston topper and 3-row John Deere puller at the same time. Elmer laughs when he recalls winning the coin toss and letting Tom go to work first.

Elmer farms 335 acres with 106 acres in sugarbeets. The remainder is in alfalfa, corn and beans. He says he plans to feed cattle. Tom feeds 300 head of cattle. He farms a total of 320 acres—133 acres in beets and the remainder in corn and beans.

Both farmers report “real good” weed control. They incorporated Ro-Neet this year, with 10-34-0 liquid fertilizer acting as a carrier for the chemical. Their treatment was in a 7-inch band.

Art, in partnership with his brother, Harvey, put in chemical and seed at the same time, with a side-dressing of fertilizer. Tom reports he put on a lay-by of Eptam, after thinning the first part of June.

By working together, the three men needed only seven laborers each this year. It was a case of good chemical weed control combined with helping each other when the time was right.

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Herman Strauch's Fields Clean, With Good Weed Control

Herman Strauch, Platteville, Colo., says he has some of the cleanest sugarbeet fields he has ever had, with stands better than the farm average.

Through fumigation for nematode control, post-emergence weed control, mechanical in-the-row cultivation and electronic thinning, Herman says his labor costs were the lowest ever, with workers receiving the highest hourly earnings he has ever paid.—Carl Luft, agriculturist.
Keith Murray, Powell, Wyo., had a problem with his tractor crushing sugar beet leaves and causing clogged irrigation ditches. He took "old junk" pieces of steel and wrapped them around his three tractor wheels, as shown above. He is explaining to George Pfau, agriculturist, how the shields, hanging from the front fork and cultivator bar, lift the leaves. L. to R.

Pastor Pat Escudero, right, and members of the Apostolic Assembly of Faith in Christ Church of Denver, Colo., in above photo, worked sugar beet fields this year to raise money for their church. The members of the group worked 79 acres for the Knaus Brothers and 45 acres for Alex and Henry Lobo both in the Longmont district. They also worked 20 acres for Earl Templeton, Brighton district.
A Strange Place for Vegetables

A truck gardener at Wray, Colo., has found a novel use for an area, under sprinkler irrigation towers, that could not be used for growing sugar beets. William P. "Bill" Snedeker, Yuma, Colo., was raising vegetables on a piece of ground 90 feet by 150 feet at Wray, when dry weather just about ran him out of the gardening business.

Then Duard Fix and his brother, Dwain, came up with the idea of raising a garden under the circular sprinkler that comes to rest alongside a small dirt road through their fields. Duard is Bill's son-in-law. He and his brother have 360 acres of sugar beets. The balance of their 1,600 acres has wheat, milo and corn.

Sugar has Its Place In a Reducing Diet

Leaving the table satisfied is a trump card in the diet game. A sure way to obtain this satisfaction is to eat a small, but leisurely, dessert.

Sugar has its place in a reducing diet, for it offers more than energy. Thanks to sugar, you can leave the table feeling contented.

How to fit sugar into your diet is explained in a commonsense diet counsel from Sugar Information. Booklets, called "The Sweetest Diet Ever Told," are available by writing the editor of "Through The Leaves" or Sugar Information, 52 Wall St., New York, N.Y. 10005.

Seven aids to staying slim, described in this booklet, are:

1. Cut down on extra fats and oils—a pat of butter is 70 calories; a teaspoon of sugar, just 18.
2. Eat meals in courses: Clear soup, light entree and light dessert.
3. Think light, not heavy, by eating low calorie meals.
4. Know the approximate calories in foods you like best. This way you can go heavier on one dish and lighter on another.
5. "It won't matter just this once" can be the ruin of a diet. Low calorie snacks (as described in the booklet) will help hold down the hunger.
6. Eat desserts. This often helps cut that second helping. Sugar is an excellent appetite appeasement.
7. Don't get discouraged if you fail to lose as quickly as you might. Consistent weight loss, no matter how little each week, will help get rid of those pounds.

Before Bill started his garden, the area between the 16 towers was wasteland. It was impossible to harvest sugar beets there. Now there are peas, onions, parsnips, beans, cucumbers, tomatoes, sweet corn and cabbage growing—watered twice, when the hydraulic sprinkler starts off and when it finishes its circle.

A Crusting Problem

Bill says he is having the same trouble with his garden as do many sugar beet growers—getting the plants through the crust after rain. "I put the vegetables down deep for moisture at my old garden location," he explains. "Here it looks like the best bet is shallower planting."

The vegetables from the garden go to Duard and Dwain, Bill's own family and a daughter in Yuma. In addition, he furnishes vegetables to a nursing home in Yuma. Last year he froze hundreds of packages of his vegetables for the home.

William P. "Bill" Snedeker runs a small Roto-Tiller through his beans and peas at Wray, Colo., as Wendell Wagner, agriculturist, watches. Bill is raising vegetables between 16 sprinkler irrigation towers on his son-in-law's place. His son-in-law, Duard Fix, gave him the idea because there was insufficient room to grow sugar beets there. There is no shortage of water between the towers.
Lovell Pipeline Waters Desert

A Lovell, Wyo., farmer is making the desert bloom, through use of a pipeline to a flood-type irrigation system utilizing syphon tubes. Harris Asay and his six sons used almost 300 pounds of welding rod on 4,250 feet of pipe during the winter of 1966-67. Their first crop year, the ground soaked up the water. This year less water is being used.

The Asays take the water from Lovell Canal, through ¼-mile of settling ditch before it is pumped onto the land. Excess water flows back into the canal from the ditch.

Two turbine pumps furnish 4,600 gallons of water per minute. It takes about 3,000 gallons per minute to irrigate the high ground. When the new system is fully operative, there will be 300 acres of irrigated alfalfa, with rotation crops to follow.

In the “High Ten”

Harris farms more than 500 acres, with about 50 acres in sugarbeets. He has been in the “High Ten” for several years. The rotation after beets is grain to corn, alfalfa and irrigated pasture.

The Asay’s keep 150 cows and fatten their yearlings to 1,100 pounds. His livestock feed includes beet pulp, barley and silage.

Through the family working together this year, only four outside workers were required in the sugarbeets.

Proper Controls Lessen Root Maggot Damage

Carl Hirsch, Platteville, Colo., says recovery of his sugarbeet stand was remarkable this year after a 75 percent infestation of root maggot. The maggots reduced his beet stand by only 10 percent.

He had a clean, uniform stand, after fumigation for control of nematode, using Pyramin plus for post-emergence weed control, aerial application of Di-Syston granules for root maggot and complete machine thinning.

To aid the early growth of the crop, Carl applied 225 pounds of ammonium nitrate between the rows, ditched and followed with two irrigations within a five-day period.
Nebraskans Win Fight Against Nematode

Two sugarbeet growers in the Bridgeport, Neb., area, discovered use of modern chemicals is a big factor in their anticipated increased yields this year.

They are Bob Sterkel, with 156 acres of sugarbeets, and Connie Lapaseotes, raising 126 acres of beets.

A nematode infested, 16-acre field of Bob's was producing only 13 to 14 tons per acre while other beet fields were averaging 20 to 22 tons. He says this year he used Telone on the nematodes with "unbelievable results." Not only is the field producing healthier beets, but the beets are more resistant to rhizoctonia, which had also been a problem in the field.

Bob also broadcast Ro-Neet and reports almost complete weed control—resulting in a saving on labor.

Connie says he will continue to use Telone on fields with nematode problems. He treated 64½ acres this year and anticipates increased yields.

London Paper Reports On Cyclamate Danger

Fresh evidence of danger to health by use of the controversial chemical sweetener cyclamate was reported recently in the "London Sunday Times."

The English publication noted that a team of Austrian doctors and research workers disclosed, after a four-month test, that even small doses of the artificial sweetener cause serious damage to the liver of guinea pigs. The doctors also report that persons with heart, circulatory and liver complaints "appear to be particularly endangered by the uncontrolled use of cyclamate."

The report also hints at possible effects similar to those alleged to have been caused by the drug thalidomide. The "London Sunday Times" says in West Germany the Ministry of Health has been asked to conduct an inquiry into cyclamate sweeteners to prevent "another catastrophe."

Telone made a great difference in nematode control on these two Bridgeport, Neb. farms. Above, Bob Sterkel stands by as young Gregory Sterkel compares a treated beet, left, with an untreated one. Below, Connie Lapaseotes, his son, Nick, and Jim Davidson, agriculturist, hold large beets from Connie's treated field. (Bridgeport News-Blade photos)
Family Keeps Busy On and Off Farm

Dean Olander, farming in the Kirkland area northeast of Longmont, has made consistent efforts to improve his net returns. Having grown up on farms in Boulder County, Dean understands the many problems involved in modern farming and works hard to properly manage his farm.

Since purchasing this farm in 1963, rotations have included sugarbeets, pinto beans, barley, corn and alfalfa. In addition, cattle breeding and feeding operations have helped considerably to make a balanced program.

Mrs. Olander (Dorothy), besides keeping busy with the many home chores, teaches kindergarten in the nearby Mead school.

In the remaining "spare time," the family, which includes Kenneth 13, Randy 11, and Andrea 9, is very active in church and 4-H Club activities.—Roy Drage, agriculturist

Clean Eaton Fields Attract Laborers

Herman and Larry Kaiser, Eaton, tried Ro-Neet on their 104 acres of sugarbeets this year and found laborers were eager to work their relatively weed-free fields.

And, as a result, they are considering use of Ro-Neet as an over-all application, at the two pound rate, before planting beets next year.

Herman and Larry incorporated Tillam and Avadex combinations for several years. But they were not satisfied, because of the retarding effect it had on beets in the farm's sandy soil.

After a couple of years of using no chemical weed control, they decided to try Ro-Neet, because of the good results they were having incorporating Eptam on their beans.

From their experience with weed chemicals on these sandy soils, they decided to use 13 ounces of actual material—or the equivalent of .8 pound Ro-Neet per acre, in a seven inch band incorporated one-inch deep. Very little stunting was noticed with this rate.

—Jim Robertson, agriculturist
New “Hands” Used For Thinning Beets

Mechanical, electronic and dependable new "hands" came to the beet fields of Nebraska this year in the electrically charged probes of the John Deere thinner. This rugged machine operated in many fields, under varying conditions, with virtually no time out for adjustment or repair.

The machine was acceptable to growers, doing as good or better work than the average hand labor, providing there were no weeds in the field.

Certain conditions must be met before this thinner will accurately and successfully thin beets. These are as follows:

1. A weed-free row is required. This can be accomplished by using any one of several proven systems of chemical weed control. Land that is too light and sandy for pre-emergence herbicides can be treated with post-emergence Pyramin plus.

Reduced Seeding Rate

2. The Nebraska rate should be reduced to accurately plant six or less seeds per foot, depending on local conditions.

3. Care should be taken to provide a level, uniform seedbed that will lend itself to machine work—essentially the same as required in normal, good farming procedures.

One advantage of the John Deere machine is that its use does not increase the length of skips in the row, as did the old and conventional mechanical thinning systems.—L. H. Henderson, Nebraska resident manager

American Beet Yield Twice That of USSR

American sugarbeet growers do twice as good a job as their Russian counterparts, the U. S. Department of Agriculture reports in the July issue of "Agricultural Situation."

United States yield of 17.5 tons per harvested acre in 1966 was 8.8 tons greater than the USSR outturn of 8.7 tons. USDA said 1966 was a "bumper year for the Soviet Union and a good year for the United States."

Russia, the world's largest beet sugar producer, had a 1966 crop of 81 million tons of beets. America, the next largest producer, had 20 million tons that year. Sugar content was not reported in the article.

American yields exceeded Russian output per acre for most crops compared in the USDA publication. In vegetables, yields were about equal. The USSR excelled in sunflower seed and cotton.

American farms were also more efficient than Russian farms in labor use in 1966, the article said. One of every 14 workers in the United States was employed in agriculture, compared with one of every three workers in the Soviet Union.
Kids in Racers Learn Safe Driving Skills

Kids with a yen for automobile racing are having a ball at Fort Morgan, Colo., where the Valley Quarter-Midget Race Association gives them sessions on safe driving, while letting them compete in carefully supervised races.

There are about 19 quarter-midget cars in the Fort Morgan association. They are owned by the parents. But, it is the children, aged 5 through 14, who do the racing. Races begin about the end of May and last until the first of October.

The track is a 20th of a mile and races go 8, 15 and 25 laps. Time trials are run to keep the races competitive—younger and slower racers do not have to race the older and faster drivers.

A good example of the beginning racers is Robin Weber, 5, son of Mr. and Mrs. F. Edward Weber, west of Fort Morgan. (Ed Weber grows 31 acres of sugarbeets.) This is Robin's first year in racing and already he has done one lap at 20 mph. His brothers, Rick, 10, and Scot, 9, have won a number of trophies in association racing.

There are three sugarbeet growers with sons in the Fort Morgan association races. Others, in addition to Ed, are John Rusch and Don Rehkop.

It's a lot of fun for everyone concerned, keeping the kids busy and giving the fathers a change from everyday chores.

Grab Roll Cleaner Built by Montanan

Milton Hein, west of Billings, Mont., got tired of carrying loads of mud to the beet receiving stations at harvest time. So, he built his own grab roll cleaner.

He had a welder make scrolls on the roll and made a spring loaded chute and frame. The springs let the larger rocks drop with mud, dirt and trash. The cleaner operates from the power takeoff, with no special motor required.

Milton has been raising sugarbeets since 1948. He rotates his crop with corn, pea grain and hay. In addition, the Montana farmer runs a cow-calf operation, with plans for expanding his cow herd.

He bales his pea straw like hay and puts up corn silage. He feeds his beet tops in the fall.
GW Expands Scientific Activity; Adds 5 Men to Longmont Staff

Five new researchers have joined Great Western, as the Company continues to expand its scientific activities.

They are all working at the Agricultural Experiment Station, Longmont, Colo., as part of that research center's program of seeking better methods and techniques to make beet-growing more profitable with greater ease of production. These men are:

Lyle Fagala, assistant agronomist working in weed control, is from Gage, Okla. He received his bachelor's degree in biology from Oklahoma Panhandle State College. He and his wife, Carolyn, are getting settled in Longmont.

Jack Kelly, a native of Bowbells, N. D., is an agronomy graduate of North Dakota State University. He is an assistant agronomist in charge of handling experimental plots. He and his wife, Darla, live in Longmont.

Dr. Akio Suzuki joined the Station in June as a plant breeder. Dr. Suzuki, born and raised in Japan, has a bachelor's degree from Hokkaido University. He spent 2½ years working at the National Institute of Genetics at Mishima, before coming to this country.

He has a PhD from North Carolina State University, where he studied genetics, with a minor in statistics. His research work was in heredity and breeding in tobacco.

Dr. Suzuki will work on the Company's plant breeding team with special emphasis on statistics. He and his wife, Mieko, and two-year-old son, Michi, live at Longmont.

Dr. Jimmy Widner came to Longmont as a plant breeder in July. A native New Mexican, Jimmy was reared and educated in the Clovis area. He has a B.S. degree in agronomy from New Mexico State University.

He wrote his PhD thesis, on plant breeding problems in wheat, at North Dakota State University, Fargo.

Dr. Widner has broad knowledge in plant breeding and Western agriculture. He and his wife, Elaine, are living in Longmont.

Dr. Y. Mok Yun joined the staff of the Station in December as entomologist. Born and raised in Korea, he came to the U.S. 10 years ago to attend college.

He holds a B.S. in horticulture from Washington State University and a B.S. in entomology from Oregon State. He has a PhD in entomology from Michigan State University. His graduate work was on control of cereal insects.

Dr. Yun's research for Great Western involves sugarbeet root maggot and flea beetle larva control. He also will be studying control of nematodes in sugarbeets. Dr. Yun, his wife, Mooncha, and infant daughter, Helen, live in Longmont.

**IMPROVING IRISH STEW**

Make a good Irish Lamb Stew better. A bit of sugar (about 1/4 teaspoon per serving) added at the beginning of the cooking time does not cause sweetness at the end. Instead, sugar's function is to bring out and blend the different flavors of meat, vegetables, seasonings, and white sauce that make the stew.
Harvest time is just around the corner, with the trucking of beets to receiving stations a vital part of the operation. Here, Mrs. Don Rehkop, southwest of Fort Morgan, Colo., warms up her truck with son Mike, 8, and daughter, Tammy, 6, kibitzing. R. to L. Every year, Ann Rehkop hauls her husband's beets to the dump at Maudru.
Through The Leaves

THE GREAT WESTERN SUGAR COMPANY
Serving Progressive Growers in Colorado, Nebraska, Kansas, Montana, Wyoming and Texas
GW’s PLATFORM

In recent speeches before groups of beet growers and other community leaders, GW President Robert R. Owen described some of the Company’s goals.

The Great Western platform, the executive said, “is based largely on three R’s — review, research and returns.” Following are excerpts from Mr. Owen’s remarks which we thought might be of particular interest to our readers.

“While Great Western is proud of our past, we are not satisfied to rest on laurels. We are reviewing results achieved over 63 years of corporate existence to ascertain which accomplishments to build on, which techniques we can improve, which practices we should discard and which new avenues of operations are open to us.

“We have greatly stepped up our research budget and research staff as part of this program. We are dedicated to try, to the fullest extent possible, to improve financial returns for the beet growers who contract with us, for our employees and for our stockholders.

“We are proud of what our seed breeders have accomplished, but, more importantly, we are confident they will continue to improve the seed varieties. Better seed means many things—more sugar content, more tons of beets to the acre and more resistance to disease. Better seed also means higher juice purity, better keeping quality of beets in the piles and higher extraction of sugar. All of these mean more money for growers and the Company.”
Labor Needs Are Changing

By FRED G. HOLMES, Vice President, Agricultural Administration

The major labor problems of today may soon be a thing of the past. Herbicides were used effectively in all of our areas last year and more acreage than ever before will be treated in 1969. Electronic thinners are past the experimental stage and for the first time will be in commercial use this spring. It now appears that several hundred will be sold in our areas. Their use should make a sizable reduction in the number of workers needed for thinning and thereby enable the available workers to thin the balance of the acreage in a much more timely manner.

Even though electronic thinner and herbicides use will reduce the number of workers needed in the future, we will again this spring continue our efforts to obtain an adequate number of workers for growers. Present recruiting prospects indicate that we might expect about as many total workers in our areas as last year for sugarbeet work.

Colorado's Health Department recently established a new set of regulations governing labor housing, and other Rocky Mountain states may establish similar regulations in the future. The Colorado regulations are not as stringent as they appear to be. If a grower has a reasonably well constructed labor house, cleaned for occupancy; provides potable drinking water; and does not allow the house to become overcrowded, most of the requirements will be met. Electric lights and water under pressure are preferable but are not required in existing dwellings.

We all know that good housing does much to attract the better workers. A little time and money spent in improving the appearance of a labor house will certainly pay dividends. (Note examples of good labor housing below and on Pages 16-17.)

More and more of the field worker families are remaining in their southland home areas until the school year has been finished. As a result, many families do not arrive in the beet areas for work until the latter part of May. We commend these families for their desire to obtain better educations for their children. But, their lateness in arrival in our areas has, in some instances, worked a hardship on our growers.

Growers with electronic thinners no longer need to wait for late labor. Other growers, by utilizing weed chemicals and mechanical tools available, can keep their crop under control until workers are available. The normal number of early labor arrivals, plus the local workers, should now be able to perform the early operations needed. By the time the late arrivals appear, a sufficient number of workers should be on hand to perform the balance of the thinning and whatever weeding of the crop is needed.

Mr. and Mrs. George Vega, Lubbock, Tex., farm workers liked this 5-room house they were furnished by James Kram, beet grower at Ballantine, Mont. Running water, television, electric stove and refrigerator were features of the furnished house. Below, they are loading their car and truck before leaving to work farms in Wisconsin and return to Montana in April.
Thousands of sugarbeet growers turned out last summer to watch electric thinners in operation. Enthusiasm and hope for elimination of hand labor were key words describing their reactions.

Great Western held four demonstrations on its own, in addition to others in its growing areas. These programs were at Greeley, Colo., Sept. 9; Holyoke, Colo., Sept. 11; Scottsbluff, Neb., Sept. 13; and Goodland, Kans., Sept. 16. The Company also cooperated in demonstrations at Billings, Mont., and Lovell, Wyo.

From comments made by growers, it appears a big step has been taken toward reduction of hand labor, through use of chemical weed control and the electronic thinning machine.

In all demonstrations, the seedbed was carefully prepared in advance, beet drills were equipped with guidance equipment to effect exact tracking of subsequent field operations, single germ seed was precision planted and weed control chemicals were used.

The John Deere machine, in combinations of 2-row units and a maximum of 8 rows, operates hydraulically. A variable length knife responds to a signal probe touching the plant that is to be left, with the knife sweeping across the row ahead of it.

The 4- or 6-row Eversman is adjustable for various spacings of plants, as well as for their size, by merely turning knobs. When a beet plant cuts an electric eye beam of light, knives behind the photo cell are activated by air from an air compressor.

The German Monomat is a probe type machine with 4- or 6-row units available. When the probe touches a plant, an electric circuit is closed and one or more knives, in a revolving type thinner head, are removed from the row.

Careful advance preparation of the field is required in use of all electronic thinners. They are unable as yet to tell the difference between beets and clods or weeds.
Richard W. Blake, executive vice president, National Sugarbeet Growers Federation, Greeley; Harry Clark, Eaton; Tom J. Nix, Eaton, and Neeland Siebring, Greeley, discuss a John Deere Electronic thinner at Greeley. L. to R. On the tractor is a John Deere engineer.

These 5 growers were part of the good turnout at Scottsbluff, Neb., thinning demonstrations. Top photo, L. to R., are: Albert Abel, Scottsbluff, and Leonard and Harold Abel, both from Gering. Bottom photo, L. to R.: Jacob J. Huck, Bayard, and Rinard Goss, Mitchell.

Windsor area growers Harry Stromberger, Charles Scheid and Jacob Stromberger examine an Everman Selectronic thinner at the Greeley demonstrations. L. to R.

These growers are attending demonstrations in the company field adjoining the Kemp factory at Goodland, Kans. They are Rick Rogers, Homer Philbrick, Norval Evert and Glenn Burk. L. to R.
Miss Montana Knows the Ropes Of Goat Tying and Beet Topping

“"I Want To Be A Cowboy's Sweetheart" was the song Miss Montana 1968 sang during the "Miss America Pageant" last fall in Atlantic City, N.J.

Karen Sue Frank, 21, Park City, Mont., as "Miss Montana" ought to be everyone's sweetheart, for she comes from a sweet farming background.

The talented daughter of Jake Frank came by her sweetness naturally, hoeing and harvesting sugar beets with her father.

Karen, winner of the Miss Eastern Montana College title, went on to win state-wide honors and represented Montana on its float in the Rose Bowl Parade New Year's Day, 1968.

To Appear at High Ten

She keeps on the go attending special events as her state's "Queen." Her plans include an appearance at the High Ten Awards Banquet in Billings in January, where she will play the guitar and yodel as she did at Atlantic City.

In addition to helping her father with hoeing and harvesting sugar beets, Karen pitches in to help stack hay and irrigate. She came in handy in 1968 when Jake had knee surgery. Mrs. Frank reports Jake is now off his crutches.

Winning the Miss Montana title put a slight crimp in Karen's rodeo activities. She competed regularly in high school rodeos and later in college barrel racing and goat tying contests. As a 4-H Club member, Karen has been training her own horses for some time. But, there will be no trophies until she gives up her state title this June.

Meanwhile, her favorite goat (the one she practices on for tying events at rodeos) is beginning to think it is a calf. Her mother says the goat is running with the cattle.

Karen's other talents are keeping her busy. Not only is she a '"ridin' ropin' gal who knows how to wield brandin' iron," the lovely cowgirl, dances, sews, cooks and likes politics. Helping elect her father Stillwater County Democratic legislator in 1957 was her first political chore.

She is studying at Eastern in Billings to become an elementary teacher.
GW Hosts Growers, Community Leaders

Outstanding beet growers and grower association officials were among the 500 community leaders and Great Western management personnel attending special “President’s Dinners” at Sterling and Greeley, Colo. Host was Robert R. Owen, Company president.

The meetings follow the form of past dinners held in connection with annual GW directors’ tours of factories. The new series of dinners, however, provide for a broader representation of community leaders to meet with GW officials.

Guests at Sterling came from that factory area as well as from the Fort Morgan and Ovid districts, whose sugarbeet areas extend into the southwestern and central parts of Nebraska.

Representation at the Greeley function came from the Greeley, Eaton, Loveland, Longmont and Brighton districts.

A third dinner is scheduled for Feb. 5 at Scottsbluff, Nebraska.

GW sugar was in the foreground at the “President’s Dinners,” held by Great Western, as in this outpouring of sweetness. Dorothy Allison, Ramada Inn waitress, pours sugar into the cup of Robert R. Owen, Company president, at the dinner in Greeley. (Jim Briggs, “Greeley Tribune” photo)

Four sugarbeet growers were honored during the GW dinner meeting for community leaders and Company management Nov. 25 at Greeley, Colo. Above, L. to R., are C. J. Herbst, Kuner grower for 50 years; Denzel Hartshorn, Longmont grower for 50 years; Lee E. Butler, Company southern district manager; Robert R. Owen, GW president; Gus Nelson, Buda grower for 50 years; and Herman Strauch, Platteville, grower since he had a 4-H Club crop at age of nine. Last fall Mr. Herbst was given the honor of pushing the button starting the campaign at Greeley factory.

GW sugar was in the foreground at the “President's Dinners,” held by Great Western, as in this outpouring of sweetness. Dorothy Allison, Ramada Inn waitress, pours sugar into the cup of Robert R. Owen, Company president, at the dinner in Greeley. (Jim Briggs, “Greeley Tribune” photo)

These four beet growers are shown at the GW dinner Dec. 11 at Sterling. Given special recognition were, L. to R.: Francis Jenik, Sedgwick; John Sanger, Ovid; Lawrence Giacomini, Sterling; and Conrad Schaffer, Weldona.
That sugarbeets are an important crop in the Brighton-Fort Lupton, Colo., area is nowhere more evident than at the banks.

Two bankers who speak out strongly in favor of sugarbeets are Arthur A. Satterlee, senior vice president, The First Bank of Brighton, and William H. Burns, president, Fort Lupton State Bank.

As Mr. Satterlee puts it, "Sugarbeets are an important part of the area's economy. They provide the growers a diversification of crops. Being a contract crop, sugarbeets offer a minimum of risk from market changes."

"Also, the growers and we, as bankers, rely a great deal on the beet checks, which also benefit the community as a whole. Beets are grown locally and processed locally into the finished product, thereby providing added employment and additional income that help the entire area."

According to Mr. Burns, his "feeling on growing sugarbeets has improved very much in the last two years. If the farmers will tend their farms and use fumigation when needed, then our bank is interested in financing. Nematode control is expensive, but pays off in the end results."

"We are encouraging our farmers to increase their beet acreage and thus make more efficient use of their equipment."

"With increased production and the better price they are receiving for the product, we feel much better in financing the beet grower. The income from sugarbeets means a great deal to our bank and community. We look for much more acreage of sugarbeets in our area for 1969."

As Mr. Satterlee points out, "While beet is a high cost crop to produce, if a good yield is obtained they are profitable. Therefore, we think it is imperative that the grower take advantage of the latest developments as to weed and disease control, fertilizers and mechanical devices for thinning, harvesting, etc."
As with any other housewife, Florine Bauer uses her husband's sugarbeet check to buy groceries, including you-know-what. Her husband, Alvin, had 52 acres of sugarbeets at Berthoud, Colo. Their son, Harvey, 16, had an acre of beets as a 4-H Club project. Florine works part time at KLOV Radio in Loveland.

Proper Beet Top Use Means Cash in Pocket

By JAMES F. GONYOU, Billings Assistant Manager

Making the most of the sugarbeet crop is still essential to the high dollar return needed by farmers today. This definitely includes proper handling and conservation of the tops as a supplemental crop.

This was made evident once again during the recent harvest. Growers who made the most of their tops harvested them in a separate operation and moved them away from the row.

Some growers wait until the tops have wilted. Then they field chop and put them in a silo. One advantage of this method is that the feed can all be stored at a central spot and will simplify livestock feeding later.

Other growers prefer to field cure the tops before hauling them to the feed yard. This makes it possible to work the ground in the fall and get a head start for next year's cropping operation. Other growers pasture tops in the field, which may work out well enough in an open winter.

Many growers realize $60 to $90 per acre through proper handling and feeding of tops. There is no reason why other growers can't do the same.

Farmers by nature are conservationists. Planning now for beet top conservation and use will insure an even better return on the next crop of beets.

Expert Seeks Ways To Up Beet Profits

To make the sugarbeet crop more profitable for growers and Great Western is a primary goal of Dr. Charles F. Davan, Jr., recently appointed Company business development manager. He is also investigating new business opportunities which would complement GW activities. Davan is analyzing major production factors involved in growing sugarbeets more economically. This includes proper use of pesticides and equipment. A pilot program to provide technological assistance to Company growers is now being developed by the economist.

He came to Great Western from International Minerals and Chemical Corp. where he was director of economic market research and development. From 1959 to 1963 he was with the Economic Research Service, USDA, at Ft. Collins, Colo.

Author of many economic articles, Davan received his Ph.D. degree from Purdue University. He is a commander in the U. S. Naval Reserve.

Serving his country in various advisory capacities, Davan has been an economic consultant to President Johnson's Food and Fiber Commission and to the Food and Agriculture Organization in Rome. He presently is one of four economic advisers to the U. S. Secretary of Commerce, studying the type of institute best able to deal with foodstuffs on a worldwide basis.

Sugarbeets, Corn and Cattle Make Good Combination

Audrey Crawford, Lexington, Neb., combines modern cultural practices with good management to run a profitable farming and livestock operation.

His 175 acres of beets in 1968 averaged 20 tons to the acre and his tops brought in additional income as cattle feed.

He combines his sugarbeet production with 2,000 acres of corn and year-round cattle feeding.

This makes a good living for Audrey, his family and his six, year-round employees.

—Roeland Elliston, agriculturist.
New, Expanded Research Plans
Aimed at Increasing Beet Profit

By R. K. OLDEMEYER
Director, Agricultural Research

New and expanded research programs of The Great Western Sugar Co. are aimed at discovering better ways of making sugarbeet growing more profitable for both the grower and Company alike. The Company is entering a new and exciting period of research aimed at not only increasing sugarbeet yields per acre, but at the production of other crops that fit into its operation.

The Agricultural Experiment Station, Longmont, Colo., is already noted for its research work. This research has helped continuously to improve the sugarbeet industry since 1910.

Major Aims

There are five major aims under the Company's new agricultural research program, as follows:

1) Increase sugar production per acre at a reduced cost;
2) Expand the proportion of the present growing area which is planted to sugarbeets;
3) Reduce sugar losses from beets during storage and/or increase the economical length of storage;
4) Expand the agricultural interests to new geographic areas; and
5) Investigate the growing of new crops in the established beet-growing areas.

With new goals has come some reorganization of departments and personnel within the Company. All research and development, both agricultural and chemical, is headed by the vice president in charge of research. This officer, Whitney Newton II, has two departments — the agricultural, whose director is also manager of the Experiment Station, and the chemical.

Purpose of this centralization is to provide greater efficiency, in use of personnel and equipment, in the various fields of investigation. For example, the new chemical laboratory and office building, to be located at Longmont, will provide laboratory work room for all chemical and microbiological analyses required by the agricultural research personnel of the Experiment Station. This building is in the final stages of planning. Personnel of the chemical research department will be available for consultation, and development programs can be planned jointly.

The Company's vigorous research effort for developing sugarbeet varieties resistant to disease and producing the maximum amount of sugar has already begun to pay off.

Chemical weed control in sugar beets is constantly being improved. Research in the control of sugarbeet root maggot and the beetle larvae, with acceptable chemicals, is progressing well. A program for developing better nematode control fumigation is underway. A man is now being sought to head our nematode control research.

The Experiment Station is preparing for a stepped-up disease control program — including selection of varieties for Rhizoctonia resistance and improved chemical spraying for Cercospora leaf spot control.

Plant Growth Studies

Another expanded program involves the use of chemicals to modify beet plant growth — to make it grow larger and/or have higher sugar content and purity.

Research toward reducing storage losses in beet piles is being expanded. A plant physiologist is being recruited to direct this program.

Research is being continued in the development of the Company's agricultural interests in new geographic areas. For some projects it is direct work while in others it is advisory. For example, in southeast Missouri, seed for variety trials and for selection is supplied by Great Western while most of the actual work is being done by University of
This photo shows screening inbred lines of sugar beets in the Experiment Station greenhouse for herbicide susceptibility. The left line is apparently susceptible to Ro-Neet while the right line is resistant.

Missouri research personnel.

Station staff members are deeply involved in the sweet stalk corn enterprise as initiated by Northland Research Co., in Minnesota and North Dakota. It has been found that corn, if no kernels develop on the ears, has a high sugar content in its stalk. As with sugar beets, fertilization, maturity and variety have profound influences on the yield of sugar. Investigations conducted by Northland Research, under Company supervision, is directed toward controlling the variables influencing sugar production in corn.

The expanding research program has caused a strain on facilities at the Experiment Station. This will be solved upon construction of the new chemical laboratory building and the new, automated sugar and tare lab.

As there will be additional laboratory space in the new building, the move will enable us to remodel laboratory rooms at the Experiment Station into much needed office space.

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Nematode Fumigation Increases Beet Yields

Fumigation for nematode control continues to show excellent results in the Brighton factory area. John Sadahiro, Ward Station, Fort Lupton, Colo., has learned the value of fumigation, after he stopped growing beets five years ago when nematodes cut his production to below a profitable margin.

A 12-row check strip encouraged John and his landowners, Rollie and Ralph Vincent, to fumigate five acres of a 15-acre field. The comparative results, as pictured, are not unusual in this area. But, the results were a pleasant surprise to the Sadahiros and the Vincents.

Photo No. 1, with John Sadahiro, shows a load of six rows of untreated beets in a 12-foot beet box.

The large load, Photo No. 2, with John, right, and his sister and brother-in-law, Mr. and Mrs. Harry Shimamoto, is the result of fumigating six rows, of equal length, with 20 gallons of Telone per acre. The beets are in a 15-foot box.

The treated beets yielded 21.5 tons per acre while untreated beets yielded only 8.7 tons per acre. —Carl Luft, agriculturist
Researchers Study Weed Control With Herbicides, Crop Rotation

By A. D. DOTZENKO and M. OZKAN

(EDITOR’S NOTE: Dr. Dotzenko is professor of agronomy and Mr. Ozkan, graduate research assistant, in the Agronomy Section, Colorado Agricultural Experiment Station, Fort Collins, Colo.)

The Agronomy Research Center, near Fort Collins, has been carrying out a study on herbicides or combinations of herbicides that will give the best weed control in sugarbeets grown in rotation with corn, barley and beans.

Important factors in the choice of chemical and cultural methods are the weed types and amounts of weed seed present in the soil.

A good estimation of the weed seed potentials of soils can be obtained with proper soil sampling and by use of the proper germination techniques.

Objectives of the Center’s study are: (1) to find an inexpensive method of counting and classifying weed seeds in the soil; (2) determining the effect of nitrogen fertilizer on weed seed populations; and, (3) comparing mechanical tillage practices with chemical methods in controlling weed seed populations.

High Level Fertility

All crops used, in the Center’s experimental area, were given a uniformly high level of phosphate fertility. Water was uniformly and adequately applied.

Herbicides and rates applied are those currently recommended by the Experimental Station. Pre-emergence treatment was applied in liquid form in a 7-inch band and incorporated into the soil.

Random soil samples were collected from the experimental area after the field had been plowed in November, 1967. These were put together, crushed and divided into four samples containing about 400 grams each. After a 5-week period, the weeds in each 2-inch deep sample were counted and identified as to species.

Studies show the crop sequence in which sugarbeets follow beans has lower weed seed populations than when beets follow barley or corn.

When high nitrogen levels were used, high populations of weed seed were present according to the studies. And, chemical weed control markedly reduced the weeds, when compared to mechanical cultivation treatments.

Weed seed populations are dependent on four factors: (1) accumulation of seeds in the soil, as a result of crop rotation practices; (2) addition of seeds by means of water, wind, animals and machinery; (3) planting weed seed with contaminated crop seed; and, (4) attrition of seeds in the soil through action of animals, insects and biological decay.

The average weed seedling count is presented in Table 1, where the effect of crop sequence is shown. Kochia, pigweed, grasses, lambsquarter and total weeds all had lower populations in the bean-beet sequence. The effect of sequence on Kochia count is of particular importance. This weed is one of the more competitive weeds in sugarbeet fields. Since beans are a late-planted, early maturing crop, most of the early weed species can be eliminated prior to seeding time. The late maturing crops of weeds can be held to a minimum due to the short growing period necessary for beans, followed by proper field preparation. These two factors would tend to reduce the weed seed potential for following crops.

Effects of Nitrogen

Table 2 shows that time and rate of nitrogen application had a pronounced affect on the weed seed. F-1 is when low nitrogen application was made; F-2 was low nitrogen plus residual; and, F-3 was high nitrogen use.

In all three sequences the high nitrogen application had high weed count. The lowest counts were found where sugarbeets followed beans; the highest where they followed corn.

Table 3 shows the difference in weed seed populations with chemical weed control and nonchemical control. Where chemical weed control measures were used, weed seed averaged about 50 percent less than where only mechanical practices were used.

Chemically treated plots still showed rather high weed seed populations for Kochia — possibly because sugarbeets and Kochia are related plants belonging to the same family.
**TABLE 1. Weed Seedling Numbers per 400 Grams of Soil.**

<table>
<thead>
<tr>
<th>Crop Sequence</th>
<th>Kochia</th>
<th>Pigweed</th>
<th>Grasses</th>
<th>Lambs-quarter</th>
<th>Total Weeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Barley-Beets</td>
<td>42.9</td>
<td>31.6</td>
<td>14.5</td>
<td>18.2</td>
<td>109.4</td>
</tr>
<tr>
<td>B Corn-Beets</td>
<td>66.6</td>
<td>43.6</td>
<td>48.2</td>
<td>6.6</td>
<td>165.7</td>
</tr>
<tr>
<td>C Beans-Beets</td>
<td>15.7</td>
<td>7.1</td>
<td>11.4</td>
<td>8.6</td>
<td>44.2</td>
</tr>
</tbody>
</table>

**TABLE 2. Weed Seedling Numbers per 400 Grams of Soil.**

<table>
<thead>
<tr>
<th>Nitrogen Fertilizer</th>
<th>Kochia</th>
<th>Pigweed</th>
<th>Grasses</th>
<th>Lambs-quarter</th>
<th>Total Weeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-1</td>
<td>20.7</td>
<td>13.5</td>
<td>13.4</td>
<td>6.0</td>
<td>54.3</td>
</tr>
<tr>
<td>F-2</td>
<td>38.2</td>
<td>20.9</td>
<td>19.4</td>
<td>10.2</td>
<td>89.8</td>
</tr>
<tr>
<td>F-3</td>
<td>66.3</td>
<td>47.9</td>
<td>41.3</td>
<td>17.2</td>
<td>175.2</td>
</tr>
</tbody>
</table>

**TABLE 3. Weed Seedling Numbers per 400 Grams of Soil.**

<table>
<thead>
<tr>
<th>Weed Control</th>
<th>Kochia</th>
<th>Pigweed</th>
<th>Grasses</th>
<th>Lambs-quarter</th>
<th>Total Weeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>W-1—Chemical</td>
<td>32.8</td>
<td>19.3</td>
<td>13.8</td>
<td>7.9</td>
<td>74.3</td>
</tr>
<tr>
<td>W-2—Nonchemical</td>
<td>50.7</td>
<td>35.6</td>
<td>35.6</td>
<td>14.4</td>
<td>138.7</td>
</tr>
</tbody>
</table>

It is difficult to develop an herbicide or combination of herbicides that will differentiate between them. However, a combination of crop sequence (sugarbeets following beans) and herbicides can effectively give good control of this weed.

Selective herbicides are providing sugarbeet growers with increasingly effective weed control in beets and in all other crops.

The best method of reducing weed seed populations can be accomplished by a combination of the proper crop sequence and the use of chemical herbicides.

Growers can no longer afford to use the sugarbeet crop as a means of cleaning up fields, while permitting weeds to grow and reproduce seed in adjacent areas.

These and other studies are part of the sugarbeet industry’s concerted effort to completely mechanize the growing of sugarbeets. Complex problems associated with field labor, including its high cost and increasing shortage, have increased the urgency of finding the best combination of production systems which control weeds and still maintain high yields and quality.

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**Colorado Grower Gets Help With Crop During Illness**

Bert Crona of the Longmont, Colo., Harney district, found he had many good friends when serious illness hampered his sugarbeet growing in 1968. His neighbors helped plant his 48 acres of sugarbeets in one day and took turns helping cultivate and irrigate the beets through the summer.

Come harvest time, Vern Hamilton and Dick Purcell organized a harvest crew and Great Western kept the Harney station open on a Sunday.

Area farmers came to the harvest with 10 harvesters and two topsavers. Farmers and their wives drove 25 to 30 trucks in moving 104 loads of beets, between 8:30 a.m. and 3:30 p.m.

Upon completion of the harvest, the Grant family, as landowners, hosted a dinner for the group at Del Camino Cafe.

—Ralph R. Price, agriculturist
Stricken Grower Praises People
In Area as ‘Best in the World’

By AL AUGER
Company Agriculturist

Farmers from the Greeley, Eaton, Ault, Pierce and Nunn areas converged on the Stoke Morita farm Sunday, Oct. 20, to help their stricken friend harvest his sugarbeets.

Stoke, who suffered a severe heart attack in September, died the Wednesday following harvest, after being witness to the unselfishness of his fellow men.

During the harvest, there were 13, 2-row harvesters, 3 top savers or windrowers and approximately 55 trucks on the job. The Company and the Hiway Cafe of Pierce furnished coffee and donuts to truck drivers at Stage Station, kept open on the holiday to receive Stoke’s beets.

Onion Growers Inc., served coffee and donuts to the men in the field. The Pierce Handy Helpers 4-H Club donated cookies. The Farmers National Bank furnished the meal, prepared by the Green and White Cafe. Soft drinks were donated by the cafe and Johnson’s Grocery. Pierce Motor Service donated gas and Pink’s Conoco furnished a tank truck.

Equipment for the harvest was donated by Yukio and Bill Sameshima, Frank and Bob Akahoshi, Blain Souther, Max Hill, Richard Wolf, Harold and Albert Tateyama, Carl and Albert Kinoshita, Stoke, Leo Simpson, Jack Derr, J. R. Hasbrouck and Clarence Achziger among others.

The crew running the receiving station included Ed Ehn, Bob Gill, Freda Tolle and Tatsuo Matsuda. Don Redman, Eaton manager and agriculturists Duane McDonald, Jim Robertson, Dale Tormey, and Lynn Pitcher, assistant manager, all turned out to help.

The harvest, which began at 8 a.m., was completed by 5 p.m., with 1,036 tons of beets hauled from 54 acres. Tim Weigand, bank president, delivered the last load of beets.

The previous week, many of those helping Stoke were among the friends and neighbors harvesting 68 acres of beets for Melvin Hickman who was laid up.

(EDITOR’S NOTE:) At Stoke’s request, Al Auger spent an evening at his home gathering information on the harvest. As Al was writing this article the next morning, Stoke passed away. Before he died he summed it up this way, “The people in this area must be the best in the world.”

Injured Grower Gets Aid
With Harvest of Beets

Henry Schmick, north of Bayard, Neb., has a large box of load receipts to show how well his sugarbeet crop was delivered by his friends.

Henry was seriously injured in an auto accident before harvest and was confined to the hospital for several weeks.

Sunday, Oct. 20, approximately 85 friends and neighbors harvested 42 acres of his beets. Equipment used included 7 toppers, 9 lifters, loaders and about 35 trucks. The beets were hauled to Craft receiving station, kept open especially for the occasion.

Wives and daughters of the workers served a large meal to the workers at lunchtime and had enough left over for a mid-afternoon snack upon completion of the harvest.
Neighbors Come to Aid Grower

By S. J. DAVIDSON,
Bayard Agriculturist

John Panas, Bridgeport, Neb., found out how many true friends he had when he was unable to harvest his sugarbeet crop in October.

John was stricken with a heart disorder early in the month and it didn’t take long for his neighbors and Bridgeport businessmen to come to his aid, once the word got around.

Work began at 9:30 a.m., Oct. 20, with 5 multi-row pullers, 4 multi-row toppers and 4 single-row harvesters working John’s 25-acre contract. The men also harvested a contract for Louie Panas’ 8-acre 4-H project.

DeGraw receiving station was opened on Sunday to take John’s beets. Harvest was completed by 2:30 p.m. During lunch break the men’s wives and daughters turned out a delicious feast.

It took 1 1/2 hours for the hungry men to enjoy the meal, which featured many Greek dishes.

John expressed thanks to all who came to his aid.
Good Housing Attracts Workers

By Cal Smith, charge of labor plans for GW growers

In recent speeches, in sugarbeet growing areas of Colorado, Robert R. Owen, Great Western's president, has commented on the important subject of good housing for migrant labor. These remarks, also pertinent to the other GW beet areas, are as follows:

"First, I wish to commend those growers who have done an outstanding job in providing adequate living quarters for workers. It was comforting to learn that a Colorado Department of Health official, at a hearing last summer, praised the quality of the average housing in the northeastern portion of the state. Keep up the good work.

"Second, I want you to know that I get just as upset as you growers when metropolitan papers play up the few cases of inferior housing in an area, and people are led to believe that these exceptions are typical.

"But let's face it. The exceptions will always cause trouble. And we must concentrate on getting these up to standard if we are to avoid the unfair publicity we have been getting in some quarters.

"Aside from the unfavorable publicity angle, however, and speaking in positive terms, let me say what you all know—we cannot recruit the large numbers of workers needed for all crops in our area if housing conditions and earnings prospects are not superior to those in other areas which compete for the same labor supply.

"But, of course, the best cure of all for the labor headache is to find the way to grow beets without having to use any migratory workers. This is the answer we seek, and, with continued help from growers, we will find it, just as together we found the way many years ago to lick hand-topping and hand-loading of beets."

Examples of good housing in various locations accompany this article.

George Lens, Gilcrest station, Colo., furnishes his labor with this modern 5-bedroom house.

The Chuck Riedl farm at Basin, Wyo., supplies its labor with this modern 4-bedroom house.

This modern mobile home housed the Juan Martinez family, Harlingen, Tex., shown out front on Glen Schmitt's farm, southeast of Powell, Wyo. A second trailer housed others in the family of 7 workers and one child.

Jim Smith, Company agriculturist, right, talks to Mr. and Mrs. Manuel Gonzales, from Red Oak, Tex., about the labor house furnished them by William Knaub, Laurel station, Mont.

Some examples of good housing are found in Nebraska. Upper left is a 3-bedroom by Albert Abel, Scottsbluff; furnished by G. J. Becker. House at Gering. Lower left is a 2-bedroom by Albert Abel, Scottsbluff; furnished by G. J. Becker. House at Mitchell. All houses contain water, cooking facilities, and beds. Examples of good housing in various locations accompany this article.

"Who needs a palace for six weeks while we work," Mrs. Socorro Chavez, left, comments on the clean and adequate labor house furnished by Ray Nelson, at Erie, Colo. She was frying chicken for the Leopold Rodriguez family, from Mission, Tex. Daughter-in-law Estella Rodriguez and baby Jane are at the right.

Ed Lenhardt, Billings, Mont., shows his children, Shawna and Sharlene, the house where he and their mother spent their honeymoon and lived for a number of years. Ed uses it for labor housing.

Shady trees kept Carl Dalton's modern labor house cool at Eaton, Colo.

Frank Zumbrink, Longmont manager, examines William Bell's labor listing sheet in front of the farmer's Erie, Colo., 4-room labor house, L. to R.
Mr. and Mrs. Jake Schlotthauer, and their son, Greg, 2, Morrill, Neb., stand in front of their friends and neighbors who helped harvest Jake's beets following his back operation. ("Business Farmer" photo)

Nebraska Neighbors Aid Friend

Mr. and Mrs. Jake Schlotthauer, of the Dutch Flats area north of Morrill, Neb., discovered the value of friends at harvest time when Jake was laid up following a back operation. A total of 77 friends and neighbors showed up to help Jake harvest his 52 acres of sugar beets.

Work began at 8 a.m. on a Sunday, with Wesley Ruf, Jerry Schlotthauer, Paul Kirkpatrick, Gib Reising and Victor Deines hand topping at the row ends. Men furnishing toppers and top savers were Duane Thomas, Dale Flock, Arthur Deines, Karl Schmidt, Victor Bauer and Harry Bartel. Those with beet pullers were Don Weinmaster, Ray Weinman, Albert Hoffman, Ron Stuckert, Johnny Dillman and Henry Bartel.

Men moving railroad cars and operating the beet receiving station were George Shaw, Marion Gould, Henry Sommer, Mike Deines, Jim Deines, Herman Dobrinski and the weigher, Doloris Dobrinski. Remainder of the men drove the trucks, unloaded dirt and did other jobs.

Harvest lasted until 4:30 p.m. It required 23 railroad cars to hold Jake's beets. His average was 18 tons per acre with 17 percent sugar.

Serving the lunch of ham sandwiches, baked beans, pie, cake and soda pop were Mrs. Arthur Deines, Mrs. Fred Triplett, Mrs. Henry Bartel, Mrs. Esther Schlotthauer, Mrs. Jake Schlotthauer and Patty Deines. The lunch was donated by the Nebraska Non-Stock Cooperative Beet Growers Association.

—Carl Luft, agriculturist.

Platteville Grower Says 1968 Beet Crop "Best"

Herman Strauch, Platteville, Colo., reports the "cleanest, most uniform stand and highest average yield in his years of growing beets." His 40 acres yielded 22 tons to the acre in 1968.

Herman's program consisted of planting six seeds per foot, post-emergence herbicide control, with Pyramin plus on a four-inch band, electronic thinning, Eptam lay-by herbicide and a weeding requiring 3-1/3 hours of hand labor per acre, which may not have been necessary.

Herman fumigated a 7-acre field that was out of beets eight years because of severe nematode. His yield per acre on this field, with 20 gallons of Telone per acre, was double that for the untreated check strip. "It's the way I intend to go in the future," he explains.

—Tim Dollerschell, agriculturist.
Gering Grower Fires Rare Guns

When collectors start talking about guns around Gering, Neb., the name of Cliff Dietrich invariably enters the conversation. Cliff farms and feeds livestock on 2,000 acres. Stanley Brozee, a retired Great Westerner from the Mitchell, Neb., factory, owns 960 acres of this land.

On the subject of gun collecting, Cliff chuckles when he explains that it all started 22 years ago when he married his lovely wife, Nadine. Today it is a family hobby with the three children, Roxanne, 16, Natalie, 13, and Oak, 9, all firing Winchesters, Colts and Kentucky rifles — and outshooting mom. Cliff says the youngsters do very well firing his 357 magnums — quite a trick for Oak.

Cliff says his favorites are the Winchester rifles, although he likes to fire the cap and ball Kentucky muzzle loaders. "I watch Daniel Boone on television but I can't run and load like he does," he adds with a smile. "Those old Kentuckies, with rifled barrels," are extremely accurate.

Cliff uses black powder on his old guns — and he fires them all, including a percussion flintlock pistol dating to the 1700's.

One of his proudest possessions is an 1860 Henry. This is the rifle the pioneers claimed they could "load on Sunday and fire all week". It has engraved metal work with an enclosed magazine tube. One of his 1866 Winchesters has part of the stock worn off where it was carried on the saddle by a renegade Indian.

Cliff started farming 20 years ago, about eight miles southwest of Gering, for Stanley Brozee. He had 97 acres of sugarbeets in 1968 in addition to beans, corn, alfalfa, oats and wheat. He keeps 100 head of stock cows on pasture. The calves are wintered and sold in the spring. Cliff chops his sugarbeet tops for feed.

Beet Growers Lend Hand To Neighbor in Distress

It was another example of the true American spirit when 40 neighbors turned out to harvest the sugarbeet crop on the Fritzler farm at Kersey, Colo. "It nearly makes me cry," said Mrs. Fritzler, widow of Rhenhoit Fritzler, when she saw the response to a request from a neighboring grower, Allen Peters.

There were 13 harvesters and 22 trucks on hand for an all-day Sunday harvesting bee. The Fritzler farm's 35 acres of beets were delivered to the Kuner dump. Neighboring women served the workers lunch.

Farmers furnishing harvesters and other equipment were: Raymond Foos, Carl Hergenreder, Allen Peters and Jim Schaub, all of Hardin; Paul Yago, Wilfred Dreher, Herman Peterson, Tak Murata, Frank Rothe, Leland Snyder and Duane Schlage, all of Kuner; and John Cloud and K. and D. Ogata, of Kersey.

—Sven Johansen, agriculturist

Cliff Dietrich and his wife, Nadine, show off part of their gun collection. Cliff holds an 1830 Kentucky rifle while Nadine has a cap and ball Tryon pistol and a Henry Deringer. A rare flintlock pistol is on the pillow with a Volcanic arms six-shot hand gun. The Winchesters on the wall are short barrel trapper's models with another 1830 Kentucky squirrel rifle.
Wyoming Growers Market Tops
By Feeding Prize Angus Herd

Murraymere Farms at Powell, Wyo., is a father and son farming partnership that markets all of its home-grown feed through its cattle — with sugarbeet tops playing an important role.

Bruce Murray and his son, Keith, grow 230 acres of sugarbeets, 100 acres of feed barley, 100 acres of alfalfa hay and 140 acres of silage corn. In addition, some land is in irrigated pasture and unfarmed river bottom is used as summer pasture.

The cattle herd consists of 30 commercial cows and 150 registered cows and heifers which are being bred. The Murrays are maintaining their cow herd and producing registered bulls.

The herd is run on beet tops, barley stubble, hay and corn fields from October to February. These beet tops are the spillage left after harvest, since bulk of the tops is put whole in the silo on top of corn ensilage. After February, the cattle are fed beet top silage, corn silage and alfalfa hay until June, when they are divided into breeding herds and put on pasture.

The irrigated pastures are intentionally overstocked and the cows fed supplemental feed consisting of beet top silage, corn silage and ground alfalfa. Calves in these pastures also require creep feeding. Thus far, these calves have not weaned out as heavy as the grass fed calves, but seem to catch up by yearling weight time.

The Murraymere Farms herd has been production tested with assistance of the Extension Service since 1957. It was enrolled in the Angus Herd Improvement program in 1965 and has been officially classified for the last four years.

U of W Graduates

Bruce and Keith are both graduates of the University of Wyoming agriculture school. They proudly point out they are the only father and son who both hold Wyoming State Future Farmers of America Farmers Degrees.

They are firm believers in using good farming methods in raising sugarbeets. They used Pre-Beta on one-half of their acreage and Ro-Neet on the other half, with good weed control reported almost everywhere. They planted six seeds to the foot, used a Blackwelder thinner and close-cultivated.

The Murrays have a good working relationship with a family of laborers who first came to work for them five years ago. Through use of chemicals, proper planting and close cultivation, field labor is kept to a minimum.

Bruce Murray, prominent Powell, Wyo., sugarbeet grower, shows off his Angus herd site at the entrance to Murraymere Farms, operated by Bruce and his son, Keith.
Young Farmer Group Hosts New Zealander

The North Weld (County) Young Farmers (NWYF) organization, composed largely of Eaton, Colo., sugarbeet growers, had a New Zealand youth staying with them last season.

The visitor was Robin Dugdale, a member of the Young Farmers Club (YFC) in Waimate, N.Z. Robin, 27, operates his own 338-acre farm, raises 1,000 Romney ewes and grows 30 to 40 acres of wheat each year. Crawler tractors are used for cultivation because of the hilly terrain or "steep downs", as he calls it.

Robin says no commercial beets for sugar are grown in New Zealand, only mangel and fodder beets. He says mangel yields the heaviest tonnage while the fodder is higher in feed value. Beets for sugar production have been grown experimentally.

The New Zealand YFC was formed in 1927. The NWYF organization is a young' n by comparison — it was formed about two years ago.

Panel Picked Robin

Members in the New Zealand group range in age from 14 to 30, the NWYF group ranges from 14 to 35. Robin was chosen by a special panel in Wellington, New Zealand's capital. This panel pays his travel to this country while the Future Farmers of America pay his in-state travel.

North Weld Young Farmers are proud of this young farmer exchange program.

Sugarbeet growers in the NWYF include: Harry Simpson, president; Darryl Woods, vice president; Bob Backstrom, secretary; Ron Pappenheim, treasurer; and Al Miller, Doug Ruff, Danny Siglinger, John Leffler, Richard Foose, Dennis Isakson, Dave Gustafson, Neal Fletcher, Ken Felte, Tom Swanson, Les Peterson, Harvey Gozzens, Charles Leffler, Lee Anderson, Charles Eckhardt, Ray Weinmeister, Gene Miller, Lanny Harsh, George Tateyama, Bob Dorsey, Gary Anderson, Ellis Isakson, Lynn Ottoson and Gary Simpson.

Cliff Deibel is a non-beet grower member. Their advisor is Richard Welton, Eaton vo-ag instructor and FFA advisor.

—Allan E. Auger, agriculturist
Scottsbluff Man Delivers Beets 50 Years, Started at Mitchell

There is something about sugarbeet harvest time that gets into one's blood after a person has participated for several years. This was part of Mrs. George Sommer's explanation of why her husband spends his vacations hauling beets to the Scottsbluff, Neb., dump.

In a story in the Scottsbluff "Daily Star-Herald", Mrs. Sommers was quoted as saying, "George always drove the trucks."

George, who works for the State Highway Department, celebrated his 50th year of hauling beets last fall. The Scottsbluff man hauls beets for his son, Harold. George used to farm himself until a back injury forced him to quit 16 years ago.

He credits fertilizer, chemicals, better equipment and improved farming practices with doubling the tons of beets harvested per acre, since he started hauling beets at the age of 16. He says he got about 10 to 11 tons to the acre in the 1920's.

The active, 66-year-old retired farmer well recalls the day when he took his first load of beets to a Mitchell factory dump, from his father's farm in the Dutch Flats community northwest of Mitchell.

In 1918, a team of horses pulled his wagon-load of beets to the dump. They had to be scooped on and off the wagon by hand and there was no piler at the station. The beets had to be thrown seven or eight feet to the top of the pile.

In those days, George, his father and brother were lucky to take two trips per day to the dump. Today, he makes the four-mile trip to Scottsbluff 10 times daily in a high-powered truck. Where four-horse teams could pull between five and six tons, his truck hauls about six and one-half tons of beets.

As George told "Star-Herald" reporter Con Marshall, "I really enjoy hauling. I know everybody around the dump and get a kick out of seeing them each year. It's a lot more fun than laying around home during my vacation. Besides, it helps my son out."

Coloradans Ordering New Electric Thinner

John C. Mollendor and his son, Robert report their machine-thinned beets yield more beets per row on their truck at harvest time than did fields that were hand-thinned.

The Hudson Station, Brighton, Colo., father-son team are good progressive beet growers. They have about 64 acres of rented land and harvested 170 acres of sugarbeets in 1968. They averaged 17.7 tons per acre — in spite of a bad hail storm in August — and had 17.7 percent sugar. Their harvested stand was 102 beets per 100 feet of row.

The Mollendors used a Great Western owned Eversman Selectronic thinner on 165 acres of beets. They were favorably impressed and have placed an order for their own machine for the 1969 beet crop.

They planted six seeds per foot and after the electric-eye thinner went through, there was a stand of 126 beets per 100 feet of row. They say they are buying their own thinner because "it did just as good as hand labor and better, in some instances. Also it get our beets thinned more quickly. We figure the dollars we put out for hand labor will more than make the down payment on the machine". —R. H. Riddell, agriculturist.
FEEDERS FORUM

By K. D. KNAUS,
GW Farm Department Manager

1968 was another good year for the farmer-feeder. There may be some exceptions, but nearly 100% of the growers of feed crops who marketed them through livestock during 1968 made a substantial profit.

During the past year, the American consumer showed an ever growing appreciation for choice quality fed beef, lamb and Grade A milk. If the grower of sugarbeets and feed crops will take a good hard look at this fact, he will realize that herein lies his best friend.

There are still many opportunities for the average beet belt irrigation farmer to employ some type of livestock project, to increase his returns from the feedstuffs he produces. Over a period of years, the best system for most growers has been to buy and own enough light cattle to consume all the roughage produced on his farm. One grower's records show that, over the past 15 years of continuously following this practice, calves have averaged about $22 per head above the going market for feed crops.

Recently, as most farming units have been getting larger, many growers have gone to growing calves to fleshy feeder weights, to be sold to finishers. This practice is fine, if the price of fleshy feeders is good when the grower is ready to sell. A 32¢ per pound, 400-lb. calf can be reduced in cost to about $25.50, weighing 800 pounds, if the cost of the 400 pounds of gain is 19¢ per pound.

Cattle finishers are generally pleased with their experience with farm-grown feeders. The background built into these feeders, as they are grown from calves to fleshy feeders, complements the finishing phase. It shortens the time required for finishing, allows marketing of lighter-weight animals and produces high quality beef. This practice definitely affords an opportunity, in the years ahead, for the producer of farm-grown feeds.

More opportunities will likely exist for feeding light cattle to feed weights for other owners. This reduces the need for capital, to a large extent. Best returns will nearly always go to the farmer who feeds his feed crops at home.

* * * * *

It is most gratifying to note that several recent agricultural publications have printed favorable reports on the use of manure. It seems to be agreed that manure is a good fertilizer and that it is worth a little more credit than some experts have been giving it in past years.

Custom services for hauling and spreading manure are cutting costs of these operations in several areas. This is something farmers could consider, whether they are buying manure from commercial feed lots or using manure produced on their own farms. Hauling and spreading manure in large quantities is a big job. Big equipment fits best on big jobs.

We heartily welcome the return of a greater appreciation for the importance and value of manure as a fertilizer.

These calves are being fed a typical farm-grown ration at Windsor, Colo. This includes a balanced ration of alfalfa, corn silage, grain, dried beet pulp and supplement.
Elimination of Field Labor Aim Of Many GW Beet Growers

By R. F. CHINNOCK,
Agriculturist, Hemingford, Neb.

A more intensive mechanization and chemical program is required to make the sugarbeet crop easier and more economical to produce. This is growing more obvious as problems of obtaining and handling field labor grow more complex.

Progressive growers, in all Company areas, are working toward reduction and eventual elimination of field labor. Along these lines, work with chemicals and electronic thinners last spring, in the Hemingford-Alliance, Neb., area, gives an excellent idea of what is being done.

Beet growers in Box Butte County were impressed with the operation of John Deere and Eversman electronic thinners. The growers covered 3,886 acres with pre-emergence herbicides and 425 acres with post sprays. There were 1,337 acres mechanically thinned with generally good to excellent results.

Two Eversman electric eye thinners were used on 429 acres. Harold and Loren Zajic of Nida station used the machine on 81 acres. They have been using a Silver thinner for five years.

Prior to putting the Eversman in the field, the Silver was used once. No herbicides were applied as the field was fairly weed free—only some Kochia and lambsquarters were present. End result was a field with an average of about 120 plants per 100 feet of row. Labor bill for weeding averaged $11 per acre.

However, many of the weeds were too large at the time of spraying and escaped effects of the chemical. Following thinning, weeding labor was used at about $12 per acre.

Pre-plant herbicides and the electric eye thinner were a winning combination for Jesper Jensen, west of Berea. He used the injector method of applying Ro-Neet at planting time. It did an outstanding job of weed control. Cost of labor following the Eversman was $9 per acre—except on eight acres weeded by Mrs. Jensen.

P. F. Johnson and his son, Dale, had 165 acres of beets thinned by a Silver, followed by the Eversman to set the stand. Several groups of Texas labor were used. The Johnsons say results were so favorable they plan to use herbicides next year, along with an electronic thinner.

Both the John Deere and Eversman machines worked 180 acres of beets on Arthur Johnson’s farm near Berea. Many growers saw the machines in action.

The fields were incorporated with Pyramin and TD 282 at planting time. Seeding rates were six seeds per foot. Weed control was nearly perfect. However, severe storms reduced the stands in some places.

A guidance system was used for better incorporation and planting. This preliminary work proved its worth when the electronic thinners were used.

While running the John Deere over nearly 70 acres, Art did little guiding and con...
watch the thinner at work. He is sold on the herbicides and electronic thinning combination.

Other growers participating in this program are Wayne Clark, Berea; Jerry Schnell, Gene Schoeneman and John Bauer, Ginn; and the Nagaki brothers, West Alliance.

After observing results of electronic thinning, the following conclusions were reached:

1) A smooth and firm seedbed is important. A certain degree of bedding works best in this area.

2) Some type of guiding system should be used for all subsequent operations.

3) Precision planting should be used, with about six seeds per foot, in this particular area. Prior to use of electronic equipment, another possibility could be use of some other type of thinner on heavier stands.

4) Herbicides are a must for best performance.

In summary, electronic thinners have great potential.

Growers, the Company, machinery manufacturers, dealers and chemical companies are combining their efforts to further develop electronic thinners and herbicides.

Scale Lady Celebrates 32 Years on the Job

Tons and tons of sugarbeets have gone over the scale since Nellie LaRue, Fort Collins, Colo., began weighing for the Company. The past season at Harmony station was her 32nd.

Her husband, W. H. "Hess" LaRue, raised beets in the early 30's in Nebraska. She averages about 30 days weighing annually, from 7:30 a.m. until 5 p.m.

Most of the growers and truck drivers going over the scale know her by her first name, and she knows their names. And, with between 110 and 200 loads per day going past her window last fall, there were a lot of names for Nellie to remember.

Her memories go back many years, as far as agriculturists are concerned. Some of those she worked with include Harvey Riddell, now deceased, John Latta, Milt Nelson, I. L. "Red" Johnson, Bert Nelson, George Lapaseotes, Reid Dickerson and Don Redabaugh, present agriculturist for Harmony.

Red Johnson now is manager at Ovid, Colo., while George Lapaseotes is assistant to the district managers in the Denver office. Bert Nelson and Reid Dickerson are agriculturists at Loveland.

Sugarbeet growing and receiving have changed considerably since Nellie began weighing wagons. There were no pilers in those days. Beets had to be shoveled on to the pile. She says, "machinery certainly makes a difference."

Her working day is also shorter. She used to start earlier and stay later. She says she used to work about 45 days during harvest. Nellie says the days are still long. But she says she wouldn't miss her annual weighing-in chores for anything in the world.

Nellie LaRue leans out of her "sunnyside" window, at Harmony receiving station, to give Robert Weitzel, Fort Collins, Colo., his weight-receipt. Nellie celebrated 32 years weighing for the Company this fall. Robert had 54 acres of beets to weigh in at harvest time.
Sugarbeet Pellets in Sheep Feed Grow in Popularity in Colorado

A flaked grain ration, containing sugarbeet pellets and molasses, is growing in popularity with Colorado lamb feeders.

Developers of the ration were Ben Nix, Eaton sugarbeet grower and lamb feeder, Ken Pinkston, feed nutritionist for Agland, Inc., of Eaton, and Dr. Gordon Brown, lamb diseases expert from Fort Lupton. They noted that cattle feeders often reported cooked and flaked grains increased feedstuff efficiency up to 10 percent. As a result, they carried out successful tests with flaked grains in lamb finishing operations, working with the Potato Growers Cooperative at Eaton.

Ken and Ben report that beet pulp pellets and antibiotics are keys to the nutritionally balanced ration. "Lamb losses are held to a minimum with this feeding program," Ben explains. He has been feeding lambs for 35 years in Weld County.

Previously Ben says his lambs were panel or trough fed with a three percent death loss. Today he uses a self feeding program, the lambs "snack" continuously, never get hungry, and the death loss is cut to less than one percent. Labor costs are also cut through this self-feeding program.

There are 30 to 35 small farmer-feeders using the ration, supplied by Agland, in the Eaton, Longmont, Fort Collins area. As Ken explains, "this is truly a cooperative deal. Company sugarbeet growers come first when the pellets are distributed. They turn their allotment over to us and we then supply them with the mixed ration."

John Hendrickson, west of Eaton, is one of the beet growers using the ration. He used to feed about 600 cattle annually. Last year he put out 5,000 to 6,000 feeder lambs with good results.

"Many of us figured lamb feeding was done when the Company stopped distributing of wet pulp," John says. "Frankly, I never want to see any more wet pulp. More and more feeders are pasturing their lambs on the tops and using pellets in the feedlot ration with tremendous success."

Ben explains the success of the pellets thusly, "the lambs are grown on the range and grass. They need time to become accustomed to the high energy feed in the feedlot. We find the high beet pellet concentration helps facilitate the transition to this high energy feed."

There were five lots of lambs checked in the Colorado tests — a total of 3,456 head. Gains were calculated per weight, with no quick fill figured as gain. Average daily gain was 0.514 pounds; feed efficiency was 7.35 lbs. of feed for every pound of gain; and cost per pound gain, 19.96 cents.

Lambs came into the feedlot at 75-80 lbs., off range, off beet tops or off other roughage. They were vaccinated for eating disease and treated for internal parasites.
sites. For two days they received dry grass hay and clean water, salt and high phosphorous, all free choice.

Their starter ration, for 4-5 days, contains 60 percent beet pellets with flaked corn, grain sorghum, barley and oats, plus CO-OP Stress Crumbles and protein pellets. They have free choice alfalfa or other unground legume hay. They are provided with salt and high-phosphorous mineral, antibiotic and vitamin "A".

The intermediate ration, during the next 4-5 days, contains less CO-OP Stress Crumbles and 35 percent beet pulp pellets. Finishing ration to market weight, about 110 lbs., contains about 85 percent flaked grains with 15 percent beet pellets.

The grain in this ration is cooked at 210 degrees for 12 to 15 minutes. It is flaked and dried down to 14-15 percent moisture which makes for more efficient digestion of the starch. The pellets are cracked.

Lambs on this ration have been dressing out well, between 52 and 54 percent. As Ben Nix explains, "these lambs are very much in demand by the packers."

Sugarbeet Entries Win Awards at Fall Festival

Congratulations go to winners of six classes in the Crops Division, sugarbeet competitions, at the Fall Festival at Wiggins, Colo. Awards were presented by Great Western.

Results were as follows, in order of placing:

Six Beets under 3 lbs.: Ted Moeller, Ft. Morgan; Larry Graff, Wiggins; Rex Richardson, Wiggins; Clark Green, Wiggins.

Six Beets over 3 lbs.: Mel Green, Wiggins; Bob Brunzt, Wiggins; Billy Midcap, Ft. Morgan; Danny Busch, Wiggins.

Largest sugarbeet: Tim Perry, Weldona; Mel Green, Wiggins; Gary Brunzt, Wiggins.

Junior Class Beets under 3 lbs.: Gary Brunzt, Wiggins; Charles Kammerzell, Wiggins; Rex Richardson, Wiggins; Clark Green, Wiggins.

Junior Class Beets over 3 lbs.: Mel Green, Wiggins; Gary Brunzt, Wiggins; Billy Midcap, Ft. Morgan.

Junior Class Best Shaped Beet: Clark Green, Wiggins; Tim Perry, Weldona; Gary Brunzt, Wiggins.

—J. V. Ostermiller, Ft. Morgan manager.
Agricultural development engineer, Sherman Fox, who comes to the Company from Dole Pineapple in Hawaii, has been assigned to seek and develop new technologies for the production and handling of sugarbeets. He reports to Dr. Clarence Davan, Jr., manager of business development, in Denver.

In his 11 years with Dole, Fox worked out disease control measures for the pineapple crop and a system for pelletizing pineapple leaves into cattle feed. Earlier, he was on the engineering staff of the Ford tractor and implement division in Michigan. He was graduated from Michigan State University with a degree in agricultural engineering.

Allan Auger, Eaton, Colo., agronomist and Robert V. Gray, Imperial, Neb., agronomist, have been promoted to agricultural superintendents in northeastern Colorado and southwestern Nebraska.

Allan will live in North Platte, Neb., and will serve in the eastern half of the Ovid, Colo., district.

Bob will continue to live at Imperial and report to the Sterling, Colo., district. He will be in charge of agricultural operations extending from Holyoke, Colo., to Holdrege, Neb.

These men are graduates of Colorado State University. Bob's brother is assistant manager of the Kemp factory district.

The GW President's Dinner at Sterling, Colo., Dec. 11 offered Herbert Hughes, Imperial, Neb., and Dr. Clarence Davan, Denver, a chance for a reunion.

Herb, a sugarbeet grower, was formerly on the President's National Advisory Commission on Food & Fiber while Dr. Davan, company manager for business development, was an economic advisor to the commission.

Mr. and Mrs. John A. Reitz

John A. Reitz and his wife, Kathy, of Alliance, Neb., were named the Farmer-Rancher couple of the year at the Alliance Area Chamber of Commerce 5th annual Farmer-Rancher Appreciation Banquet.

C. A. Spurgin, Company agronomist, says John was also named Outstanding Young Farmer-Rancher for 1968-69 by the Alliance Jaycees. John has been raising sugarbeets since 1949 as a 4-H Club member. He was Nebraska State FFA Star Farmer in 1955 and took the FFA American Farmer Award in 1958. He started farming for himself in 1958 and purchased a 160-acre irrigated farm in 1964.

In addition to being a farm wife, Kathy raises and shows Siberian Huskies. This winter her two dogs took reserve champion and champion of her class respectively at the Denver Siberian Husky Club Show.

The home of Mr. and Mrs. James L. Henry, southeast of Longmont, Colo., was one of three featured by the First Congregational Church's annual Christmas Home Tour. Each of the house's 14 rooms was decorated with different Christmas themes.

Jim and Nadine Henry have grown sugarbeets and fed cattle for a number of years. Between farm chores they had used every spare moment to prepare for the tour. Jim even found an old-fashioned sleigh to display.

Keith Propst, Merino, Colo., was re-elected vice president of the Colorado Farm Bureau. He has been a beet grower for many years and has been active as president of the Sterling Local Beet Grower Association.
AROUND THE TERRITORY

These Mitchell factory growers and their wives are having a ball at Harold Dougherty's No-Ha­Loft barn during their bi-monthly barn dance. Members of the "Jills and Bills" above are, L. to R.: Dick and Donna Butcher, Morrill; Howard and Wanda Edwards, Lyman; Don and Jean Lind, Lyman; Phil and Geneva Johannes, Morrill; and Ike and Barbara Monroe, Morrill.

The entire Schedewitz family worked together to harvest 86 acres of 1968 beets, with an average of 23.58 tons to the acre, at Maxwell, Neb., according to Roeland Elliston, Company agriculturist.

Last harvest time John Schedewitz was on a two-row Farmhand harvester, following his son, John Jr., on their Wescoe top saver. Mrs. Schedewitz Sr. and Mrs. Schedewitz Jr. were both driving trucks.

Four agriculturists were transferred to other field assignments, Dale Schull was moved from Loveland to Eaton; Lloyd Crook from Scottsbluff to Sterling; Paul Blome from Lyman, in the Mitchell district, to Scottsbluff; and Loren Tweet from Chinook, in the Billings district, to Lyman.

Alec Schmidt, Lexington, Neb., has earned quite a title for himself. Alec has been connected with production of beets since he was "able to crawl down a row" with his parents. This, with his experience in raising 100 to 120 acres of beets annually, has earned him the title "Beet King of Dawson County" among his friends, according to Roeland Elliston, Company agriculturist.

Mr. and Mrs. Harold "Corky" Harrimon and Mr. and Mrs. Harry Schmidt, both from Scottsbluff, Neb., came home happy from Boulder, Colo., this fall after winning all bets, according to Charlie Reitschneider, Company agriculturist.

Charlie says they went to see the Colorado-Nebraska football game and returned "very happy" when Nebraska won.
In addition to starting a brand new year, "Through The Leaves" is starting a new column designed especially for our women readers. "Feminine Forum" will be a regular feature of this magazine.

This column will cover a wide variety of topics of interest to women. For example, one issue may contain recipes and the next may be devoted to household hints. From time to time, we will also use personal interviews with women who are connected in some way with the sugarbeet industry. Photographs of special interest will also be used.

Your suggestions to what you would like to see in this column are most welcome. We may also be able to use copies of your favorite sugar-containing recipes, household tips you would like to pass along, or you may even wish to try your hand at writing an article for use in this column.

"Feminine Forum" is your column. We hope you will enjoy it, and we sincerely hope you will send us your comments on material that appears in this and future issues.

A Mid-Winter Treat

The following "Strawberry Salad" recipe was sent in by Mrs. Nadine Dietrich, Gering, Neb., wife of sugarbeet grower Cliff Dietrich, and should help brighten some of those dreary days we have during the winter:

2 — 10 oz. packages frozen strawberries
1 — 6 oz. package Jello (strawberry)
2 cups boiling water
1 cup commercial sour cream
1 banana

Dissolve Jello in water. Break strawberries and add. It will set quickly. Spread half of Jello mixture in bottom of 9" x 9" pan. Arrange banana slices on top and press in gently. Cover all with sour cream. Add rest of jello mixture to form top layer. Let set several hours. To serve, cut in squares—place on lettuce leaf—garnish with dab of sour cream.

Meet "Feminine Forum" Columnist

By JOHN M. YOUNG,
Editor, "Through The Leaves"

Charlotte Crenshaw is a public relations representative for Great Western Sugar Co.

Before coming to the Company last August, Charlotte was national field coordinator for the women's auxiliaries of National Jewish Hospital at Denver.

Charlotte was born and raised in Loveland, Colo. She attended the University of Colorado in Boulder, under the Boettcher Foundation Scholarship Program.

After graduation, Charlotte moved to Denver where she became the coordinator of community relations for the Children's Hospital. While at Children's she served as editor of "The Bambino", the hospital newsletter.

RECIPIES AVAILABLE

Note: Folders of specially prepared recipes are available on request for use in 3" x 5" file boxes or for use in loose-leaf recipe books measuring approximately 7" x 11". Please send your request to: Charlotte Crenshaw, Great Western Sugar Co., Box 5300-T, Terminal Annex, Denver, Colorado 80201. Please use the same address for comments concerning this column, and for material you would like to see used in "Feminine Forum".
Heart Tingling Aroma of the Soil

(EDITOR’S NOTE: This "Letter to the Editor" appeared in the Sterling, Colo., "Journal-Advocate". It was written by Debbie Schneider, a senior at Iliff High School. She is the daughter of Ford Station beet grower Herman Schneider.)

EDITOR: To me, one of the true smells of autumn is the smell of a red truck loaded with sugar beets. It is an odor that can be felt in your heart, an odor of soil and glory, for the death of a sugar beet is glorious in that it gives off sweetness as it dies.

The smell recalls days when, blistered, sunburned and thirsty you stood with a hoe in your hands and the earth beneath your feet, and moved along the rows of new green leaves. You were their God. You decided who would live and who must die to make room for the living.

You can remember the hard knot in your stomach when you heard the roar of hail in the clouds hovering like vultures above you. You recall the voice of the priest, loud in the quiet of the church praying, “For adequate moisture and proper weather conditions, assuring good crops and a bountiful harvest,” and the people responding, “We beseech Thee, hear us.” They are not just responding properly, for being mainly farmers, they have come to know that the fate of their crops and their lives rests ultimately with God.

And you remember the tiny needles of worry that are always present. “Will we get irrigation water this week? How will we get along if something happens to the crop?” A farm child learns early that “this year is sure to be good,” or that “next year is sure to be better,” for a farmer exists on hope.

So now the beets are being harvested and loaded into train cars for their final journey. All the farmer has to worry about now is the weather, machinery breakdowns, the amount of tare on his beets, the number of cars allotted to his area, and how many loads of beets he can dump each day. Often rows of trucks, lined up waiting to dump their loads, are etched against the rising sun. The lives of everyone are centered around getting those beets out of the ground.

Finally the task is accomplished and the farmer can relax, wait for his beet check and begin planning for next year. The sugar works in the body of anyone who cares to buy it, but it is in the blood and heart and soul of the farmer who grew the beets that produced it.

Debbie Schneider

Good food was the order of the day when John Panas' neighbors helped harvest his beets at Bridgeport, Neb., following his illness. Above, holding the wide variety of dishes they furnished the hungry men, are L. to R., Standing, Helen Panas, Lee Karubus, Rhonda Barker, Alma Vassos, Edna Hessier and Sophia Lazarus; Kneeling, Betty Smith, Jenny Karubus, Chris Lapaseotes, Bonnie Barker, Agnes Walker, Wanda Walker and Angie Darsaklis.
At home is where the sugarbeet check is first felt. Here Mrs. Bill McKay, Gill, Colo., receives her husband's 1968 initial payment for his 105 acres of beets. Bill has raised beets for about 10 years and his father, W. E. McKay, before him. (For more photos and stories on importance of sugarbeet checks to the community, see Pages 8-9).
Merry Christmas and Happy New Year
GUEST EDITORIAL

(EDITOR'S NOTE: This editorial is reprinted from the Longmont (Colo.) "Times-Call" of Oct. 1, 1970.)

Agriculture in the Greater St. Vrain Valley has always been an important, perhaps the most important, element in this community's economic pattern.

Last year, because of early snows, that foundation of economic stability was threatened, and thousands of dollars were lost when snow prevented area beet farmers from harvesting their crops on time.

This year, at least from immediate forecasts, it appears harvesting will take place on schedule.

Regional beet outlets, principally Great Western Sugar Co., are in the process of beginning the harvest season.

At a time when industry seems to be playing an ever important role in this area's growth, we feel it extremely important for those of us not directly connected with agriculture and, more specifically, area farmers play in Colorado economics.

The day may well come when Colorado, at least much of it, becomes too expensive for farming. It has happened in other areas. Fields once replete with greenery are now covered with residential subdivisions, or worse.

However, that day has not come here. We hope it never does.

As the hundreds of trucks carrying recently-harvested beets make their daily journey to area crop outlets, it seems almost appropriate to pull to the side of the road and watch with a touch of sentimentality a part of the life style that has ended in many parts of the country.

We hope that never happens here.

This area is blessed with a perfect "mix" of commerce, industry and agriculture. We hope it never changes.
Sugarbeets Entering New Era

Sugarbeet growing is about to enter a new era, according to a former president of The Mountain States Beet Growers Marketing Association of Colorado and Kansas—the raising of the crop from the seat of a tractor, without the need for field workers.

The new president puts it this way—"Eventually, mechanization will replace labor, sooner than many growers think."

A task force composed of members of the GW agricultural staff is undertaking a top-priority program to prove that all manual labor in beets can be eliminated in a few years. Many growers agree that accomplishment is close at hand.

Another Company task force, working with a few Colorado growers and others, is seeking with Government and migrant representatives to find mutually satisfactory solutions to housing, health service, and other problems.

The president of GW recently stated publicly that migrant labor is a "continuing, complex, and difficult problem, a problem in which many must share the responsibility—processors such as Great Western, growers, and various federal, state, and county agencies. It is the full intention of Great Western Sugar, with the full support of Great Western United, to share this responsibility in improving the opportunities of migrant workers."

At the same time, the chairman of GW United supported the GW statement. He said, "The migrant problem is acknowledged to be extremely pressing, and Great Western United accepts the responsibility for the immediate seeking of relevant and appropriate solutions."

In that connection, the GWU Foundation has made a substantial contribution, financially and manpower-wise, to a project aimed at resettling in adequate housing a group of workers who are leaving the migrant stream, training them for other work, and finding year-round employment for them in Colorado. Perhaps some of these workers, already experienced in agriculture, may be sought by growers as permanent hired hands to handle irrigating and other of the more technical and responsible jobs on the farm.

Last month, at a grower association's annual meeting, the GWU chairman said, "The time has come to face up to the migrant problem," and "there are lots of problems that may require some changes in practices." He concluded his remarks on this point by stating that "unless we act to seek progress, solutions"—which may be painful—"may be imposed on us by the Government."

Why all these statements and why all the activity? Simply because the migratory labor picture is changing rapidly, particularly in Colorado. Migrant laborers, it seems, are no longer satisfied to work under conditions as they have been. People who claim to represent them are raising all kinds of questions. New government agencies are entering the scene.

Field labor has become a headache, and more and more growers are agreeing with GW's president, who in an earlier issue of this magazine said, "The best cure of all is to find the way to grow beets without having to use any migratory workers."

But, whatever the eventual picture, the fact remains that many migratory workers will be needed in raising the 1971 sugarbeet crop, and it therefore behooves all of us—growers and GW agricultural staff alike—to make field laborers' work and their work conditions as easy and as acceptable as possible. Increased mechanical thinning and increased use of weedicides are but two of the contributions growers can make, and in so doing they will be helping themselves in learning to get along with less field labor.

None of this is to say that adverse articles in the press are wholly true or that they reflect the average situation with regard to migratory workers. We realize that many growers, as the wife of a leading beet producer recently wrote in a letter to a Denver editor, are "getting very sick of the lopsided articles...in regard to the condition of migrant farm laborers," and that lack of facts in these articles indicates that the writer "has not made a complete study of the farm picture, but has just taken a few choice observations so as to give the other 99% of the farmers a black eye."

The trouble is, however, that even if only as few as one percent of the growers are not treating their workers fairly or providing decent housing, the press tends to play up exceptions and uses headlines which too many uninformed readers believe are universally applicable—headlines such as "Migrants' Conditions Mis-
erable," and "Migrant Workers Treated Worse Than Slaves." These are actual headings that appeared in area news media after a Government-sponsored student survey, which admittedly covered only a few farms, was completed recently.

Therefore the other 99% of the growers must see to it that the flagrant exceptions are cleaned up. We must get our own house in order if we want to avoid being tainted by the one case in a hundred that seemingly is driving us crazy.

Minimum wages for sugarbeet workers, at a fair and reasonable level, are established by the U. S. Department of Agriculture. If a laborer believes he has not received at least the minimum rate for work performed by him, there are widely publicized procedures available to him for filing a wage claim. Each worker is entitled to draw his own wages. He must give written authority if another person—even the head of his household—is to receive his pay for him. Growers must keep accurate payment records, which are subject to Government audit.

You know this, the actual workers know this, and the Department of Agriculture knows this, but somehow the general public does not seem to know this. That must be why they accept as truth such unfounded statements, as in the Government-sponsored student report, that sugarbeet wages are only 57¢ an hour, when in fact they now average more than $2 an hour plus fringe benefits, as compared with $1.46 (Oct. 1, 1970) for all agricultural workers.

Although wages are not a problem as such, occasionally a dispute arises from misunderstanding. To avoid this, each grower should tell his workers, as most of them do, exactly what kind of field operation they are to perform, because of different wage rates applicable for different jobs. Are they to use their fingers or only a hoe in removing weeds or beets? Are they supposed to perform a weeding operation after thinning is completed?

Let us do everything in our power to be fair to workers. Let us make certain that all of our labor houses are clean and livable, as most of them are. Let there be a clear understanding with workers as to what the job and the pay will be. If 100% of the growers do all of these in 1971, then perhaps some of the outside criticism will abate and the transition to inevitable elimination of the need for migratory labor will be accomplished smoothly and without rancor.

(Continued from page 3)

New Managers Named At Lovell and Ovid

Two promotions and one retirement among the GW agricultural management staff have been announced by Robert R. Owen, Company president.

James F. Gonyou, agricultural manager at Ovid, Colo., was advanced to the same position at Lovell, Wyo. His replacement is M. Merle Riggs, who has been transferred from the Denver office where he was assistant to Fred G. Holmes, vice president, agricultural administration.

Charles R. "Chuck" Johnson retires after serving as agricultural manager at Lovell for 16 years. Before his assignment in Wyoming, Johnson was assistant to the southern district manager in Denver, assistant agricultural manager at Scottsbluff and Gering, Neb., and an agriculturist at Billings, Mont. He was with the Company 35 years.

Johnson earned bachelor and master degrees at Montana State College. He and Mrs. Johnson will retire to Estes Park, Colo.

Before moving to Ovid last year, Gonyou spent most of his 22-year GW career at Lovell and Billings, Mont. He is a Colorado State University graduate and the son of former GW factory manager, the late Edwin G. Gonyou of Loveland, Colo.

Riggs came to Denver last year with 12 years of service in the field at Fort Morgan, where he was assistant agricultural manager and agriculturist, and at Greeley, where he was agriculturist. He is a graduate of Colorado State University.

WORLD SUGAR USAGE AT NEW HIGH

World per capita consumption of sugar reached a new high in 1969-70, according to Lamborn & Co., prominent sugar brokers.

(Continued from page 3)
European Beet Producers Check Colorado Operations

Beet growers from eight Western European countries recently toured Northern Colorado sugar beet areas to get a first hand look at U.S. operations.

The visit was part of a nationwide tour by 35 delegates of the International Federation of Sugar Beet Producers (Confederation Internationale des Betteraviers Européens), headed by H. Cayre of Paris, France, Federation president.

Hosts for the Colorado tour were the Mountain States Beet Growers Marketing Association, Great Western, and the National Sugar Beet Growers Federation.

The Europeans inspected the beets and cattle feeding operations on Frank Barnes’ farm near Longmont, crop research facilities at the GW Longmont Experiment Station, livestock feeding at the Monfort Yards near Greeley, and beet receiving and tare sampling facilities at Brighton factory.

On the tour were men from France, West Germany, The Netherlands, Ireland, Italy, Spain, Austria and Switzerland.

Higher Beet Prices Seen as Possibility

Possible average returns to GW growers of between $16.50 and $17.00 per ton of beets for the 1970 crop and about $18.50 for the 1971 crop were foreseen by a Great Western official at a recent annual Colorado ASCS state-wide conference.

Robert J. Fisher, GW vice president, in charge of grower relations, told a group of several hundred state and county ASCS officials, bankers, USDA officials from Washington, D.C., growers and other farm and ranch representatives, that the then present strength in the refined sugar market and recent trends indicated a “substantial improvement in sugar-beet returns” over recent years.

Fisher said the GW initial payment for 1970 beets was made at the highest sugar price level in Company history and that only the below-average sugar content prevented the November payments from being at a record-high per-ton level. He stated further that the 1970 payments were far above those in 1969 when early snows and hard freezes “brought about a difficult cost and profit problem for growers and GW alike.” The possibility for 1971 returns was based on long-term average sugar content.

Harvest Conditions Better

He reported that harvesting conditions, while not the best this year, were much better than in 1969. Speaking on November 19, he said 95% of the 1970 crop, Company-wide, had been harvested, and that the only growers with any appreciable amount of beets still in the ground were in the eastern Colorado and Kemp area, where emergency measures were being taken to get them harvested as quickly as weather conditions permitted.

Fisher praised and thanked the state and county ASCS men for their “devoted service to all citizens, farmers, and the Department” and particularly for their “fairness and promptness in carrying out the Sugar Act programs in Colorado.”

Other speakers appearing at the 2-day meeting, whose theme was “Agriculture in the 70’s,” included Don Paarlberg, USDA Director of Agriculture Economics; William C. Gailbraith, USDA deputy under-secretary for congressional relations; and Dr. A. R. Chamberlain, president of Colorado State University.
Sequence Herbicide Application

By DR. E. F. SULLIVAN
Senior Agronomist, Longmont Experiment Station

What does sequence application mean? It means applying a pre-plant herbicide; followed by a post-emergence or a lay-by herbicide or both, with a time lapse between each application.

Chemicals cost money, but labor costs money also. Field labor requirements are considerably reduced when chemical and mechanical inputs are programmed with precision.

In time, planting to a final stand can augment, and in some instances replace, selective machine thinning. Here is what sequence herbicide application means to the beet grower:

Chemical weeding results show pre-plant herbicides are about 80% effective. Herbicide usage on sugarbeets has advanced from 30% in 1965 to about 75% of the total GW acreage in 1970. A few factory districts have complete coverage.

The goal is to have herbicides on every acre of beets by 1973. Blanket coverage will substantially reduce field labor requirements and increase beet yields through elimination of early weed competition. Weed reduction should also reduce factory processing problems.

Yearly Variation

Variation is inherent in biology. Chemical weeding results can be expected to vary somewhat year to year and from farm to farm. Variations relate to adverse weather, mainly moisture and seed bed conditions. Sequence herbicide applications reduce variation and promote reliability of results.

Experience indicates that pre-planting herbicide results seldom fall below 60 percentage points of the untreated. Detailed records show a usual range between 75-85 percentage points. Many troublesome weeds are completely controlled. Yet some weeds escape the chemical, both susceptible and tolerant species. Nevertheless, these escapees are sickened by pre-planting chemical exposure and are easily eliminated by a post-emergence herbicide. A lay-by herbicide can replace the post-emergence application if the field is weed-free at thinning time. Lay-by herbicides are particularly useful when a skimpy stand is expected, and to keep fields clean until harvest.

So, if late weeds are a problem, use a lay-by chemical.

Chemical weeding programmed for completeness is the system for the future, including 1971. Several years of tests show 90-95% effectiveness, high enough for expanded field use (Table 1). Crop yield and quality, and stand at harvest, remain unaffected or are enhanced when compared to results obtained from manual thinning and weeding where herbicide is not used.

Table 1. Average results from pre-planting and post-emergence herbicides applied in sequence on sugarbeets, 1968-70.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Dosage Active lb/A</th>
<th>Weed Control Retard</th>
<th>Beet Yield Stand</th>
<th>Root Yield</th>
<th>Before Thinning</th>
<th>At Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ro-Neet-2.25</td>
<td>2.25</td>
<td>5</td>
<td>88</td>
<td>19</td>
<td>106</td>
<td>107</td>
</tr>
<tr>
<td>Pyramin Plus (1968)</td>
<td>5</td>
<td>98</td>
<td>88</td>
<td>19</td>
<td>107</td>
<td>107</td>
</tr>
<tr>
<td>Ro-Neet-2.5</td>
<td>2.5</td>
<td>5</td>
<td>37</td>
<td>11</td>
<td>106</td>
<td>107</td>
</tr>
<tr>
<td>Betanal (1969)</td>
<td>1</td>
<td>98</td>
<td>27</td>
<td>11</td>
<td>107</td>
<td>107</td>
</tr>
<tr>
<td>CP-2223</td>
<td>1.5</td>
<td>90</td>
<td>21</td>
<td>10</td>
<td>102</td>
<td>107</td>
</tr>
<tr>
<td>Betanal (1970)</td>
<td>1.25</td>
<td>90</td>
<td>21</td>
<td>10</td>
<td>102</td>
<td>107</td>
</tr>
<tr>
<td>3 year avg.</td>
<td>92</td>
<td>22</td>
<td>97</td>
<td>11</td>
<td>114</td>
<td>116</td>
</tr>
</tbody>
</table>

TABLE 1. Average results from pre-planting and post-emergence herbicides applied in sequence on sugarbeets, 1968-70.

Certain herbicide dosages applied in sequence can be reduced when compared to dosages used singly. Broadcast pre-planting herbicides and sequence applications delay and may eliminate the need for cultivation. In many instances, hand labor and cultivation are less effective for weed control than sequence application. Field results prove that more weeds escape hand labor than escape chemical weeding and machine thinning.

Finally, some laborers refuse to work fields on which no herbicides have been applied. Labor and tillage costs for weeding are about equal to herbicide costs. It may be that labor cost alone will exceed the cost of chemical weeding and machine thinning in the near future.

U.S. FARM EFFICIENCY INCREASING

At the turn of the century, the average U.S. farm worker produced enough food; fiber, and tobacco for himself and six others. In 1969 the figure came to 45 persons, including the farmer and six people living abroad. That compares with 43 people in 1968—five of whom were foreigners.—USDA "Agricultural Situation," Sept. 1970.
GWU's White Key Speaker At Growers' Banquet

One of the highlights of the annual meeting of the Mountain States Beet Growers Marketing Association of Colorado and Kansas was the appearance of William M. White, chairman and president of Great Western United Corp., parent firm of GW Sugar.

White was the featured speaker at the banquet, attended by several hundred association members and their wives. It was his first appearance at an annual meeting of the association (Note the accompanying photo). A fourth-generation Great Westerner, he traced the history of the Company and recent events involving the parent company.

The GWU president pointed out that GW United now pursues three basic endeavors—foods, with Great Western Sugar; community developments, with Great Western Cities, including Colorado City; and specialty restaurants, with Shakey's Pizza Parlors.

White assured growers that GW Sugar still provides the foundation for GW United. He outlined encouraging prospects for sugar consumption, but said both the company and the growers must take progressive steps to alleviate the problems of the migrant worker.

Recalling last year's beet harvest, White noted that both the growers and the company sustained heavy losses. As for the future, he cited indications of an upswing in the national economy. But for the time being, he added, "we all will have to run a little harder."

Sugarbeet Growers' Dick Blake Moves To Washington

New honors came to Richard W. Blake, who for more than 20 years has served Great Western and other sugarbeet growers in association affairs, when he was recently appointed Washington representative for the National Sugarbeet Growers Federation. His office will be in the nation's capital.

Dick continues to serve as executive vice president of the Federation but has given up his other position as executive secretary of The Mountain States Beet Growers Marketing Association of Colorado and Kansas, with headquarters in Greeley. He will move to Washington next month.

The Federation is composed of beet grower associations in the west and northwest, including all of the groups in the GW area. It is the largest of the sugarbeet grower association groups in the United States.

Dick was born on a beet farm near LaSalle, Colo. and was graduated from Colorado State University. He served in Europe in World War II as a pilot with the U.S. Army Air Corps.

He has testified for all the U.S. beet growers at various USDA and Congressional hearings and has been a member of the U.S. advisory staff at meetings of the International Sugar Council in London and Geneva.

Dick and Shirley, his wife, were honored last month at the annual meeting of the Mountain States association. Retiring president Bob Sakata presented each with a set of matched golf clubs and a letter of tribute to Dick, signed by all of the directors.

Sakata said "it gives us faith in the future of the sugarbeet industry to have Blake in Washington."

Blake's position in Greeley has been filled by Lee Johnson, formerly with the California Beet Growers Association.
Beet Pile Protection With Straw

By Dr. WALTER R. AKESON
Plant Physiologist
Longmont Experiment Station

People driving through Great Western areas this fall have no doubt seen unusual looking straw piles on many of Great Western's pile grounds. The covering of beet piles with straw is a part of Great Western's expanded pile storage experimental program. The basic aims of the program are:

1/ to reduce the sugar losses during storage.
2/ to provide factories with higher quality raw material.
3/ to extend the length of a profitable processing campaign.

Achievement of these goals would benefit the company and grower alike. For example, less diversion of beets, resulting from extended campaigns in areas which produce a surplus of beets, would give a freight saving to both the Company and the growers.

Extensive losses of sugar occur on the rims (outer 2- to 3-feet of the pile) as a result of dehydration and alternate freezing and thawing of beets. Although the rim makes up only 15 to 20% of a pile, sugar losses in the rim may contribute up to half the total sugar losses in the pile. Under conditions of extreme cold weather followed by warm windy weather, as occurred in January and February of 1970, large sections within piles may freeze and subsequently thaw. The frozen and thawed areas deteriorate rapidly which results not only in loss of sugar, but also in an increase in impurities which greatly interfere with factory operations.

A major phase of the beet storage program is to develop methods of pile protection which will greatly reduce losses caused by dehydration, freezing and thawing of beets. Prior to 1969 most of the experimental work with pile protection involved covering sides of piles with black polyethylene plastic. The high labor requirement for application of the plastic and the damage by wind made this material undesirable as a pile cover.

In the fall of 1969 several test piles were covered with chopped straw blown through a straw blower. Straw covering results of last year appeared promising and justified further experimentation. Two experimental tests were completed. In an Ohio test the sugar loss in the rim of non-covered piles was two to three times as large as in the rim of straw-covered piles. No differences in loss were measured in the interior of the piles. Thus, the principal benefit in this test (100 days), where temperature fluctuations were moderate, was reduction of dehydration and of freezing and thawing of rim beets.

In a similar test in the west, beets were stored for 145 days under typical weather conditions which occurred in most of the Great Western territory during January and February. During the cold January weather, beets froze to a considerable depth in both the covered and non-covered piles. The 6-inch layer of straw did not give adequate protection of the rim beets against the warm
February winds as it did in Ohio. However, the straw cover appeared to insulate frozen sections in the interior from thawing and deteriorating as compared to the non-covered pile. As a result of this protection, sugar loss in the western straw-covered pile was reduced substantially.

Several regular piles in Colorado, Nebraska, Montana and Ohio were also covered with straw. Covering provided excellent protection for the rims of the piles until the last of January when warm chinook winds hit. Then the straw did not provide enough protection to prevent the warm winds from thawing the rim beets on the west and south sides of the piles, but did insulate the inside of pile from the thawing and deteriorating which occurred in many non-covered piles. We concluded some benefit was apparently obtained from pile covering, even under adverse storage conditions.

The straw was quite resistant to wind damage. The only damage was a little erosion on the sides facing strong prevailing winds.

On the basis of the 1969 results and observations, the Company is conducting an expanded pile protection program. Nearly 50 Company piles are covered with straw at depths varying from a thin coat (6" side, 2" top), medium coat (12" side, 4" top) to a heavy coat (18" sides, 6" top).

Many questions remain to be answered and problems remain to be solved regarding pile covering. Our research program is being carried out with the following objectives:

1/ Determine the proper use of and resultant saving from straw with regard to thickness, time of application and additional covering with plastic for varied lengths of storage time.

2/ Find the best method of straw removal.

3/ Determine whether other cover materials are effective in reducing storage losses.

4/ Seek methods of altering air current patterns in storage piles to prevent freezing and thawing in the interior.

The pile protection program is being carried out through the coordinated activities of the agricultural and the research departments. The overall program has been planned and supervised by the Beet Storage Task Force, headed by Sherman D. Fox, agricultural development engineer.

Task Force members include the writer; A. Wayne Argabrite, assistant to the chief engineer; John D. Edmiston, agricultural staff manager; Robert W. Fisher, senior systems analyst; Dr. Robert K. Oldemeyer, director of agricultural research; and George E. Walters, beet reloading manager. Phillip J. Hatch and Merle Riggs, former committee members, were recently transferred to positions in Chicago and Ovid respectively.

Montanan’s Ingenuity Adapts JD Thinner

By WALTER STOLLER
Billings Agriculturist
At Missoula, Mont.

“If a machine won’t work, give it to a farmer, he will modify it and make it work.” This is an old saying that was proven once again by Sam, Kent and Steve Kirksey of Townsend, Mont.

Last spring they bought a rear mount John Deere electric thinner and mounted it on an Allis Chalmers 190 tractor. They did it with ease and thinned 160 acres without problems. The equipment did a satisfactory job of thinning.

The AC 190 tractor has a hydraulic pump capable of delivering up to 12 gpm of oil with up to 2,100 psi.

The Kirkseys had to purchase an accumulator, an unloading valve and a restrictor valve to hold the required back pressure needed by the thinner. These three additional requirements were tied into the tractor’s hydraulic system and resulted in a smooth operation.

Other area beet growers have taken great interest in this adaptation and some will try it next spring. They plan to try the thinner with other makes of tractors which can produce the one essential item—the required gallons of oil per minute.

However, growers should remember that some tractor hydraulic pumps must also run power steering units which can require several gallons of oil per minute. For proper operation of the thinner, the pump must deliver at least 12 gpm in addition to requirements for power steering and other units.
Nebraska and Austria Growers Have Same Beet-Growing Goals

By GORDON RUDOLPH
Agricultural Manager, Mitchell, Neb.

There are five common goals of the Nebraska and Austria sugarbeet industry—labor reduction on the crop, increased yields and quality, processing efficiency, and production of a quality sales product.

The Enns Zuckerfabrik (sugar factory) contracts with 3,700 growers for about 7,000 hectares (17,290 acres) of beets annually. Growers are paid the same price per ton for beets delivered to the plant.

Selection of growers is based on quality of beets produced. High quality growers are permitted to increase their acreage and low quality growers are refused contracts. Acreage is limited by a committee of processors and growers to the production which will supply Austria's sugar needs.

Seed is supplied by local factories and only seed issued by the factories may be planted by growers. Planting is in rows about 16½ inches apart and seeds are spaced about one and one-half to two inches apart.

Pyramin is applied for pre-emergence weed control. The plants are thinned to about 10 inches apart in the row and the harvested population is 70,000 to 80,000 plants per hectare. (This is about 35,000 to 40,000 plants per acre and double the population harvested in the United States.)

Much of the beet field work is performed by the family, local workers or workers from Yugoslavia. These Yugoslavia workers are employed in the factories during beet processing.

June 15 is the final date nitrogen can be applied to the crop, and the general practice is to apply this fertilizer much earlier. Spraying for leaf spot control in the southern region of Austria is mandatory. Either Brestan or Duter is used on a schedule with two or three applications necessary.

October, November Harvest

The beets are harvested in October and early November. Receiving stations are operated from 6 a.m. until 6 p.m., Monday through Friday, and close at noon on Saturday. Delivery of the crop is on a schedule made by a joint grower-factory committee.

Much of the crop is stored by the grower on the farm and delivered on schedule to the plant. Payment for farm storage is made by the company to the grower. Harvesting is by mechanical harvesters and custom haulers. Two to six growers may own and operate a harvester together.

The Enns plant slices 5,500 tons per day and completes the processing campaign before Christmas. About 30,000 tons of beets are stored, with refrigerated air ventilation, for processing in December. Plant capacity has been sufficiently increased in recent years to assure this schedule.

Enns Zuckerfabrik packages sugar in 2.2-lb., 22-lb. and 110-lb. packages, plus wrapped cubes for restaurant use. Nearly every restaurant serves cube sugar individually wrapped with advertising on the paper covering.

The friendly Zuckerfabrik staff extends overseas visitors a warm welcome.
Frank Basket of Corvallis, Mont., believes in the use of fumigant for nematode control. Here he shows what happened when he ran out of fumigant applying Telone across the rows. Note the loss of beets in the center where the pest was able to work unhampered.

Carl Hendrickson, Production Credit Association fieldman at Fort Collins, left, and John L. Long, Greeley First National Bank agricultural representative, demonstrate the difference in top growth where Les Boulter of Platteville fumigated with Telone for nematode control in one area and not in the other. There was no fumigant applied on the left where the yield was 20.6 tons per acre. Fumigant was applied on the beets to the right and the yield was almost 30 tons to the acre. GW Grower Service Center at Platteville fumigated for Les, a consistent grower of 22-ton beets.

Nematodes Controlled By Montana Growers

Growers produce sugarbeets for one reason—to make money. Although growers must cut expenses where they can, it should not be in the control of nematodes, a problem in western Montana.

It pays to fumigate where this microscopic pest is present. Beet growers in the Bitterroot Valley have proved this to themselves.

While the remedy for nematodes has a high cost per acre, fumigation can often mean the difference between a 7-ton beet crop and an 18-ton crop.

Bitterroot Valley growers were fumigating several years before they started growing sugarbeets for Great Western in 1967. They know that if nematodes are present they must fumigate.

These growers have been using Telone with much success. They apply the chemical in the spring, eight to 10 inches deep and at a rate of 12 to 16 gallons per acre, depending on the soil type.

The farming practice in the Bitterroot Valley, where cropland is limited for proper rotation, is to plant beets after beets. The 16-gallon rate was applied every other year on the heavier Hamilton silt loam soil. The 12-gallon rate was applied every year on the lighter Grantsdale loam soil. Most of the growers have their own applicators.

Telone gives good nematode control and apparently some weed control. The latter is evident when a strip of beets is missed by the applicator. In this case these strips often show more weeds. The fumigant also seems to reduce the quackgrass population.

However, this apparent weed control may be because of the inability of the smaller beets, being attacked by nematodes, to offer the weeds sufficient competition.

The Bitterroot growers have been able, with use of fumigation, to hold their stations’ averages between 18.5 and 20.0 tons per acre with an average sugar content of 17%.—Walter Stoller, Billings agriculturist.

Ralph Hettinger, Billings agricultural manager, stands beside the first cabin built in Peas Bottom where the Big Horn River flows into the Yellowstone. High tonnage sugarbeets are now grown in this area of Montana.
AROUND THE TERRITORY

**Diane Miller,** daughter of beet grower and Mrs. Edwin J. Miller of Atwood, Colo., had an impressive list of awards to take with her when she enrolled at Colorado State University this year.

The 1970 Sterling High School graduate won $1,000 Sigman Meat Co. award in a home economics cook off; won $200 on a Union Pacific scholarship; and $600 for the 4-H national consumer education award, according to Lloyd Crook, Sterling agriculturist.

She was an active 4-H Club member and awards winner in local and state contests. She was a Citizenship Shortcourse delegate to a national conference in Washington, D.C. The lovely Coloradan is interested in journalism and has had a column in the Sterling "Journal-Advocate" and her high school paper. She is enrolled in the home economics college at CSU and is majoring in consumer sciences.

Diane's brother, **Gene,** 16, is an active 4-H'er and was Sterling 4-H beet project winner in 1969, and his 1970 beets also did well.

Their father, Ed, and his brother **William** generally raise more than 100 acres of beets annually.

**"Montana Sporting News"** gave a nickname to the 15-year-old daughter of Jerome Pyette, Billings agriculturist, and it is sticking. Margaret Pyette, one of the up-coming young track stars at Hysham High School, is now known as "Pixie" Pyette.

Pixie did great last year in track competition and did a lot of running during the summer, getting ready for 1971. She now is keeping in shape playing volleyball and basketball with an eye to beating her previous time for the mile race.

The delicate lass is 5-feet tall and weighs a mere 80 lbs. And yet, as a freshman, she placed fifth in the State Track Meet with a time of 5:50.9, according to Jerry Reed, assistant agricultural manager at Billings.

**Mary Pomeroy,** 11-year-old daughter of landowner and Mrs. Perry Pomeroy Jr. of Atwood, Colo., took grand champion dairy animal with this cow at the Logan County Fair. Mary also won the NJC Aggies Livestock Exposition trophies for grand and reserve champion and showmanship. More than 100 acres of beets have been grown on Perry's land in each of the last two years, according to Lloyd Crook, Sterling agriculturist.—(Sterling "Journal-Advocate" photo.)

**Craig Nelson,** 23, son of Loveland agriculturist and Mrs. Bert Nelson of Fort Collins, Colo., drowned recently while fishing on the inland passage at Metlacatla, Alaska.

Craig was basketball coach at Metlacatla. He and another teacher were in a boat swamped in a storm. Bert says the bodies had not been found at the time this magazine was published.

Craig was born in Billings, Mont., when Bert was an agriculturist at Hysham. He was a graduate of Poudre High School at Fort Collins and Colorado College at Colorado Springs. He was a graduate assistant at the University of Wyoming before taking the job in Alaska.

**Stan Walker,** son of beet grower and Mrs. Arthur Walker of Scottsbluff, was among 49 freshmen at the University of Nebraska winning $200 Union Pacific scholarships.

Stan is president of Nebraska's 5,200-member Future Farmers of America Association. He has also been active in 4-H Club activities. He won the Scottsbluff factory FFA sugarbeet project trophy in 1969.
Sugarbeet grower Kenneth Good of Powell, Wyo., is equally at home on a motorcycle or a tractor, according to George Pfau, Lovell agriculturist.

Ken and his father operate a 400-acre partnership farm with 185 acres of sugarbeets, plus beans and barley. They feed cattle and sheep.

Ken is diversified in his motorcycle talents, competing in cross-country races, hill climbs and winning first place in the Wyoming Grand Prix in Lander. His wife and child accompany him to the races.

Dale Miller, son of beetgrower and Mrs. Martin Miller of Brighton, Colo., took 5th place in the recent Western U.S. Tractor Operators' Contest at the Minnesota state fair grounds in St. Paul.

The contest was sponsored by the Cooperative Extension Service. Dale's trip was sponsored by the American Oil Foundation, according to John Stewart, Brighton agricultural manager.

The youth is a freshman at Aims Junior College and plans to major in electronics. He was active in 4-H Club work. He won the right to participate in the western event by winning county, district and state eliminations. The contests included written examinations, driving ability with a 2- and then 4-wheel implement attached, and overall tractor safety.

Congratulations to Donald Bernhardt, Ovid agriculturist, who married Carol Anne Cooper, daughter of Mr. and Mrs. Elmer Cooper of Grant, Neb. Don is son of Mrs. J. C. Bernhardt and the late Mr. Bernhardt of Laurel, Mont.

Don, a graduate of Montana State University, was formerly agriculturist at Billings and Scottsbluff. Carol is a special education instructor in the Ogallala Public Schools. They live in Ogallala.

En garde for the Estes Park Course! That's the retirement challenge for Charles R. "Chuck" Johnson, standing at left with his wife, "Queenie." John D. Edmiston, agricultural staff manager, standing at right with his wife, Phyllis, arranged a luncheon in Chuck's honor upon his retirement as agricultural manager at Lovell. P. B. "Phil" Smith, retired GW director of agricultural development, is seated with his wife, Mildred. Chuck joined GW at Billings in 1931 and later served at Denver, Scottsbluff and Gering. Upon retirement the Johnsons moved to Estes Park, Colo.

Men, women and machines moved in to harvest beets when Fred Ehrman of Gering, Neb., was too ill to work. Early on a Sunday morning the volunteers started work and harvested 30 acres of beets and delivered 93 loads to the Gering factory receiving station, kept open to take the beets. In the photo at left are, L to R: Henry Jerger, Ed Schlotthauer, Harold Tripple, Elmer Dietrich, Paul Jerger, Gene "Butch" Shelly, Forrest Cochran Jr., Nick Ehrman and Reuben Jerger. Ladies feeding the hungry harvesters are; L to R in the right photo: Mrs. Frank Craft, Mrs. Don Tripple, Mrs. Ed Schlotthauer, Mrs. Henry Jerger, Mrs. Harold Roth, Mrs. Vern Ziemann, Mrs. Sam Jerger and Mrs. Warren Brashear. ("The Business Farmer" photos.)
CSU Ag Research on Sugarbeets Swung into High Gear in 1920s

(Editor's Note: This is the last installment of a 2-part series on the history of agricultural research at Colorado State University (CSU) with major emphasis on sugarbeets. The first article was published in September. Material in these articles was compiled by CSU's Office of Information and Public Services. Dr. L. W. Durrell, who was of great assistance in gathering this information, died Dec. 1 as this magazine was going to press. For further details see box on page 2.)

■ In the early 1920s Colorado Agricultural College (now Colorado State University) expanded its sugarbeet research when its Department of Animal Husbandry began demonstrating the value of beet pulp for fattening livestock.

At the same time, Great Western's Longmont Experiment Station and researchers at other sugar companies began stepping up the pace of their beet experiments, working closely with the college and the USDA.

Research emphasis began to turn more and more to beet quality and increased sugar content. Work progressed with tests of commercial fertilizers and feedlot manure, tests to determine the best spacing for maximum yield, experiments on proper application and use of irrigation water, and during the World War II period, in development of improved mechanized equipment.

Factories Continue to Open

New sugar factories continued to open in Colorado and by the mid 1920s the college experiment station was a leader in determining the value and most effective use of sugarbeet by-products. Leading the way was E. J. "Jack" Maynard, who became associated with the station in animal investigation in 1919, and George E. Morton, who became head of animal husbandry when it was made a department in 1909.

Maynard joined the Great Western Sugar Co. in 1936 as livestock consultant and continued to work closely with college researchers. Others followed Maynard in animal investigations and all devoted considerable time to development of beet pulp feeding.

Dr. L. W. Durrell, dean emeritus, botany and plant pathology at CSU, initiated sugarbeet research on the academic side of the college in the late 1920s when he bypassed channels to squeeze a young USDA plant pathologist, Dewey Stewart, into his already overcrowded laboratory on campus.

In July 1969 Stewart, collaborator, USDA Sugar Beet Investigations in Washington, D. C., wrote Mrs. Merle G. Payne, CSU professor of chemistry: "When I was transferred from Rocky Ford to Fort Collins in 1928, USDA cooperation was with the beet sugar industry and not with Colorado State Experiment Station.

"Durrell made laboratory space available to me as a guest. Official cooperation came three or four years later. Thus he by-passed protocol and established cooperative sugarbeet research that has expanded many fold, brought about a $1 million facility (Crops Research Laboratory) on campus and made Colorado State University the outstanding center of sugarbeet research in this country and well-known in the 'sugarbeet world.'"

Stewart began lab investigations on leafspot (Cercospora) which periodically devastated the crop in Colorado. The disease mycelium enters the leaf pores and kills tissue. This results in spots and eventually kills the entire leaf.

The plant pathologist continued working with Durrell at the college until he was transferred in 1932 to the USDA in Washington. He was succeeded by John O. Gaskill, a plant pathologist who is the USDA's Sugar Beet Research Division station head at CSU.

Gaskill and his team of investigators have continued research into control of leafspot and other sugarbeet diseases and have contributed significantly to the development of new techniques for resistance measurement and to the development of new strains with high resistance. These new strains are used as basic materials in many programs for providing improved varieties.
Dr. H. E. Brewbaker, plant breeder and director of the GW Agricultural Experiment Station for about 25 years, was first employed in the mid-1930s by the USDA in Fort Collins where he helped develop higher producing sugarbeet varieties. After Brewbaker left for GW in 1937, G. W. Deming began his famous inbreeding studies. He developed a number of uniform inbred lines which are still used in basic inheritance studies.

Dr. LeRoy Powers, a renowned geneticist in the USDA, was to come to Fort Collins in 1954 for 11 years of plant breeding research. Using Deming’s lines, he established breeding principles and inheritance of various characters in sugarbeets. He also contributed greatly to the academic program at CSU.

Until the middle 1930s, leafspot was the principal object of research. It continued—and still does today—to have top priority. But, as Durrell put it: “Scientists were so impressed by leafspot that they neglected things down in the ground that weren’t so obvious—such as root rot.”

He said several organisms are responsible and one of them is Rhizoctonia (root and crown rot), a common soil organism. To throw some light on the problem, Durrell and a research assistant, Dr. William A. Kreutzer, conducted studies and in 1938 published a paper on their work. Kreutzer is professor of botany and plant pathology at CSU.

Sugarbeet Studies Expand

CSU scientists continued their attack on beet diseases while expanding sugarbeet investigations in plant nutrition, entomology and chemistry. For many years a crop rotation study was maintained at the old agronomy farm at the end of Garfield St. in Fort Collins. Sugarbeets were the principal cash crop involved. Professors Alvin Kiezer, D. W. Robertson and later Robert Whitney studied the results of the various rotations which showed the value of alfalfa as a source of nitrogen and possibly for keeping the soil open.

Fertility experiments were conducted by the soils professors which proved the necessity of phosphorus fertilizers and the value of proper quantities of nitrogen fertilizer on Colorado soils. More recently, Dr. Alex Dotzenko demonstrated that a good chemical weed control program in all crops on the sugarbeet farm can result in virtually full elimination of weeds in all crops.

Among chemists who have devoted extensive research to leafspot since the late 1950s is Mrs. Payne, who became involved at CSU at the request of Gaskill. She was assisted by Agricultural Research Service (ARS) grants.

Mrs. Payne, who retired June 30 with the title of emeritus professor of chemistry after 40 years as a teacher and research scientist at CSU, appeared “to be on the doorstep” of a breakthrough on the leafspot problem, Durrell said.

The chemist and her present team have grown the Cercospora fungus in large flasks and have succeeded in creating an extract which produces a chemical that will artificially start a spot on the leaf of a beet plant. Mrs. Payne said the chemical affects the susceptible varieties more than resistant plants. Gaskill, who follows her experiments closely, said higher levels of leafspot resistance are needed, however, and that “we’re working actively on combining resistance to leafspot, curly top and Rhizoctonia root and crown rot.”

(Continued on next page)
(Continued from page 15)

He adds that work on the problem of root and crown rot began at the ARS Crops Research Laboratory at CSU in 1956 and there has been definite progress.

At the same time, researchers are continuously engaged in seeking more effective insect control, including webworm and root maggot. Gaskill says the periodic outbreaks of webworm are under control although root maggots are a current problem for the scientists.

Gaskill says resistant varieties of sugar beets have been effective in control of curly top, a virus disease, on the Western Slope of Colorado.

A major breakthrough in the century-long struggle to produce sugar beets with less hand labor was made with development of the genetic monogerm seed following World War II.

Discovery of a monogerm strain of sugar beet was made by Drs. Helen and V. F. Savitsky, displaced Russian scientists in Western Europe, who were brought to the U.S. by the U.S. beet industry in 1948. The couple worked in a government laboratory in Salt Lake City to develop the real monogerm seed used now—one seed to a seedball.

Dr. Jess Fults of CSU studied the activity of the limited number of sugar beet herbicides available in the 1950s. In recent and continuing research, Dr. Robert Zimdahl of CSU and Dr. Ed Schweizer, USDA, are investigating the new herbicides and their activity on beets.

Dr. Jack Altman, CSU associate professor of botany and plant pathology, has been doing important work on control of sugar beet nematode. Crop rotation was the principal control for this disease years ago, but use of soil fumigants as a control is increasing.

CSU agricultural engineers played an important role in development of the mechanical sugar beet harvester during and immediately following World War II. Ray Barmington of CSU was involved in some of the basic work which eventually led to development of the GW thinner and selective thinners.

Agronomic and cultural advancements over the years made it possible for agricultural engineers to develop more sophisticated mechanical equipment.

Sugar beets and the beet sugar industry are complex. As Durrell explained, “Think of all the mechanics, chemistry, entomology, plant pathology, agronomy and other sciences going into production of beet sugar. It’s amazing.”

The tremendous efforts of the research workers at CSU and USDA at Fort Collins have made valuable contributions over many decades to the success of the beet sugar industry, in Colorado and in the entire United States.

Sterling’s GW Expo Big Success
So Cattlemen Plan 1971 Show

- Great Western Beef Expo at Sterling, Colo., was such a success in 1970 that plans are well underway to hold a second cattle feeding test in 1971.

Les Garner, Sterling agricultural manager, says officers of the Expo, headed by Ted Had-dan, president, were pleased with results of the 1970 beef show, an out-growth of the booming multi-million dollar beef industry in northeastern Colorado.

The Expo brought together cattle producers, feedlot operators and meat packers in an effort to satisfy the consumer, by supplying leaner meat at a decent margin of profit for the producers and processors.

Heredity was the key factor under study during the 178-day feeding tests. There were eight crossbred, and 16 straightbred groups—six Angus, eight Hereford and one each of Shorthorn and Scotch Highland breeding.

Keith Propst, Merino sugarbeet grower, holds the GW Beef Expo “traveling trophy” his Charolais-Hereford crossbreds (similar to those in background) won for their lean carcass yield. His "helpers" are, L to R: daughter Holly and sons Joel, Kim (with the Expo grand champion sire trophy) and Koger (holding the champion crossbred trophy).
Shown is one of the fine Angus cattle that won the GW Sugar $100 award for feedlot gain reserve championship for Sam Brammer and his son, Kenny, at the Sterling feed test. Examining the steer are, L to R: Sam Brammer, Les Garner, Sterling GW agricultural manager, and Ted Haddan, Expo president and stockman and farm service officer for a Sterling bank. The other photo is of Sam with the same animal's carcass hanging in the cooler after judging.

After 29 days of preconditioning at E. E. Sonnenberg and Sons Feed Yards at Sterling, the cattle were put on a standard feedyard program—including dry beet pulp pellets. The animals received the same handling, so nearly all differences between individual steers were eliminated, except for heredity.

Sugarbeet grower Keith Propst of Merino took grand champion honors in the carcass division, with five Charolais-Hereford-cross steers. Each steer produced more than three-fourths of a pound of lean meat per day of age.

Another landowner of a beet farm, Sam Brammer, and his son, Kenny, of Sterling took the GW Sugar feedlot gain reserve champion award. Their Angus champions had an average daily gain of 3.04 pounds and the lean meat per day per animal totaled .7248 pound.

One of Propst’s Charolais-Herefords also took third at 3.26 lbs. in the fastest-daily-gain individual contest.

Probably the two most obvious findings at the Beef Expo, according to Haddan, were: There is much more variation in the value of individual beef animals than most people in the industry realize; There is need for greater accuracy in evaluating live beef cattle as compared to beef carcasses.

The Expo president says answers to the problems of beef evaluation will be continuing goals of future Expos.

Jim Read, Logan County extension agent, put the aims of the Expo thusly:

1/ Encourage cattlemen to select stock according to weight for age, gain in the feedlot, lean yield per day of age, and USDA grade and consumer acceptability.

2/ Identify outstanding sires and utilize differences in progeny groups as related to economic factors mentioned above.

3/ Increase interest, awareness and knowledge of current market demands within all segments of the beef industry.

All of this started in June 1969 when the Beef Symposium at Sterling jolted the livestock men present. At that time pictures of live animals were compared with photos of cross sections of the animals after slaughter.

Haddan said it was dramatically shown that sleek, smooth, well-balanced animals experienced cattlemen have been selecting as top beef cattle do not always turn out to be the best carcass animal.

Instead, researchers at the Symposium showed that long-bodied and up-standing cattle, considered less typical and lacking in "eye-appeal" preferred by show judges, yielded more lean meat.

Beefmaster-Shorthorn-Angus crossbreds took first in the feedlot gain competition with an average of 2.08 lbs. per day—.04 better than did the Brammer animals.

During the tests, two machines were used to measure the amount of lean meat on the live animals. These machines, just starting to prove their worth with livestock, are the Scanogram and the K-40 Counter.

The Scanogram, working like sonar, uses high frequency sound impulses and echo systems with a quick photo response. Within 10 seconds a Polaroid print of the animal's cross section can be seen, showing the outer fat layer and the red meat and bone outline. It was originally used on humans.

The K-40, in a 36-ton van, was developed by NASA for screening astronauts to tell how much lean meat they had and to see what their tolerance level would be under decompression—nitrogen in the system boils in fatty tissue.

Entries for the 1971 show, scheduled for mid-June, are already on a 30-day leveling off period at Sterling before the actual feed test program is started.

The 1971 tests consist of five steers from the same sire with a minimum weight of 450 lbs. All breeds and crossbreeds were eligible to enter and compete for $3,000 in cash prizes, trophies and awards.
Harold Long of Windsor, Colo., stands beside the in-row fall fumigation rig used in a bedding program that should speed up planting next spring.

**Wyoming Growers Use 'Be Prepared' Motto**

By JIM DECKER
Lovell Agriculturist

"Be Prepared" is not just a Boy Scout motto for Melvin Green and Jerry Lewis, who farm together south of Basin, Wyo. They make this slogan work to their advantage in growing good sugar beets.

Under their particular conditions they are able to rotate malt barley and beets every other year. This rotation allows them to plow and work the ground in the fall and be ready to plant as soon as the ground is dry in the spring.

Mel and Jerry have averaged between 80 and 90 bushels of grain and 22-ton per acre beets the last four years. In 1969 they averaged 26 tons on 135 acres of beets, all electronically thinned.

Their secret is that as soon as the grain is harvested they plow down the straw and apply 100 units of phosphate and 50 units of nitrogen, in liquid form, per acre.

Following the fertilizer, they disk and roller harrow the ground twice. If the moisture level is right they level the ground and leave it for spring.

In the spring the first operation is application of Ro-Neet and Avadex at a 5-lb. active rate per acre total coverage. Avadex is used because of their wild oat problem.

The Basin growers have between 95 and 100% weed control. To incorporate the herbicide they use a roller harrow working at a 5-inch depth. After this operation they level and plant. The beets are irrigated to insure a good emergence and uniform stand.

About May 20, field labor removes any weeds missed by the herbicide. A John Deere electronic thinner is used to get the dead stand. Then field labor removes any remaining weeds. By following this practice Mel and Jerry have been able to reduce their labor costs to practically nothing.

The beets are side dressed with extra nitrogen and phosphate about June 20. This brings the nitrogen level to 200 units per acre and the phosphate level up to 130 units.

The Wyoming growers then furrow the beets and lay-by for the summer. The beets are watered every 10 to 14 days, depending on the weather and soil condition, until the middle of September. Then it is time to get ready for harvest.

**Coloradans Switch To Fall Fumigation**

Harold Long and his son, Harold Lee, of Windsor, Colo., are aiming for an earlier beet planting date next spring and a reduction in seedbed preparation costs.

They switched to in-the-row fall fumigation this year with a bedding program for the sugar beets on their 250-acre farm.

The elder Long has raised beets all his farming life and formed a partnership with his son five years ago. They used soil fumigation to control nematodes two years and tried fumigation-bedding last spring.

"We're now using Telone. Before we began fumigating a few years ago, our average yield had gradually declined from 14 tons to eight tons per acre.

"The reason we're going to fall fumigation is to enable us to plant our beets earlier in the spring."

Application rate on this year's beets was 15 gallons of Telone per acre at 22-inch spacing and a depth of 14 inches. Chemical application machinery was rented from the GW Grower Service Center at Platteville.

"We like this system," young Long said, "because we're getting the fumigation where it is needed. In addition, bedding helps on irrigating and the beets come up faster."

Carl Luft, service center manager, said he is adding the fumigation-bedding technique to the center's operations.

He said, "Bedding reduces tractor compaction to a minimum, nearly eliminating it. The bedding system as part of the seedbed preparation program is of tremendous assistance to all subsequent precision machinery operations."
Beet Grower State ASCS Head

Carl Stratton of Lyman, Neb., has been a busy man for years handling his farming and lamb-feeding operation, while remaining active in Agricultural Stabilization and Conservation Service (ASCS) work.

August was a turning point when Carl was named chairman of the Nebraska ASCS state committee. Now he has to work even harder. He is the first sugarbeet grower from Western Nebraska to be chairman of the state group and says he believes he is the first irrigated farmer from the North Platte Valley to hold that position.

The Lyman grower was a Kiowa precinct ASCS committeeman and later was on the Scotts Bluff County committee for several years. He was appointed to the state committee two years ago.

"It takes a sharp pencil to make farming pay off today and the ASCS has an important role to play," he explains.

"Often we hear comments that the ASCS is paying tax money to farmers for growing sugarbeets. This is far from the truth." Sugar Act payments come from an excise tax imposed on the sugar industry, he said. These payments help assure the country of a sound, dependable sugar industry and hence a stable supply of sugar at reasonable price levels.

As state ASCS chairman Carl urges farmers to handle immediately any cards or questionnaires they received from his organization. "Too many growers put these queries aside and actually delay their own payments," he says. "Timely return of any ASCS correspondence is of benefit to the growers."

Carl, who has 100 acres of sugarbeets, is a strong believer in the value of beets in making ends meet. He says sugarbeet growers have an advantage over some other farmers if they fully utilize their by-products.

"I need lambs to make a going operation of my farm," Carl says.

Normally he uses a top saver and windrows his beets, although he says the tops bring the best return when siloed and fed to livestock.

Carl feeds 3,000 lambs annually on his 620-acre irrigated farm. Alfalfa and corn tie in with his feeding operation. He also raises pinto beans. The beet campaign began Oct. 5 this year and Carl began to contract lambs between Oct. 1 and 10.

Beets are an old story with the Lyman grower. He began working beets as a youth in 1936 near Lake Alice where he was born.

Carl has been growing beets on his present farm since 1946. So when anyone asks the ASCS State Committee about beets, Carl is the one who answers. He learned the hard way—thinning, weeding, topping and harvesting by hand. It's much easier today, he says.
There's Good Side to Pesticides

(EDITOR’S NOTE: This article is reprinted from the Oct. 17, 1970 issue of “The Business Farmer” of Scottsbluff, Neb.)

As with medicines and autos, the benefits must be balanced against the dangers when considering whether or not to use pesticides, according to University of Nebraska scientists.

Dr. O. C. Burnside, professor of agronomy; John D. Furrer, Extension pesticide and weed specialist, and Robert E. Roselle, Extension entomologist, have written about the pesticide controversy.

Some of the benefits they point out include:

—Millions of lives have been saved through use of DDT to control the insects that transmit such diseases as malaria, typhus, and yellow fever. In India alone malaria cases have dropped from 75 million cases a year to fewer than 100,000 and life expectancy has jumped from 32 years to 47 years.

Much Land Reclaimed

—Much land has been reclaimed for homes and agriculture.

Ceylon was able to move from a crowded third of the island into a formerly malarious two-thirds as a result of mosquito control. Malaria cases dropped from more than 2 million in 1950 to 17 in 1963, when use of DDT was stopped. Malaria cases then ballooned to over a million in 1968 and DDT use was resumed.

—Pesticides have been a major contributor to an increase in crop production of from 20 to 30 per cent in the past 30 years. The agricultural surplus is only four per cent of agricultural output, which is not much of a safety margin. Without the large output, exports of $7.4 million in 1967, 24 per cent of the total, would be eliminated.

—Both the variety and quality of foods in stores have been improved because of protection from damaging pests and disease.

—Food production costs have been reduced by an estimated $2.5 billion annually. Government figures indicate that productivity in agriculture has increased at twice the rate in non-agricultural occupations.

—Food prices in the United States have been kept down to only 16.5 per cent of income. This would increase to 50 to 75 per cent if pesticides were eliminated.

As to safety, the authors write, regulation of pesticides in the U.S. has set a standard of excellence recognized around the world.

“A pesticide cannot be used in the United States until it has received the approval of the Federal Drug Administration, which protects our food supply; the Department of Interior, which protects wildlife and environment, and the Department of Agriculture, which judges effectiveness and safety,” they write.

DDT, the villain in the present ecology controversy, is less than a third as poisonous as aspirin, the authors point out. DDT killed no human in 1961 while aspirin killed 182 people.

A federal Water Pollution Control Administration study of fish kills in 1968 showed that 2.2 per cent were caused by insecticides, poisons, etc., while 88 per cent were caused by municipal and industrial wastes, they say.

The scientists added their observation that the paramount cause in endangering certain wildlife is the loss of habitat and the disturbance resulting from man’s activities.

Ralph and Muriel Conklin discuss the 1970 harvest with Clarence Maupin of Gering, Neb., who was delivering some of his 65 acres of beets to Gering. L to R, Ralph, the factory pilot operator, has worked harvest seasons for GW since 1920. Muriel has weighed beets since 1953.
Nebraska Man, Wife Pile and Weigh Beets

Ralph and Muriel Conklin have weighed and piled a lot of beets since they first began receiving them from Nebraska growers.

Ralph began as a car man at the old Trail dump, southeast of Mitchell in 1920 and has worked at many of the area receiving stations since that time. Muriel started as a scale lady at Roubadeau in 1953 and the following year went to Gering, where she and Ralph work at present. Ralph operates the piler.

Ralph well remembers the days when beets were scooped with shovels from horse-drawn wagons at the piles.

It was about 1926 that GW started to set up new stations and introduced mechanical unloading equipment. Those were the days when the trucks had 2-wheel brakes and a stinger had to be thrown off the back end to keep the trucks from rolling backwards. Ralph says several times before trucks took over teams of horses and wagons slipped into the cars and had to be shipped to the factory for removal by cranes.

Ralph was raised on a farm in Minatare where his father, Clem, now 94 years old, used to grow beets.

This year Ralph began work at the Gering pile Oct. 1 to work about six to seven weeks. In the old days he said he was still piling beets in January. The rest of the year, Ralph is a ditch rider for the Farmers Irrigation District. He has been riding ditch for the district 14 years.

Muriel works longer at Gering handling beets coming in from outlying piles. She works into January and February weighing trucks transporting piled beets.

Modern equipment is helping Muriel get her job done more easily. She used to work the old scale manually. The new scale is automatic and is checked at least twice daily for accuracy.

On her busiest day in 1969—Nov. 11—Muriel worked 10 hours handling 453 trucks, weighing them in and out. She says receiving is easier this year with many larger trucks operating.

She and Ralph say modern equipment has brought many changes—the harvest is getting shorter, and the loads are getting cleaner with the increased use of top windrowers and harvester cleaning devices in Nebraska.
Beryle Oldemeyer Keeps Busy

By CHARLOTTE McDANIEL
"Through The Leaves" Staff Writer

Mrs. Orville "Beryle" Oldemeyer never has problems deciding what to do with her time—just where to find enough of it. She says she gets only "about half of the things done" she'd like to. It doesn't take long to discover the reason. Beryle is a truly creative housewife who likes to dabble in all sorts of hobbies.

The Oldemeyers live in Johnstown, Colo., in a house you immediately call a home. They have four children and according to Beryle, her grandchildren number "five and an almost," three of whom are shown in the accompanying photo.

Results of Beryle's creative efforts can be seen throughout their home, from the soft warm hues of the picture frames she makes to a rich walnut buffet that graces one corner of the living room. The buffet was originally maple. When Beryle decided to switch to a Mediterranean motif, she "couldn't bear to give up the buffet" since it was part of their original furniture. So she refinished it to fit the new decor.

If you haven't already guessed, woodworking is one of Beryle's hobbies. She is joined in this hobby by her husband, Bud. One of their projects was a magnificent walnut desk. According to Beryle, "it took quite some time to complete it, and, if we ever have to move, it might not fit through the doorway."

Beryle is currently making candlesticks out of piano bench legs cut to the right height. Another project is the creation of floral arrangements using driftwood. She can throw a couple of sticks and flowers together and make them look as if a florist had worked for two or three hours!

She also likes to sew, fish and hunt. She says their children, one of whom is still at home, like to refer to family camping trips as "the good times." Weekends have been spent, whenever possible as a family time, usually in the mountains. As Beryle puts it "where else can you better feel the presence of God, than when surrounded by the majesty of the Rockies, with your family about you?".

In her "spare" time, Beryle operates a clinic for sick and injured animals, which her son, Steve, 12, "finds with great regularity." One of the more recent patients was an injured cottontail.

Both Bud and Beryle like to play bridge. They belong to a couple's bridge club in Johnstown. They also belong to an investment club, which includes three other couples. Beryle is president of the club, but she says "Bud has the difficult job." He's the secretary-treasurer. In addition to their regular meetings, they have dinner meetings about once each month. When they meet at the Oldemeyers, Beryle likes to serve wine, which she makes herself. She says it's "kind of fun" to serve a product of your own making.

Bud has been with Great Western 28 years. The Oldemeyers have spent the past 26 years in Johnstown. Beryle, like so many of the other agriculturist's wives, finds time to help out during the spring, summer and fall. She refers to herself as "the secretary and messenger boy," answering a lot of phone calls and trying to track down Bud to deliver messages. She says Bud's growers are the "nicest people around" and have become "our good friends." When needed to fill in, Beryle is also a competent substitute scale lady.

Bud and Beryle are typical Great Westerners. When you leave their home, you find yourself thinking it sure would be nice to have the Oldemeyers for neighbors!
Holiday Treats from Wyoming

(Editor's Note: We recently requested recipes and were pleasantly overwhelmed by the response from the ladies in the Wheatland, Wyo., area. The following recipes for cakes, cookies, nut breads and candies, in keeping with the holiday season, are all from Wheatland. Other recipes from Wheatland will be used one or two at a time, in forthcoming issues. Our sincere "thank you's" go to the Wheatland growers' wives who were so generous in sharing their culinary secrets with us. Do try these...we think you'll like them!)

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CHERRY CAKE
1 C GW sugar 1/2 t baking powder
1 C flour 1 T butter
1/2 t soda 1 t cinnamon
dash of salt
1 C drained sour cherries
(save the juice)

Blend together all ingredients, using half of the cherries. Carefully blend in remaining cherries so as not to crush. Bake in 13x9x2 pan at 350° (approximately 1 hour.) Top with cherry sauce (see below) and whipped cream.

Cherry Sauce
1 C GW sugar 1 T cornstarch
Cherry juice 1/2 C water

Combine in saucepan and boil until thick. Cool and drizzle over cake squares. Top with whipped cream.

- Mrs. Robert Lauck

★ ★ ★ ★ ★

OLIVE NUT BREAD
2 1/2 C flour 1 C milk
1/3 C GW sugar 1 C stuffed green
4 t baking powder olives, sliced
1/2 t salt 1 C nuts
1 beaten egg

Sift flour, sugar, baking powder and salt together in mixing bowl. Combine egg and milk; add flour mixture, stirring until dry ingredients are moistened. Stir in olives and nuts. Turn batter into greased 8-inch round pan (1 1/2" deep). Bake in 350° oven for 45 minutes. Remove from pan and cool on rack.

- Mrs. Charles Woolsey

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IRISH DROP COOKIES
1 1/2 C raisins 2 eggs
1 C GW white sugar 1 t cinnamon
1 C GW brown sugar 1 t nutmeg (scant)
2/3 C shortening or 1 pinch of salt
margarine 3/4 C flour

Boil raisins in water to cover. Drain and save 1/2 cup of hot liquid. Cream shortening and sugar; add unbeaten eggs, spice, and raisin juice into which has been dissolved 1 t. of soda. Stir well; add flour, nuts, and raisins. Drop by teaspoonfuls onto greased cookie sheet. Bake at 425° until done.

- Mrs. Joe Howard

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COCONUT TEA STRIPS
2 C sifted flour 1 C GW sugar
2 t baking powder 1 whole egg, unbeaten
1 T grated orange rind 1/4 C milk
4 T lard 1/2 C orange juice
1/2 C coconut

Meringue
4 T GW sugar 1 egg white

Sift flour once, measure and add baking powder; sift together 3 times. Combine orange rind, lard and cream mixture; add 1 C sugar and cream whole mixture thoroughly. Add whole egg and beat until light and fluffy. Add flour mixture alternately with milk and orange juice a small amount at a time. Beat after each addition until mixture is smooth. Pour into greased pan. Cover with a thin layer of meringue, made by combining 4 T sugar with 1 egg white. Sprinkle with coconut and bake at 350° for 25 minutes. Cool and cut into strips.

- Mrs. Edwin Melcher

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MINTY APPLE JEWELS
2 1/2 C flour 1 1/2 C raisins
2 t salt 1 C semi-sweet, mint-
1 1/2 C GW baking soda flavored chocolate
sugar 1/2 C GD sugar morsels (6-oz.)
1/2 C shortening 1/2 C chopped nuts
1 1/2 C applesauce

Sift together flour, salt and soda; set aside. Combine sugar and shortening; mix well. Add flour mixture and applesauce; blend well. Stir in raisins, chocolate morsels and nuts. Drop by heaping teaspoonsfuls onto greased and floured cookie sheet. Bake at 375° for 8 to 10 minutes. Makes 8 dozen.

- Mrs. Ed Wilhelm

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CINNAMON CANDY
2 C GW sugar 12-15 drops cinnamon
1 C white corn syrup oil
1 C water

Red food color

Boil sugar, water and syrup to hard crack stage. Add cinnamon oil and food coloring (to desired color). Pour in greased cookie sheet. Or use to make popcorn balls. — Mrs. Joe Holcomb

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FUDGE
1 C nuts 1/4 lb. margarine
6-oz. pkg. chocolate 1 t vanilla chips
Place in large bowl.
2 C GW sugar 12 marshmallows
6 C margarine 1 small can evaporated milk

Place in large saucepan.

Bring contents of pan to boil. Boil for 6 minutes, stirring constantly. Pour contents over mixture in bowl and stir until margarine and chocolate chips are melted. Pour into a buttered pan and cool.

- Mrs. Kenneth Ockinga
Mrs. Charles Woolsey, Wheatland, Wyo., left, prepares to give Mrs. Robert Lauck a pre-Christmas sample of her olive nut bread. Recipes for the nut bread and Mrs. Lauck’s cherry cake are shown on page 23 as part of a collection of holiday recipes from Wheatland area growers’ wives.