Harvesting and Marketing

CANTALOUPES AND HONEY DEW MELONS

In the Arkansas Valley of Colorado
Seasons of 1924 and 1925

BY N. D. SANBORN

COLORADO EXPERIMENT STATION
FORT COLLINS, COLORADO
1926
THE STATE BOARD OF AGRICULTURE

J. C. BELL ........................................... Montrose
JOHN F. MAYES .............................. Manitou
W. J. GIFFORD ............................... Hesperus
J. B. RYAN ................................. Rocky Ford
A. A. EDWARDS, Pres. Fort Collins
J. S. COLLINS ............................ Westminster
E. R. BLISS ................................. Greeley
MARY ISHAM ............................... Brighton
Ex-Officio: GOVERNOR C. J. MORLEY
PRESIDENT CHAS. A. LORY

OFFICERS OF THE EXPERIMENT STATION
CHAS. A. LORY, M.S., LL.D., D.Sc. ........................... President
C. P. GILLETTE, M.S., D.Sc. .............................. Director
L. D. CRAIN, B.M.E., M.E. ............................... Vice-Director
L. M. TAYLOR ............................................. Secretary
ANNA T. BAKER ............................................. Executive Clerk

STATION STAFF AGRICULTURAL DIVISION
C. P. GILLETTE, M.S., D.Sc., Director .......................... Entomologist
G. H. GLOVER, M.S., D.V.D. .......................... Chemist
W. G. SACKETT, Ph.D. .......................... Bacteriologist
ALVIN KEZER, A.M. .......................... Agronomist
GEO. E. MORTON, B.S., M.L. ........................ Animal Husbandman
E. P. SANDSTEN, M.S., Ph.D. .......................... Horticulturist
B. O. LONGYEAR, B.S., M.S. .......................... Forestry Investigations
I. E. NEWSOM, B.S., D.V.S. .......................... Veterinary Pathologist
L. W. DURRELL, Ph.D. .......................... Botanist
RALPH L. P. BURCH, B.S. .......................... Asst. Irrig. Investigations (Meteorology)
R. E. TRIMBLE, B.S. .......................... Alfalfa Investigations
EARL DOUGLAS, M.S. .......................... Associate in Chemistry
P. K. BLINK, B.S., Rocky Ford .......................... Alfalfa Investigations
MIRIAM A. PALMER, M.A., M.S. ........................ Delinctor and Assistant in Entomology
J. W. ADAMS, B.S., Cheyenne Wells .......................... Assistant in Agronomy, Dry Farming
CHARLES R. JONES, B.S., M.S. .......................... Associate in Entomology
GEO. M. LEST, B.S., M.S. .......................... Associate in Entomology
CHARLES L. BRAY, B.S., M.S., Ph.D. .......................... Associate in Animal Investigations
F. J. MAYNARD, B.S.A. .......................... Associate Animal Husbandman
W. L. BURNETT .......................... Rodent Investigation
FLOYD CROSS, D.V.M. .......................... Assistant Veterinary Pathologist
W. M. FELDMAN, D.V.M. .......................... Assistant Veterinary Pathologist
J. H. NEWTON, B.S. .......................... Assistant in Entomology
J. L. HOERNER, B.S. .......................... Assistant in Entomology
J. W. TIBBS, B.S., M.A. .......................... Assistant in Chemistry
C. E. VAIL, B.S. .......................... Assistant in Chemistry
C. D. LEARN, B.S., M.A. .......................... Assistant in Botany
DAVID W. ROBERTSON, B.S., M.S. .......................... Associate in Agronomy
L. C. KELLEHER .......................... Editor
R. A. MCGINTY, B.S., A.M. .......................... Rural Economics
L. A. MOORHOUSE, B.S.A., M.S. .......................... Rural Economics
R. T. BURDICK, B.S., M.S. .......................... Soil Chemistry
J. C. WARD, B.S., Rocky Ford .......................... Soil Chemistry
J. W. DEMING, B.S.A. .......................... Soil Chemistry
H. R. PINGREY, B.S. .......................... Soil Chemistry
IDA WRAY PUGH, R.N. .......................... Soil Chemistry
ROSS C. THOMPSON, B.S., M.S. .......................... Soil Chemistry
DWIGHT KOONCE, B.S. .......................... Soil Chemistry
E. A. LUNGEN, B.S., M.S. .......................... Soil Chemistry
CHARLES F. ROGERS, A.B., M.S. .......................... Soil Chemistry
ANNA M. LUTE, A.B., B.Sc. .......................... Soil Chemistry
E. L. LECLERG, B.S., M.S. .......................... Seed Analyst
HERBERT C. HANSON, A.B., A.M., Ph.D. .......................... Seed Analyst
ARTHUR D. MOINAT, B.S., M.S. .......................... Seed Analyst
CARL METZGER, B.S., M.S. .......................... Seed Analyst
MARJORIE J. PETERSON, B.A., M.S. .......................... Seed Analyst
FREDERICK B. SMITH, B.S.A., M.S., Ph.D. .......................... Seed Analyst
RICHARD D. LOTT, B.S., M.S. .......................... Seed Analyst

ENGINEERING DIVISION
L. D. CRAIN, B.M.E., M.M.E., Chairman .......................... Mechanical Engineering
E. B. HOUSE, B.S., (E.E.) M.S. .......................... Civil Engineering
O. V. ADAMS, B.S., M.S. .......................... Associate in Civil Engineering
G. A. CUMMINGS, B.S. .......................... Assistant in Mechanical Engineering

*On leave, 1926-1927.
Harvesting and Marketing

CANTALOUPES AND HONEY DEW MELONS

IN THE

Arkansas Valley of Colorado
Seasons of 1924 and 1925

BY N. D. SANBORN

COLORADO DIRECTOR OF MARKETS

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

Co-operating with
THE DEPARTMENT OF ECONOMICS AND SOCIOLOGY
COLORADO EXPERIMENT STATION
THE ARKANSAS VALLEY MELON DISTRICT SHIPPING POINTS. SEASONS 1924–1925.

Fig. 1 — Six miles. —— Railways. ——— Rivers. ••••• Major Shipping Points.
••••• Minor Shipping Points.
CONTENTS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early History of District</td>
<td>7</td>
</tr>
<tr>
<td>Types of Melons Grown</td>
<td>9</td>
</tr>
<tr>
<td>Acreage According to Varieties</td>
<td>10</td>
</tr>
<tr>
<td>Planted Acreage by Districts and Loading Points</td>
<td>11</td>
</tr>
<tr>
<td>Marketing Methods and Practices—Cantaloupes</td>
<td>12</td>
</tr>
<tr>
<td>Marketing Methods and Practices—Honey Dew Melons</td>
<td>20</td>
</tr>
<tr>
<td>Materials Used in Marketing Melons</td>
<td>24</td>
</tr>
<tr>
<td>Standardization and Inspection</td>
<td>25</td>
</tr>
<tr>
<td>Containers</td>
<td>26</td>
</tr>
<tr>
<td>Condition of Crop</td>
<td>29</td>
</tr>
<tr>
<td>Growing Season</td>
<td>29</td>
</tr>
<tr>
<td>Inspection Work</td>
<td>34</td>
</tr>
<tr>
<td>Inspection of Cantaloupes</td>
<td>37</td>
</tr>
<tr>
<td>Inspection of Honey Dew Melons</td>
<td>40</td>
</tr>
<tr>
<td>Summary of Inspection Work</td>
<td>42</td>
</tr>
<tr>
<td>Shippers’ Business in Marketing</td>
<td>43</td>
</tr>
<tr>
<td>Shippers’ Operations</td>
<td>46</td>
</tr>
<tr>
<td>Cost of Harvesting and Marketing Cantaloupes</td>
<td>51</td>
</tr>
<tr>
<td>Cost of Harvesting and Marketing Honey Dew Melons</td>
<td>55</td>
</tr>
<tr>
<td>Summary</td>
<td>58</td>
</tr>
<tr>
<td>Acknowledgment</td>
<td>59</td>
</tr>
</tbody>
</table>
PREFACE

The development of the cantaloupe industry, to the birth of which this district can justly lay claim, has progressed rapidly and witnessed many changes and improvements in the past few years.

As well as being the first, and continuing to be one of the leading cantaloupe-producing states, Colorado may also lay claim to originating the containers used at present, practically all the principal commercial varieties and, largely, the harvesting and marketing methods and practices followed throughout the country.

Recent years have witnessed keener competition and necessitated more careful attention to quantity production and quality shipment in order to endeavor to recover and maintain the reputation of the district as a producer of good melons.

The purpose of this report is to show the harvesting, standardization and inspection and marketing methods and practices followed in the district, the average per acre and per crate of the cost to the grower of harvesting and marketing, and the average returns realized for the 1924 and 1925 crops.
EARLY HISTORY OF THE DISTRICT

The first melons of which there is any record were grown in the Rocky Ford District of Colorado in 1884, and muskmelons of unknown types are known to have been grown by the first settlers of the Arkansas River Valley. The first melons destined to be of commercial value were of the Netted Gem variety, and seed selected from this stock marked the beginning of the production of cantaloupes in this district in commercial quantities.

Cantaloupes grown in 1885 were nearly all shipped to Leadville, Colorado, which was then a prosperous mining town, and sold there for ten cents per pound, the equivalent of six dollars and fifty cents per crate. In the early years of commercial production in Colorado, all types of containers were used, including boxes, barrels, baskets, etc., and the empties were returned to the shipper. During this period the large holdings of irrigated land in the valley became subdivided into smaller tracts suitable for more intensive crops, such as cantaloupes and sugar beets. Subsequently, this decrease in the average land holdings, coupled with the gratifying returns from L. C. L. cantaloupe shipments increased the production of cantaloupes to a point where it was necessary that additional markets be developed. One of the first evidences of this temporary over-production was the lack of boxes and barrels in which to pack the melons for shipment. Necessity became the mother of invention, and a crude crate evolved from twelve-inch sections of twelve-inch boards, and one-half length of ordinary building lath serving as side pieces. As this container happened to contain forty-five melons of average size, the future standard grade was thus arbitrarily determined.

In 1894 the first effort in cooperative marketing was made when groups of growers combined to load ventilated freight cars. These cars were consigned to commission men in various cities, who remitted direct to the individual consignors making up the car.

In 1896 the growers were supplied for the first time with regular crates by the lumber companies. These crates were of the same dimensions as the first one made, and were essentially the same as those in present use.
Until 1896 all the cantaloupes received in the valley were consigned to Colorado commission men, but during that year a few cars were shipped to Kansas City and St. Louis, opening up a new territory and offering a solution for the seasonal glut of Colorado markets. In the fall of this year the Rocky Ford Melon Growers Association was organized and included in its ranks practically all of the cantaloupe growers of Otero County. The first season following the organization of the association, a contract was made with the Western Poultry and Game Company of St. Louis, who agreed to handle thirty-five cars of Rocky Ford cantaloupes at seventy-five cents per crate, f.o.b. Rocky Ford. Cantaloupes sold so well that year in the Eastern markets that this firm handled one hundred and twenty-one cars before the season was over, and for once in the history of the cantaloupe industry the returns were satisfactory to all concerned.

In 1898 this same company proposed to contract the entire output of the valley at ninety-seven and one-half cents per crate, and the offer was received with enthusiasm. Under the stimulus of the contract prices and the excellent returns of the preceding season, the membership of the association increased to over eight hundred members, and the acreage to over five thousand in Otero County alone. By the first of September with one hundred and fifty cars rolling to market it was realized that the markets would be glutted, and the contract price, with the consent of the growers, was lowered to seventy-five cents per crate. In New York City alone over one hundred cars were dumped. The freight charges, amounting to many thousands of dollars, remained unpaid. Altho the Atchison, Topeka and Santa Fe railroad cancelled the freight due them, the St. Louis company was unable to meet its obligations, and the season ended disastrously.

To two causes may be laid the heavy losses of 1898: first, refrigeration, and, second and more important, market experience and facilities had not kept pace with the rapidly increasing production. After the severe blow dealt the association by the result of the 1898 season, smaller organizations were formed with a federated group of representatives from every association constituting a general marketing committee. At Rocky Ford, the Kouns party was organized, their plan being to ship exclusively on commission, principally thru H. Woods, located at Chicago, with each car treated as a unit or pool, and the returns pro-rated among the growers shipping in the car. The Rocky Ford Association and those federated with it resorted also to a commission basis, shipping thru the joint firm of Lyons and Codgins of New York City and Pittsburgh, the main difference being that in the federated associations the returns were pro-rated at first in daily pools and later in the season in weekly pools instead of by the car as in the Kouns party. This pro-
rata system by pooling rather than by cars is still in use in a somewhat modified form, the principal change being in the number of days that the pool covers.

For the next five years, 1899-1903, the average prices paid to the growers per crate increased, averaging almost one dollar per crate for the period. These profitable returns, together with keen competition among the commission firms represented in the territory, led to more extensive planning; hence new agents who had little experience in handling this commodity, appeared in the deal, and subsequently, shipments of melons fell far below the quality of the preceding years. There logically followed the nearly complete failure of 1904 thru adverse marketing conditions and the subsequent reduction of acreage for several years following.

From then on to the present time, the early history of the cantaloupe industry has but repeated itself. There have been good years and bad years, both in quantity and returns. New firms have operated a short time and left, sometimes to the growers' loss. During this period the development of the cash-advance system was also started by the distributors to assist the growers in caring for and harvesting their crops.

Constant efforts have been made by the local seed firms and between the distributors operating in the territory to improve the leading commercial varieties. The old Netted Gem (green meats), which made Rocky Ford famous in the early days, has been succeeded by the Pollack 10-25 (salmon tint) and the Burrell Gem (pink meats) which seem more agreeable to the aesthetic taste of the city consumer. Some profess to see the writing on the wall for the Pollack 10-25, and name the Hale's Best or a new strain of the pink-meat type as a logical successor.

The seed business of the valley has increased by leaps and bounds until it is now estimated that 160,000 to 170,000 pounds of cantaloupe seed will be cut to supply the demand. It has been proved by experience that Colorado-grown seeds will produce, in most sections of the United States, stock that is more uniform in size, appearance, texture and flavor, so that little effort is now made to produce cantaloupe seed elsewhere.

**TYPES OF MELONS GROWN**

The cantaloupe is still the most extensively grown melon in the district and constitutes approximately eighty percent of the acreage. The past three years have seen a material increase in the Honey Dew melon, advancing from a comparatively small acreage in 1922 to close to twenty percent of the commercial acreage during the 1924 and 1925 seasons. A small acreage of watermelons, casabas, winter watermelons and other miscellan-
eous melons and muskmelons is also grown. A few acres of Honey Ball melons were grown and shipped from the district for the first time during the 1925 season. This type promises to become of more importance hereafter.

Following are the principal varieties of cantaloupes grown for commercial purposes and the color of the flesh of each:

<table>
<thead>
<tr>
<th>Variety</th>
<th>Color of Flesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollack 10-25</td>
<td>Salmon Tint</td>
</tr>
<tr>
<td>Burrell Gem</td>
<td>Pink Meat</td>
</tr>
<tr>
<td>Heart of Gold</td>
<td>Pink Meat</td>
</tr>
<tr>
<td>Edward's Perfect</td>
<td>Green Meat</td>
</tr>
<tr>
<td>*Netted Gem</td>
<td>Pink Meat</td>
</tr>
<tr>
<td>Hale's Best</td>
<td></td>
</tr>
</tbody>
</table>

Hale's Best is a new melon and was grown commercially in the district for the first time in 1925. This melon is of the pink-meat or orange-flesh type. It proved to be popular with the trade, both at the shipping and receiving points, as have other new melons of this color flesh. It promises to increase in importance and perhaps replace to some extent the acreage now planted to the more pale-fleshed varieties.

The Pollack 10-25 or salmon-tint variety, it is estimated, still comprises about forty-five percent of the eighty percent of acreage allotted to production of cantaloupes. This is a decrease of approximately fifteen percent over that of the preceding year. The pink-meat type of melons comprises about forty percent of the acreage, while the remaining twenty percent consists principally of the Honey Dew melon. The percentage of the different varieties varies with the locality. In the Rocky Ford district the salmon-tint predominates with the pink-meat types second in importance. The principal portion of the Honey Dew crop is also produced in this locality.

Following is shown the planted acreage and the percentage of the acreage devoted to each type of melon for the seasons of 1924 and 1925 on both the Rocky Ford and Ordway districts:

<table>
<thead>
<tr>
<th>ACREAGE ACCORDING TO VARIETIES—SEASON 1925</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROCKY FORD DISTRICT</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>Total Average Acreage</td>
</tr>
<tr>
<td>Percent 1925</td>
</tr>
<tr>
<td>Percent 1924</td>
</tr>
</tbody>
</table>

Note: For the 1924 season all miscellaneous varieties were classified salmon tints and probably did not amount to over one-half the 1925 total.

*The Netted Gem of the green-meated variety is the original Rocky Ford cantaloupe, but is no longer grown to an extent to be of commercial importance.
The preceding figures show a material decrease in acreage of melons of the salmon-tint variety on the Rocky Ford side and an increase in that of the pink-meat type. The acreage devoted to Honey Dew melons remained about the same. As may be noted, the Ordway district shows some decrease in the cantaloupe acreage and an increase in that planted to Honey Dew melons.

The planted acreage for the valley followed the history of past good years and showed an increase in 1925 over that of the 1924 acreage.

Due, however, to the marked difference in the two growing seasons, the harvested acreage for the two years was about the same. There was practically no loss in acreage during the 1924 season, while during the 1925 season, hail, excessive moisture, rust, aphids and drought all contributed to the loss to the planted acreage.

Following is shown the 1925 acreage by district and by loading points, also the estimated acreage lost, due to various reasons:

Planted Acreage by Districts—1925

<table>
<thead>
<tr>
<th>Rocky Ford District—</th>
<th>Ordway District—</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avondale .......... 295 acres</td>
<td>Croft ............ 263 acres</td>
</tr>
<tr>
<td>Vroman ............ 327</td>
<td>Crowley ............ 558</td>
</tr>
<tr>
<td>Fayette ............ 417</td>
<td>King Center .......... 350</td>
</tr>
<tr>
<td>Hawley ............ 588</td>
<td>Numa ............. 850</td>
</tr>
<tr>
<td>Rocky Ford .......... 457</td>
<td>Olney Springs ......... 370</td>
</tr>
<tr>
<td>Roberta .......... 455</td>
<td>Ordway ............ 260</td>
</tr>
<tr>
<td>Manzanola .......... 213</td>
<td>Miscellaneous .......... 135</td>
</tr>
<tr>
<td>Swink .......... 1,026</td>
<td></td>
</tr>
<tr>
<td>Cheraw and Randell .... 248</td>
<td></td>
</tr>
<tr>
<td>Fort Lyons .......... 1,141</td>
<td></td>
</tr>
<tr>
<td>Hawley and La Junta . 1,127</td>
<td></td>
</tr>
<tr>
<td>6,464 acres</td>
<td>Valley Total .......... 9,350 acres</td>
</tr>
</tbody>
</table>

Loss in Acreage—

| Rocky Ford District .......... 1,300 acres |
| Ordway District .......... 475 |
| Total Loss .......... 1,775 acres |
| 1,775 acres |

1925 Estimated Harvested Acreage ........................................... 7,575 acres

Following are figures issued by the United States Department of Agriculture covering the acreage, production per acre in standard crates and carlot shipments of melons from Colorado for the seasons 1920 to 1925, inclusive:
The above figures include 40 carlots which originated on the Western Slope of Colorado during the 1924 season and 16 carlots during the 1925 season.

MARKETING METHODS AND PRACTICES—CANTALOUPE Growers' Operations

The growers' part in the marketing of cantaloupes varies but little and includes all the operations from harvesting to delivering the melons to the cash buyer, distributor, or other marketing agency. Much responsibility rests upon the grower for the proper performance of this work. Careful attention to the picking, handling and packing are very necessary for success in the cantaloupe industry. The presence of poor fruit on the market weakens the confidence of the consuming public and affects the sale of good stock.

Labor Problem.—In harvesting and handling cantaloupes, as with other fruits, the labor situation is an important factor. The securing of experienced labor is always desirable. The influx of professional labor into the district during the melon season has decreased in recent years, due to the rapid growth of the fruit and vegetable industry in other states. This necessitates using much inexperienced labor, particularly in picking. Most of this work is performed by Mexicans who come into the district primarily as beet workers. The beet work is usually slack at this time and many of the workers are available for labor during the melon season.

The growers or contractors who employ large crews during the harvest season often provide quarters and other accommodations for the workers. Those who best provide for the needs and comfort of the laborers are least concerned with a restless, changing crew.

Individual Operations.—Some growers prefer to perform the various operations involved in the marketing of the crop with a crew hired by the day or hour. Often in cases of small acreage, very little labor in addition to that regularly employed on the farm is required. Even with a large acreage, some growers con-
sider it more economical to do the work themselves with a crew of their own selection. Under this arrangement, the grower, being entirely responsible for the proper performance of the work, can, thru close supervision, often prevent much unnecessary loss due to the mistakes of those employed in the harvesting. Other growers contract part of the work, but perform the other operations with day labor.

Contracted Operations.—The greater part of the cantaloupe-marketing work is performed under contract. The grower thus places the responsibility for the securing of a crew and the proper performing of the work upon the contractor. The agreement between the grower and his labor is generally written with the particulars likely to vary to some extent with the different localities and individuals. Contracted work is paid for at so much a packed crate, the rate depending upon the operations included in the contract. The agreement usually provides that any repacking is to be done at the expense of the contractor. Thus it is to his advantage to give particular attention to the selection of the crew and to the careful supervision of its work.

The operations performed either individually or under contract are essentially the same, and there is little variation throughout the valley in the methods and practices followed. The general practice is to contract under the headings of "field work" and "shed work." Hauling the packed crates to the loading station may also be contracted, but it is more commonly performed by the grower with his own labor and equipment.

The following are the labor contracts and the operations generally included in each:

Field-Work Contracts:
- Opening fields
- Scattering field crates
- Picking
- Hauling to packing shed

Shed-Work Contracts:
- Making crates
- Sorting and packing
- Lidding of crates

Hauling to Loading Station.

Opening of the Fields.—This is the first operation performed by most growers in the marketing of the cantaloupe crop, and consists of laying back the vines from the space between the rows. This prevents considerable injury to the vines and fruit which might be done in performing the field work. Some growers consider the damage done by team and wagon in hauling unimportant and do not perform this first operation.
Scattering Field Crates.—It is the practice of most growers to scatter field crates previous to the first picking. The operation involves the distribution of a number of crates throughout the field convenient for use by the pickers in emptying their picking bags. After the initial distribution, the supply of field crates is maintained by taking back a supply of crates each trip from the packing shed to the field.

In some instances field crates are not used and the melons are emptied from the picking bags into piles in the field. This is rather the exception, however, as it necessitates the re-handling of the melons in hauling to the packing shed, incurring extra work and added possibility of injury to the melons.

Importance of Picking.—The picking of the melons receives a great deal of attention and it should because of the economic importance. The grower, contractor and shipper are all concerned in the proper performance of this work because of the bearing it has upon the affairs of each. Picking of inferior melons results in the greatest loss to the grower, inasmuch as it means the loss of a part of his crop. The contractor loses the time spent in picking such unmarketable stock and the time required to sort out the inferior stock when packing. If undesirable stock is packed, it is likely to be rejected when hauled to the loading station, making re-packing necessary. The shipper can ill afford to handle poor stock, both from the standpoint of the market value of the product and the injury that may result to his reputation as a shipper.

Supervision of Picking.—The first consideration of the grower in harvesting his crop, or the contractor in assuming this re-
sponsibility, is that of securing an experienced man who is well acquainted with the conditions to oversee the picking. The pickers are in most cases Mexicans and many of them inexperienced, which makes careful supervision very necessary if loss from improper picking is to be avoided. Usually a picking boss is employed who works with his pickers, instructing the inexperienced and correcting mistakes as quickly as possible. He is usually of the same nationality as the pickers and prevents much loss in picking thru his knowledge of melons and his ability to manage men. He instructs them as to the kind of fruit he wants picked and sees that they follow his instructions. Since conditions such as temperature and moisture which affect the ripening of the melons, may change overnight, it is essential, if loss is to be avoided, that the picking boss be intimately acquainted with the effect of these changes on the maturity of the crop in order that he may determine the effect of the changes and instruct his men promptly and intelligently.

**Time of Picking.**—The melons must be picked at that stage of maturity which will insure the best carrying qualities possible. They should reach the market as nearly right for consumption as possible and still be firm enough to handle thru the ordinary channels of trade.

At the beginning of the season the melons are picked every two or three days with similar intervals at the close of the season. During the main harvesting season the fields are picked over every day. Picking is usually done early in the day to insure ample time for packing and delivery at the loading station. Weather conditions determine, to a great extent, the regularity with which picking may be done. Rainy weather, cloudy days, cool nights, or damaged vines retard the normal ripening of the melons, making necessary a change in the regularity of the time of picking.

**Equipment.**—The pickers are supplied with picking bags and usually supply themselves with short T-sticks for parting the foliage. (Figure 2.) The use of the stick saves much stooping, especially in picking the first crop, or crown-set melons, which, because of the heavy foliage, are difficult to see. Aging of the vines and numerous pickings thin out the foliage considerably, making the picking of the latter part of the crown-set and the second set less difficult in this respect. The picking bags are slung over the shoulder by means of a strap, with the mouth of the bag beneath the arm. These bags are of heavy cotton material capable of withstanding the hard use given them. The bags are provided with an opening at the bottom for convenience in emptying the melons into the field crates.
Work of the Pickers.—The pickers generally work in crews, each picker taking a row at a time, picking all the desirable fruit as he comes to it. Care is taken that no rows are skipped and that immature, over-ripe, or otherwise defective melons are not picked. Careful selection by the pickers prevents loss to the grower and saves much sorting at the packing shed.

Hauling to the Packing Shed.—This is done as soon as possible after the melons are picked. Cantaloupes, being highly perishable, will show a marked change in maturity, firmness and color if exposed to the elements for any length of time. Hauling, to be satisfactory, must be performed in a systematic manner, providing sufficient melons to keep the packers busy at all times without undue haste or rough handling of the melons.

Various types of wagons are used for this work. The more convenient type has a low, flat bed to facilitate loading and unloading. Beet racks with sides removed and hay racks are the more generally used, tho spring wagons are desirable if available, as this type causes less jarring of the melons. The wagons are loaded with but a single layer of crates to prevent bruising the melons in hauling.

Shed work, as mentioned, includes the making of crates, packing the melons, and lidding the crates after packing.

Making the Crates.—Crates are made as needed, at a point convenient to the packing shed. In this district a large supply of crates is seldom made ahead of the immediate need, as there are usually several rains during the season which would damage the crates. The crates swell when wet, causing the nails to
loosen and the crate material to warp as it dries, with the re-
sult that the crates come apart easily, making it difficult to
secure a tight, neat pack.

The work of making crates is performed in most cases at
so much per crate or per hundred, under contract. The con-
tractor is responsible for this work and arranges for making the
crates as needed. An experienced crate maker constructs from
four to six hundred standards or from seven hundred to a thou-
sand flats per day, while the average and that of inexperienced
help is considerably less. When the crates are completed they
are stacked by the nailer, convenient for use by the packers.

**The Packing Shed.**—(Figure 3.) The packing sheds thruout
the district are but temporary structures. They are constructed
of old lumber, poles, canvas, or any material which will afford
protection from the elements. Every grower has his own, usu-
ally located convenient to the fields. The cantaloupes are grown
in most cases as a part of the farm rotation and not as the
major crop. The acreage in most cases is small and does not
justify the construction and upkeep of large, permanent pack-
ing sheds.

**Equipment of the Packing Shed.**—(Figure 4.) The equip-
ment is usually of one type of construction. It consists of a
sorting and packing bin, a packing bench for placing the crates
while packing, and a lidding bench upon which the packed crates
are placed for nailing on the lids. The packing and sorting bin
is of convenient height and slopes toward the packer, permit-
ting the melons to roll within reach, and it is long enough to
accommodate the number of packers needed. The packing
bench is also of convenient height with surface spaced to ac-
commodate crate and wrapping paper. This equipment is all
of home construction, is inexpensive and serves the purpose very
well.

**Sorting and Packing.**—Much of the packing is done by pro-
fessional help which follows the melon work thru from California,
Arizona and New Mexico. Part of this work is done by local
labor and the grower or his family frequently handles this op-
eration. Local labor is often the more desirable, being easier
to handle and more responsible.

Selection of the fruit for maturity and freedom from objec-
tional blemishes is given first consideration. Much of this work
is done by the pickers in the field. In some instances a sorter is
employed to help cull out the undesirable stock at the bin. Fi-
nally, however, it remains for the packer himself to see that the
melons he places in the crate have been properly sorted.

Selection for size is done by the packer. He is responsible
for the selection of the proper size for the different packs. Uni-
formity in this respect is important if a tight, attractive pack is to be secured. The common fault is too loose a pack, which permits the melons to shake about in the crate when handling and hauling. The other extreme is a pack with too much bulge, which is likely to cause injury to the melons.

Wrapping is performed by the packer. The Burell Gem variety of the pink-meat type is the only melon which is wrapped. This is done more for the improvement in the appearance than for any protection to the melon.
The top slats are nailed as rapidly as the crates are packed. They are then placed on wagons or trucks for hauling to the loading station, or stacked at the shed to be hauled later.

**Hauling to the Loading Station.**—(Figures 5, 6 and 7.) Trucks and various types of wagons are used for this purpose. Trucks are the more desirable as the springs prevent much violent jolting and jarring which tends to loosen the pack and
bruise the fruit. Spring-type wagons are also good for this purpose, but for the most part hauling is done on beet racks with the sideboards removed, and on hay racks. The cost of hauling by truck is about the same as by wagon, but it is much more rapid and satisfactory. It is usually provided in the contract between the grower and the shipper that the melons are to be hauled on spring-bed vehicles, but this is not always possible and in many cases not observed. In hauling, the crates should be loaded on the side and not on the bulge in order to prevent considerable injury to the melons which may result from improper loading. Hauling, when contracted, is performed at so much a crate, depending upon the length of haul and the size of the crate.

MARKETING METHODS AND PRACTICES—HONEY DEWS
Growers' Operations

The operations performed are very nearly the same in marketing Honey Dews and cantaloupes. The chief difference occurs in the field operations and the manner of packing. Some of this work is contracted as “field work” or “shed work” and handled by the same crew that has been doing the cantaloupe work. Many growers have a very small acreage and prefer to do the work themselves with such additional labor as may be needed. The main part of this crop ripening rather late, after the bulk of the cantaloupe harvest is over, makes it convenient and usually economical for the grower to handle the greater part of this work individually.

The following are the operations involved in marketing

Fig. 8.—Field of Honey Dew Melons Before Picking
Honey Dew melons and the manner in which they are usually grouped when contracted:

Field-Work Contract:
- Picking
- Hauling to Packing Shed

Shed-Work Contract:
- Making Crates
- Sorting and Packing
- Lidding
- Hauling to Loading Station

Picking.—The fields may be picked over from one to three times, depending upon the regularity with which the crop ripens. An early, light picking is often advisable in order to avoid loss thru some melons becoming too ripe. The general practice is to pull the melons from the vines and pile them in the field. (Figure 9.) In some instances picking is done directly into the wagon for immediate hauling to the packing shed. Later in the season the piles of melons are often covered with vines to protect them from freezing injury until they can be hauled and packed. The more recent and more desirable practice among the better growers is to allow the melons to remain on the vine until fully matured instead of picking many of them while still immature and allowing them to remain piled in the field to take on color similar to a properly matured melon.

Hauling to the Loading Station.—(Figures 5, 6 and 7.) bulk in low-bed wagons provided with from one- to two-foot
sideboards. Padding of hay or straw is often used to advantage to prevent bruising the melons while hauling from the field to the packing shed.

**Making Crates.**—(Figure 11.) The shuck is made up into crates the same as for cantaloupes and is usually contracted and paid for by the piece.

**Sorting and Packing.**—(Figure 12.) Much small, immature, or otherwise defective stock is left on the vines by the pickers. The packers sort for size and cull out any undesirable stock as they pack. In packing it is important that careful selection
for size be made and that the crates be sufficiently padded. (Figures 12 and 13.) Excelsior and straw are used for this purpose. Excelsior is the more generally used and experience has proved it to be more satisfactory. The size of the melon should be such that it will just reach the top slat without causing any perceptible bulge. The melons are easily bruised. Therefore a slack pack permitting them to shake about in the crate, or too tight a pack, is likely to result in either case in considerable damage to the melons, as well as detract from the appearance
of the pack. In some instances small melons are packed in flat cantaloupe crates without excelsior. This practice was not followed to any extent during the 1924 season, but during the 1925 season there seemed to be more of a demand for small Honey Dew melons, resulting in rather extensive use of the jumbo-flat cantaloupe crate for these melons.

Lidding.—This consists of nailing on the top slats. The nailer also adds cleats to the ends of the crate, if it is necessary to raise the top slats to prevent bruising the melons.

Hauling to the Loading Station.—This is done with various types of wagons and trucks. Spring-bed wagons or trucks are preferable. The crates should be loaded right-side-up and not on the side, as with cantaloupes.

MATERIALS USED IN MARKETING MELONS

The materials required by the grower in marketing his crop are usually supplied by the distributors. By making a careful check of his contracted acreage, the shipper can estimate very closely the needs of growers for the season. The materials are supplied the growers practically at cost. Independent growers may order materials thru the shippers or place orders with the local business houses or with individuals who ship in the materials to supply their needs. Sometimes the shipper has an oversupply of materials which he disposes of to the independent growers rather than hold until the next season.

Cantaloupe-Packing Supplies.—Following are the materials used by the growers and the usual cost to the grower, of each item:

<table>
<thead>
<tr>
<th>Materials</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Crate</td>
<td>$0.18 each</td>
</tr>
<tr>
<td>Pony Crate</td>
<td>.18 &quot;</td>
</tr>
<tr>
<td>Jumbo Standard</td>
<td>.11 &quot;</td>
</tr>
<tr>
<td>Standard Flat</td>
<td>.18 &quot;</td>
</tr>
<tr>
<td>Pony Flat</td>
<td>.11 &quot;</td>
</tr>
<tr>
<td>Jumbo Flat</td>
<td>.12 &quot;</td>
</tr>
<tr>
<td>Nails</td>
<td>5.25 per keg</td>
</tr>
<tr>
<td>Extra Slats</td>
<td>.01 each</td>
</tr>
<tr>
<td>Small Wraps</td>
<td>1.10 per M</td>
</tr>
<tr>
<td>Large Wraps</td>
<td>1.25 “</td>
</tr>
<tr>
<td>Advertising Labels*</td>
<td>1.25 per carlot</td>
</tr>
</tbody>
</table>

Honeymew Dew Packing Supplies:

<table>
<thead>
<tr>
<th>Materials</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Crates</td>
<td>$0.18 each</td>
</tr>
<tr>
<td>Jumbo Crates</td>
<td>.18 “</td>
</tr>
<tr>
<td>Nails</td>
<td>5.25 per keg</td>
</tr>
<tr>
<td>Excelsior, Small Bale†</td>
<td>1.15 per bale</td>
</tr>
<tr>
<td>Excelsior, Large Bale†</td>
<td>2.25 per bale</td>
</tr>
</tbody>
</table>

These figures are the prices to the grower for materials secured thru the distributors. Most of the supplies used are obtained in this manner, so the prices listed apply to most growers.

*In most cases the advertising labels are supplied by the shippers without extra expense to the grower.
†The large bales will pack approximately ninety crates and the small bales forty-five.
Shippers’ Materials

The shippers or distributors furnish all materials and equipment for the proper loading of the melons. The advertising labels are furnished by the shipper and applied to the crates at his expense, but in some instances, provision is made in the contract whereby the grower is charged so much per car for the use of these labels.

Platform Equipment.—This consists of roller skids for unloading the melons from the trucks or wagons on the platforms, and hand trucks for transferring the crates into the cars when loading.

Loading Materials.—Stripping is used between the layers of crates to prevent bruising the melons and heavy bracing is placed between the doors to prevent shifting of the load. All lumber and nails for this purpose are furnished by the shipper.

STANDARDIZATION AND INSPECTION

Care in grading and packing have an important bearing upon successful marketing. In the past years a large number of shipments from this district was received on the consuming markets, which because of immaturity or improper methods of grading and handling were sold at a loss to the growers and shippers. During the seasons of 1924 and 1925, special effort was made by all responsible shippers and conscientious growers to ship only marketable produce. The quality of the melons during the 1924 season was exceptionally good. This combined with splendid co-operation on the part of the shippers and growers with the state and federal inspection forces, resulted in very little undesirable fruit being shipped and, as a consequence, in a fairly profitable season to all concerned both in price and in re-establishment of the reputation of the district as a producer of good melons.

During the 1925 season the quality of the melons as a whole was not so good as the preceding season, but the quality in some localities was above the average. The same effort was made by the leading factors in the deal to maintain the high standard of the preceding season. This was difficult to do, due to the general lack of fine quality of the melons and the practices followed by some of the less responsible and less progressive growers and members of the trade. During a season of poorer quality there seems to be a tendency on the part of many to ship the entire crop regardless of the impending unprofitable market outlook and the unfavorable reputation established for the quality of the fruit shipped from the district.
Containers.—Standard containers are used in the district. These crates, while generally first originating in Colorado, are now used the country over and meet the favor of the members of the trade and the consuming public.

Following are the packages used, the dimensions and the number of melons that may be packed in each:

**Cantaloupe Containers:**

<table>
<thead>
<tr>
<th>Crate Name</th>
<th>Dimensions (inches)</th>
<th>Usual Number of Melons Packed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>12 x 12 x 23½</td>
<td>36-45-54</td>
</tr>
<tr>
<td>Pony Standard</td>
<td>11 x 11 x 23½</td>
<td>45-54</td>
</tr>
<tr>
<td>Jumbo Standard</td>
<td>13 x 13 x 23½</td>
<td>27-36-45</td>
</tr>
<tr>
<td>Standard Flat</td>
<td>4½ x 13 x 23½</td>
<td>9-11-12-15</td>
</tr>
<tr>
<td>Pony Flat</td>
<td>4 x 12 x 23½</td>
<td>12-15-18</td>
</tr>
<tr>
<td>Jumbo Flat</td>
<td>5 x 14½ x 23½</td>
<td>6-8-9-12-15</td>
</tr>
</tbody>
</table>

Length of crate is given as length of slat. Inside measurement of length of crate is 22½ inches.

**Most Popular Crates.**—The flat crate is used extensively in Colorado. Nearly all the pink-meat type cantaloupes are shipped in flats, the jumbo 9's and 12's and the standard flat 12-count being the more popular packages, when the average size of the crop warrants, with the standard flat of 15-count and the 15 and 18-count pony flats of secondary importance.

The salmon-tint cantaloupe moves heavily in the standard crates, both 36 and 45-count, and standard flat 12 and 15-count.

The jumbo crate and jumbo flat are also employed to some extent for this variety.

Unless market conditions are good, the distributors discourage the use of all pony containers. During the latter part of the 1925 season, a large number of pony containers, both crates and flats, were used. This is rather the exception, however, as comparatively few crates of these sizes have been used in the district for several years.

**Honey Dew Containers:**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Inside Dimensions (inches)</th>
<th>No. of Melons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Crate</td>
<td>6¼ x 16¼ x 22½</td>
<td>5 to 12</td>
</tr>
<tr>
<td>Jumbo Crate</td>
<td>7¼ x 16¼ x 22½</td>
<td>5 to 12</td>
</tr>
</tbody>
</table>

Both crates have an outside length of 23¼ inches.

As previously stated, the flat crate is used extensively in Colorado. The percentage of flat crates used is governed considerably by the variety of melons grown. The Burrell Gem or pink-meat-type melons are shipped entirely in flats, as also, to a large extent, are other varieties of melons of the pink-meat type. The Ordway district, where practically all cantaloupes grown are of the pink-meat type, uses the flat crates almost entirely.

Following is shown the percentage of each size of crate used for shipping both cantaloupes and Honey Dew melons in both the Rocky Ford and Ordway districts for the 1924 and 1925 seasons:
### Percentage of Each Kind of Crate Used

#### CANTALOUE CRATES

<table>
<thead>
<tr>
<th>Container</th>
<th>Rocky Ford Side</th>
<th>Ordway Side</th>
<th>Rocky Ford Side</th>
<th>Ordway Side</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1924</td>
<td>1925</td>
<td>1924</td>
<td>1925</td>
</tr>
<tr>
<td>Standard Crate</td>
<td>15.0</td>
<td>18.5</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Jumbo Standard Crate</td>
<td>4.0</td>
<td>3.0</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Pony Standard Crate</td>
<td>...</td>
<td>1.0</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Standard Flat</td>
<td>60.0</td>
<td>63.0</td>
<td>56.0</td>
<td>58.5</td>
</tr>
<tr>
<td>Jumbo Flat</td>
<td>21.0</td>
<td>12.5</td>
<td>44.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Pony Flat</td>
<td>...</td>
<td>2.0</td>
<td>...</td>
<td>11.5</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

#### HONEY DEW CRATES

<table>
<thead>
<tr>
<th>Container</th>
<th>Rocky Ford Side</th>
<th>Ordway Side</th>
<th>Rocky Ford Side</th>
<th>Ordway Side</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1924</td>
<td>1925</td>
<td>1924</td>
<td>1925</td>
</tr>
<tr>
<td>Standard</td>
<td>66.0</td>
<td>45.0</td>
<td>68.0</td>
<td>60.0</td>
</tr>
<tr>
<td>Jumbo</td>
<td>32.0</td>
<td>12.0</td>
<td>30.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Special (12 pack)</td>
<td>2.0</td>
<td>18.0</td>
<td>2.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Jumbo Flats</td>
<td>...</td>
<td>25.0</td>
<td>...</td>
<td>29.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The preceding figures permit a comparison of the percentage of each kind of crate used in each of the two districts for the two years. As may be noted, there were practically no pony-sized crates used during the 1924 season. The percentage of Honey Dew crates also ran more to the larger sizes with very few jumbo cantaloupe crates being packed with Honey Dew melons, as was evident during the 1925 season.

The following figures taken from deliveries furnished by shippers and growers permit comparison for the two seasons of the percentage of each kind of crate used for all kinds of melons shipped from the Arkansas Valley.
The size of the melons regulates the number packed in each size of crate. Five to nine melons to the crate is the general pack with 12's only in evidence when there is a scarcity of preferred sizes or market conditions are good. During the 1924 season, some 12's were shipped, but packing of the size was discouraged by the shippers due to the fact that the returns were unsatisfactory.

During the 1925 season, in addition to many 12 sizes, a large number of Jumbo and some standard flat cantaloupe crates were packed with Honey Dew melons. These crates were packed without excelsior and presented rather an attractive pack and apparently marketed quite readily.

As a matter of information is should be noted here that there is a variation of one-half inch in the inside dimensions of the standard flat cantaloupe crate used in Colorado from that of the flat used in California. This 13-inch flat is commonly used in Colorado, Arizona, New Mexico and Texas where cantaloupes of the Burrell Gem or pink-meat type are raised in heavy volume, the reason lying in the elliptical shape of the melon, thus requiring a slightly narrower container in order that a tight pack may be obtained.

---

### Percentage of Each Kind of Crate Used

<table>
<thead>
<tr>
<th>Container</th>
<th>1924</th>
<th>1925</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Crate</td>
<td>10.8</td>
<td>8.0</td>
</tr>
<tr>
<td>Jumbo Standard Crate</td>
<td>2.2</td>
<td>1.3</td>
</tr>
<tr>
<td>Pony Standard Crate</td>
<td>...</td>
<td>.5</td>
</tr>
<tr>
<td>Standard Flat</td>
<td>44.0</td>
<td>47.0</td>
</tr>
<tr>
<td>Jumbo Flat</td>
<td>15.5</td>
<td>15.3</td>
</tr>
<tr>
<td>Pony Flat</td>
<td>...</td>
<td>5.0</td>
</tr>
<tr>
<td>Standard Honey Dew</td>
<td>18.0</td>
<td>2.4</td>
</tr>
<tr>
<td>Jumbo Honey Dew</td>
<td>9.0</td>
<td>12.0</td>
</tr>
<tr>
<td>Specials (12 pack) in Standard Crates</td>
<td>.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Honey Dews in Jumbo Flat Crates</td>
<td>...</td>
<td>6.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Insect Injury.—Aphis injury during the 1924 season was very slight. Some fields showed slight injury over a small area usually along the edges or near other vegetation from which the aphis might spread, but as a whole the crop suffered practically no injury from this source.

Considerable damage was done by grasshoppers in some fields, the greater damage occurring along the edges of the fields, and to the earlier melons of the crown set. Much stock which had been severely eaten into was thrown away. Other melons were injured somewhat in appearance and in market value, but did not seem to be damaged seriously insofar as the carrying quality was concerned. After the early melons had been picked, little injury of this character was noted.

During the 1925 season there was less grasshopper injury noted, but many fields suffered slight, and a few fields very serious, damage from aphis. Besides blemishing the melon, the vines were badly damaged, with the result that the melons could not fully mature and, in some instances, were unmarketable.

Rust Damage.—During the 1924 season, practically no rust was in evidence. This past season, however, many fields showed slight damage, which often served to weaken the vine sufficiently to take the edge off the quality of the melon. In a number of fields the injury was sufficient to cut the yield considerably. A few fields were so badly damaged that they were practically a total loss.

Condition of the Growing Season.—The 1924 growing season was an unusually dry one with far below normal precipitation. In addition to the very light rainfall, there was also a shortage of irrigation water which somewhat reduced the yield from many fields. Such reductions in yield as may have occurred thru the shortage of water were more than compensated for in the fine quality of melons. Those who have been connected with the melon industry claim that the quality of both cantaloupes and Honey Dew melons during this season was the best that had been known for many years. This is attributed to the dry season, which seems far more favorable for the production of quality melons than were years of normal or excessive precipitation.

The season of 1923 and that of 1925 seem to bear out this assertion, as abnormally heavy rainfall was experienced during these growing seasons, with a subsequent generally poorer quality, and the occurrence of considerable damage from hail, aphis and rust.

The following chart shows the precipitation at Rocky Ford, the central production point in the valley over a period of 27 years:
Comparison of the preceding figures shows that the 1923 season was an abnormally wet one and was accompanied by very poor-quality melons. The 1924 season shows an abnormally light rainfall and, as previously stated, resulted in unusually fine-quality melons.

During the 1925 season the heaviest rainfall occurred during July, that part of the growing season immediately preceding the beginning of the shipping season. The early part of the growing season to July twentieth in southern Colorado, was judged by those interested in the deal as one of the best ever experienced. There was some lack of rain and irrigation water at planting time with the subsequent result of poor germination in some sections, but the rains of May 7, 8 and 9, with 3 3/4 to 4 inches of rainfall on the last date, relieved the temporary shortage. Contrary to the more usual occurrence, there was practically no hail, rust or aphis injury during this period.

The heavy rain of July and early August delayed the time of maturity of the crop from one to two weeks. Besides de-
laying maturity in sections where the rainfall was heaviest, the cold and poor drainage conditions caused serious injury to the melons. In a few fields the crown set of melons was nearly a total loss, due to water injury and decay, while the greater portion of the first-set melons, particularly in the territory closely surrounding Rocky Ford, where the rainfall was heaviest, may have been affected sufficiently to have some bearing on their carrying qualities.

The east end of the district near Las Animas received much less rainfall and the first carlot shipped from Colorado in 1925 was billed from Fort Lyons on August 10, compared with August 19 of the preceding year. The rainfall on the north side of Arkansas River or the Ordway district was comparatively light, and a shortage of irrigation water occurred, resulting in some loss in acreage and reduced yields in other fields. During the latter part of the season, rust and aphid also caused some damage to the crop in various sections in the valley. As previously stated, many fields were slightly affected, apparently resulting in very little damage, while in a few instances the fields were abandoned, due to one cause or another.

The principal loss, however, occurred on August 12, when a hail storm destroyed approximately 650 acres in the Fort Lyons-Kreybill district and 450 acres in the Roberta section adjacent to Rocky Ford and Swink.

Following is shown the monthly mean and annual temperature in the Arkansas Valley of Colorado over the period 1900 to 1925, inclusive. This will permit comparison of the temperature conditions prevailing during the different growing seasons:
The mean temperatures prevailing during the months of the growing and harvesting season are of chief interest, as having a bearing upon the outcome of the melon crop.

From these figures it may be noted that the temperatures during the months of July, August and September of the 1924 and 1925 seasons are considerably higher than during the same months of the 1923 season.

The length of the growing season varies from year to year. Quite often late frosts in the spring make replanting necessary and the melon crop late. Frequently early frosts in the fall cut the season short, resulting in considerable loss.
Based on the average of the preceding figures the last killing frost in spring may be expected about May 1 to 5, and the first killing frost in autumn about September 28 or 29.

Market Season.—The 1924 season opened on a firm market in the face of rather heavy shipments from other producing sections. The earlier shipments to eastern markets brought high prices of the season of $4.00 to $4.50 for the standards, and $1.50 to $1.75 for the flats. During the height of the season a slump in the market occurred, due principally to unfavorable weather conditions in the East. There were also rather heavy shipments from Delaware and Maryland with which Colorado had to compete. Later, however, the market recovered sufficiently to permit Colorado stock to bring profitable prices. Reports from the shippers' representatives in the East stated that the wonderful quality of the melons enabled them to sell at a profit when the market conditions were decidedly unfavorable. The market strengthened materially the latter part of the season, especially on Honey Dew Melons. This enabled the growers to clean up the remainder of their marketable stock at a good price. As a whole, the season was a profitable one to all concerned.

The 1925 season opened on a weak market, and the early melons brought little or no returns to the growers over the advance. Heavy shipments, mostly of rather poor quality stock from Delaware, Maryland, Minnesota and some from the Turlock
district of California, were largely responsible for the poor mar­
et. Another contributing factor is the fact that a number of
the markets in the East, North and South were being supplied
with home-grown melons.

By September the local supplies had become exhausted and
the late melons, mostly of the Burrell Gem or pink type, brought
high prices. Honey Dew melons seemed to be in demand thru­
out the season, especially the latter part, as many cantaloupe
 crates were packed with small Honey Dew melons, which is con­
trary to the usual practice.

During the first three weeks of the 1924 season, Colorado
shipped only about forty percent of the total carlot movement of
the country.

For the same period during the 1925 season, this state
shipped about fifty percent of the total.

However, for the period from September 6 to October 15
for the 1924 season, and the period September 4 to October 10
of the 1925 season, because of prolonged favorable growing con­
ditions, this state rolled from eighty-five to ninety-five percent
of the total daily carlot movement.

The peak movement for the 1924 season occurred on Septem­
ber 10 when 127 carlots were rolled (Figure 14), and for the
1925 season on August 25 with the daily shipment reaching 147
carlots. This also indicates that the 1925 season was close to
two weeks earlier than the preceding season.

The total carlot shipments of melons for the 1924 season
was approximately 3,275 carlots, while for the 1925 season a
total of approximately 3,850 carlots was shipped. These figures
include cantaloupe, Honey Dew and other miscellaneous melon
shipments.

INSPECTION WORK

Organization.—The inspection of melons during the seasons
of 1924 and 1925 was conducted under a co-operative agreement
entered into by the Colorado chief melon inspector and the Fed­
eral Food Products Inspection Service representatives.

The Colorado melon inspection law (refer to session laws of
1923) established a compulsory inspection, prohibiting, under
penalty, the sale, shipment, or offering for shipment of melons
which had not passed inspection.

The chief cantaloupe inspector was appointed by the gov­
ernor. He must be qualified for his position and is held respon­
sible for the settlement of all disputes pertaining to inspection,
collection of fees, and accounting to the state treasurer for all
collections and expenditures. This inspection was purely state
and no certificate of inspection was issued. To strengthen this
service, giving it more prestige with the trade, both within and
without the state, invitation was extended to, and a co-operative agreement finally entered into, with the Federal Food Products Inspection Service.

The Federal Food Products Inspection Service was established by Act of Congress in 1922. This Act authorized the United States Department of Agriculture to formulate a shipping-point inspection service and to co-operate with the state organizations in conducting this work. Thru such an agreement, joint state and federal certificates were issued on all carlot shipments of melons during the season of 1924 and 1925. These certificates are admissible as prima facie evidence in any court of the United States or Colorado as to the quality, condition and grade of the product.

**Personnel and Duties of Inspectors.**—The inspection service was made up of the chief melon inspector, his assistants, nineteen in all during the 1924 season and twenty-one during the 1925 season, and a federal supervising inspector. Under the agreement, the Colorado chief cantaloupe inspector assumed the responsibility of securing sufficient assistance to perform the inspection work, to pay the salaries and expenses, collect all fees and reimburse the Department of Agriculture according to the terms of the co-operative agreement.

The assistant melon inspectors, if approved by the federal supervising inspector, were licensed by him and authorized to
write joint state and federal certificates. The federal supervisor instructed the men in writing certificates and in performing the federal part of the work. He was responsible for the proper conducting of this work, seeing that the facts were not misrepresented on the certificates and that instructions pertaining to the federal work were followed.

**Equipment.**—Each inspector was furnished with such instructions and equipment as were necessary in the proper performance of the work. The state supplied a rough-note holder, state stamp, inspector's badge, and a complete testing outfit, used in making sugar tests for maturity. The federal department furnished each inspector with a license card permitting him to make joint federal-state inspections, and printed instructions to serve as a guide in the proper performance of the federal part of the inspection work.

**Inspection Points.**—Inspections were made during the two seasons at twenty-nine different shipping points and at fifty-two loading points, extending over an area about one hundred miles long and twenty-five miles wide. The map (frontispiece) (Figure 1) shows the shipping points and the location of these points on the railway lines in the valley.

**Authority of Inspectors.**—Under the co-operative agreement the inspectors were authorized to carry out the state policy and regulatory work and to issue certificates as to the quality, condition and grade of the product. These two phases of the work

---

Fig. 15.—Inspection of Melons. Examining Melons as the Crates Are Unloaded Onto Shipper's Platform
INSPECTION OF CANTALOUPES

Basis of Inspection.—(Figure 15.) The inspection work during the seasons of 1924 and 1925 were conducted on the basis of the U. S. Grade No. 1. A sugar test for determining maturity (Figure 16) was also adopted and ten percent placed as the minimum amount of soluble solids to be contained in the juice, or the sugar-test representative of a mature melon. The state law prohibited the shipping of unmarketable melons. In this respect immaturity is considered of first importance, and the U. S. grades also place particular emphasis on maturity. Other defects affecting the marketability, as poor pack, over-ripe, cracks, rust injury, decay, insect injury, and frost injury were also causes for rejection. The federal phase of the work was confined entirely to certifying as to the quality, condition and grade of the stock loaded in the car and was not regulatory in any way except to insist that if unmarketable stock were allowed to be loaded, that the information placed on the certificate conformed to the facts.

Work of the Inspector.—A complete record is taken by the inspector of all facts pertaining to each carlot shipment. The certificate is merely a word picture describing as fully and clearly as possible the conditions as they exist. This includes
reference to any defects noted in the car condition and equipment which may affect the carrying qualities of the product, as well as the loading, pack, size, quality, condition, grade, or other facts concerning the product itself.

The certificate is often used as a basis for sale or for the settlement of disputes between interested parties. It is, therefore, very important that the contents of each car be carefully and thoroughly examined and that the information embodied in the certificate be consistent with the facts.

**Determining Maturity.**—The most important factor in the inspection of melons is the maturity. Stress is placed on this in the rejection work and it also is the principal factor in determining the grade, altho blemishes and other defects are considered. Maturity is determined by the netting, slip, color and firmness of the melons. Thoro knowledge of the details as they apply to the several different varieties of melons is necessary in inspecting as well as in harvesting, if accuracy in determining mature and immature stock is to be obtained, and costly and embarrassing mistakes avoided.

**Slip.**—The slip refers to the scar occurring when the melon is removed from the vine. This may vary from no slip to a full slip. Mature melons are usually from a half to a full slip. In some instances the slip is forced, but this is noticeable in the deepness of the scar and the lack of other characteristics which indicate a mature melon.

**Netting.**—The development of the netting has a decided bearing when determining the maturity and quality of the melons. A full, compact, well-developed net usually indicates a thrifty and properly matured melon. The appearance of the netting varies with the different varieties, as do the other factors indicating maturity.

The early melons of the crown set usually have a higher, better-rounded and more-complete netting than do the later melons, which ripen under less favorable growing and nutritive conditions. In a mature melon the netting should be high and well rounded. The crease in the net should be closed and extended well to the stem and blossom ends. As the melon ripens, the netting takes on a whitish appearance, losing the greenish cast and the fuzzy condition noticeable in immature stock. The blossom end also indicates the maturity by the extension of the netting across the circle, causing it to be lighter in color and to become rough and checked.

**Color.**—The color refers to the appearance of the ground color of the melon, showing between the netting and not to the netting itself. The ground color of an immature melon is dark green, or often even greenish-blue in appearance. As the fruit
matures this changes to a lighter green and then to yellow as the maturity advances.

**Firmness.**—The firmness of the melon often indicates the degree of maturity. Immature fruit is hard and unyielding to pressure when picked, but in a short time will show a wilted condition. As the fruit advances in maturity, the shell softens somewhat, usually being noticeable first at the blossom end. A fully matured melon will hold its firmness for some time, while immature and over-ripe fruit does not.

**Sugar Test for Maturity.**—The sugar test was used by inspectors as a further means of determining the maturity of the melons. It was also used as a means of checking up on their accuracy in judging maturity from the external appearance of the melons and in settling disputes regarding maturity in connection with the rejection work.

**Method of Making the Test.**—(Figure 16.) In selecting melons for the test, samples are taken from several crates in a lot. From these crates from one to five of the greenest melons are selected as a composite sample for the test. The number of melons selected from each crate depends upon the total contents of each and represents as nearly as possible the tolerance of immature stock permitted under the state regulations or that allowed in the U. S. grades.

**Apparatus Required**—
- Food grinder
- Knife
- Cheese cloth
- Small shallow pan
- Metal cylinder
- Scale hydrometer with thermometer.

**Method of Testing.**—The melons are cut and the contents of the seed cavity removed. The edible portion is removed with a spoon and passed thru the food grinder. The ground pulp is strained thru the cheese cloth and the juice poured into the cylinder until it runs over. The hydrometer is then placed in the cylinder and is allowed to remain a few minutes to allow the air in the juice to escape and the thermometer to record the temperature of the juice. The reading is then taken at the top of the liquid. The reading of the hydrometer with correction for temperature, determines the correct percentage of soluble solids in the juice, or the sugar test.

**U. S. Cantaloupe Grades (1926)**

U. S. No. 1 shall consist of cantaloupes of one variety which are firm, mature, well formed, well netted and free from aphis
honey dew, cracks, sunburn, decay and from damage caused by
dirt, moisture, hail, disease, insects or mechanical or other means.

In order to allow for variations incident to proper grading and
handling, not more than 10 percent by count, of any lot may be
below the requirements of this grade, but not over one-half of
this tolerance, or 5 percent, shall be allowed for any one defect
causing serious damage, and no part of this tolerance shall be
allowed for decay.

Unclassified shall consist of cantaloupes which are not graded
in conformity with the foregoing grade.

As used in these grades:

“Mature” means the cantaloupe has reached the stage of devel­
opment which will insure a proper completion of the ripening
process. Any cantaloupe shipped from the State of California
shall be regarded as mature which shows not less than 9 percent
soluble solids in juice as determined by the Brix or Balling Scale
hydrometer.

“Well netted” means having the netting characteristic of a
well-developed specimen of the variety.

“Damage” means any injury from the causes mentioned which
is apparent in the process of proper grading and handling.

“Serious damage” means any injury that seriously affects the
edible or shipping quality. Cantaloupes which are soft, immature
or cracked shall be considered as being seriously damaged.

Inspection of Honey Dew Melons

During the 1924 season inspection of Honey Dew melons
was conducted entirely along the line of marketability by the
state department. Lots of Honey Dew melons which were imma­
ture, poorly packed, blemished, or otherwise defective were
rejected for regrading and repacking, the same as for
cantaloupes.

Maturity was determined largely from the external appear­
ance, as color, texture, smoothness of the surface and firmness
of the melons.

Occasional cutting of melons served to aid the inspector in
checking up on his accuracy in judging maturity from external
appearances. Sugar tests were also made in some instances at
request and the result included in the certificate. A minimum
test for a mature melon was not officially adopted in 1924. The
result of numerous tests, however, indicated that a properly
matured Honey Dew melon contains a higher percentage of
sugar than the cantaloupe.
During the 1925 season tentative state Honey Dew grades were worked out for trial in the inspection of this product. This provided the inspector with something definite to work to as a standard in performing both the rejection and certificate writing phases of the working.

The Honey Dew grades used are as follows:

Colorado No. 1 shall consist of Honey Dew melons which are mature (but not soft), well formed, smooth, practically free from dirt, and free from decay, aphid stain, rust spots, and damage caused by bruises, sunscald, sunburn, hail, moisture, insects, disease, mechanical or other means.

In order to allow for variations incident to proper grading and handling, not more than ten percent by count of the melons in any lot shall be below the requirements of this grade, but no part of this tolerance shall be allowed for decay.

Colorado No. 2 shall consist of Honey Dew melons which are mature, but not soft, which are free from decay and from serious damage, caused by aphids, rust, sunscald, sunburn, insects, disease, mechanical or other means.

In order to allow for variations incident to proper grading and handling, not more than ten percent by count shall be below the requirements of this grade, but no part of this tolerance shall be allowed for decay.

Unclassified

Unclassified.—Melons which are not graded in conformity with the foregoing grades may be designated as unclassified.

Definition of Terms

“Mature” means having reached the stage of development at which the flesh of the melon is sweet and palatable and the surface showing the light cream color characteristic of a mature melon. The juice from the edible portion of the melon shall show an hydrometer sugar test of not less than 12.0.

“Free from damage” means that the melon shall not be injured to an extent apparent in the process of proper grading and handling. The following blemishes shall not be considered as damage: (1) Yellow spots which are not sunburn on the top side of the melon; (2) superficial hail spots, or small transparent spots not sufficient in number to noticeably detract from the appearance of the melon; (3) slight surface, picking, hauling and packing scratches which are not bruises.

“Serious damage” means that the defects singly or collectively seriously deform or disfigure the fruit or seriously affect the market quality.
Immature, soft, frost-injured, rust spots, numerous hail spots extending into the flesh of the melon, severe sunscald to the ground side of the melons, and decay shall be considered as serious damage.

These are the first grades which have been tried out in the inspection of Honey Dew melons and are only tentative. Several seasons' application may be necessary before sufficiently definite and satisfactory requirements can be selected governing the inspection of this product.

**Summary of Inspection Work**

The past two years of federal-state cooperative inspection witnessed a marked change in the service. The use of the U. S. grades provided definite standard as a basis for inspection which had been lacking heretofore. The adoption of a sugar test for maturity removed much of the chance for error of individual judgment and no doubt prevented much immature, unmarketable fruit from being shipped.

Experience has proved that an inspection service, to be effective and at all satisfactory, must provide definite grade and standard as a basis for the work and as a means of educating the growers and trade to the adoption of higher standards for the products which they ship. The service must be impartial and unaffected by local sentiments or politics.

Prior to effecting the cooperative agreement, no certificate or report of inspection of any kind was issued.

The federal-state certificates list the facts of loading, pack, size, quality, condition and grade of the product loaded into the car. These certificates may be used as a basis of sale, settlement of disputes between interested parties and for the adjusting of claims between the shipper and the carrier. The f. o. b. auction companies, in order to operate, required the inspection service, since their sales are made on the basis of wire reports of the facts listed on the federal certificate of inspection.

Even with excellent quality, the tendency of past seasons to offer for shipment immature and otherwise defective stock was still apparent in 1924, with the result that during that season, with a definite program of inspection in operation, approximately twenty-five thousand crates were rejected or ordered regraded and repacked. Of these, forty-seven percent were rejected because of immaturity; twenty-two percent were inferior, due to dead or frost-injured vines; fifteen percent were rejected due to cracked stock and grasshopper injury; ten percent were due to poor pack. About seventy-five percent of the melons so rejected were saved and made marketable by resorting and repacking.
During the 1925 season, with poorer-quality melons than the preceding season, a total of approximately forty-two thousand crates were rejected. Of this number about forty-eight percent were rejected due to immaturity; forty-three percent were overripe, soft, or from weak vines, four percent, scarred or cracked; three percent aphid injury; and two percent rust injury. It is probable that close to seventy-five percent of all rejected stock this season was also saved by regrading and repacking.

The following table shows the number of certificates issued each season and the number of cars of each kind of melons inspected:

Certificates Issued on Carlots of Melons

<table>
<thead>
<tr>
<th>Season</th>
<th>Cantaloupes</th>
<th>Honey Dew Melons</th>
<th>Watermelons</th>
<th>Casaba</th>
<th>Mixed Melons</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1924</td>
<td>1,858</td>
<td>562</td>
<td>22</td>
<td>2</td>
<td>728</td>
<td>3,172</td>
</tr>
<tr>
<td>1925</td>
<td>1,967</td>
<td>826</td>
<td>42</td>
<td>2</td>
<td>986</td>
<td>3,823</td>
</tr>
<tr>
<td>Total</td>
<td>3,825</td>
<td>1,388</td>
<td>64</td>
<td>4</td>
<td>1,714</td>
<td>6,995</td>
</tr>
</tbody>
</table>

SHIPPERS' BUSINESS IN MARKETING

The grower completes his operations, in connection with the marketing of his crop, upon delivery of the melons to the commission merchant, cash buyer, or other selling agent. The shipper is responsible thereafter, in accordance with his agreement with the grower, for the proper loading, shipping, and final disposition of the melons. The grower receives the returns for his crop in accordance with the method of sale employed.

Direct Marketing.—Direct marketing is accomplished by the sale of the crop or part of the crop direct from the grower to other parties for cash.

F. O. B. Auction Sales.—This form of direct marketing was introduced in the Arkansas Valley for the first time during the season of 1924. Apparently it met with considerable favor from the growers, judging from the fact that approximately ten percent of the total carlot shipments from the district were sold thru the f. o. b. auction companies. For some reason they did not operate during the 1925 season, but reports indicate that they will again be doing business during the 1926 season.

Under this method of sale the melons were delivered at the platform to representatives of the auction company for loading. A charge per car is paid by the grower to cover the cost of loading and commission to the auction company. The auction sales
are conducted over a leased wire, extending into practically all the large terminal markets. The federal shipping-point inspection certificate is accepted by the trade as the basis of sale. The details of the certificate are wired out and the sale of the car is based on its representation. The sale is usually affected the day following the loading while the car is in transit, and it is then diverted to the buyer. The money is wired immediately after the sale is made and is distributed to the growers by the auction company’s representative.

**Cash Buyers.**—The cash buyer receives the melons at his platform, paying the grower the prevailing f. o. b. price. He may also buy the melons in the car after they have been loaded by the growers or growers’ associations. He may or may not have a contracted acreage, but as a rule secures the larger portion of his stock from independent growers.

**Express Shipments.**—A large portion of the very early melons which ripen ahead of the main crop is disposed of locally for cash or shipped by express. Some growers make a practice of establishing an extensive express trade and dispose of the larger portion of their crop in this manner. The greater part of the express shipments consist of the fully ripened or “choice” stock which is not suitable for a long haul.

**Truck Trade.**—A considerable amount of the melon crop is handled by truckers. The trucker buys direct from the grower for cash and disposes of his load in towns within a radius of one to three hundred miles from the producing district. Some small growers dispose of practically their entire crop in this manner and save much of the expense of crate materials, packing and commission involved in some other methods of sale.

**Indirect Marketing.**—The greater portion of the crop is marketed or sold on a commission basis. Under this method of marketing, the grower delivers his melons to the commission men or distributors who assume the responsibility for the proper loading and final disposition of the shipments for a commission based upon the gross sale value.

**Shippers’ Methods and Organizations.**—The commission companies, serving as growers’ agents in the marketing of the crop, maintain offices and employ a large force of well-trained men which is necessary for the proper performance of their obligations. The needs of the grower for marketing supplies and financial aid in producing and harvesting the crop are often provided by the distributors. A well-trained force of field workers is usually maintained, principally to protect the shippers’ interests, but who likewise greatly benefit the growers thru their supervision. Crews are maintained by the shippers to continue
the movement of the melons from the grower into the cars, insuring the proper handling, loading and prompt shipment of the crop.

**Contract.**—Contracts are entered into by the growers and commission men wherein are stipulated the obligations of each party to the agreement. Thru the contracted acreage, the shipper is enabled to estimate closely the amount of material necessary to meet the needs of his growers and to be prepared to perform efficiently his part of the marketing operations. It also relieves the grower from securing a market for his crop and enables him, if necessary, to secure financial help from the distributor in producing and harvesting his crop.

The details of the different contracts between the various shippers and their growers are very much the same. The principal difference appears to be in the percentage of commission charged; in the Rocky Ford and Ordway districts it is fifteen percent of the gross sale value in the former, and seventeen and a half percent in the latter. The specified cost of materials, amount of advance per crate and amount of inspection fees to be paid by the grower also differ to some extent.

**Details of Contracts.**—The contract provides that the grower shall not ship any of his crop with other distributors and agrees to the deduction for commission. In some instances the shipper reserves the right to limit the acreage of each kind of melons the grower shall plant, the grower to offer for shipment only marketable melons, to put up a uniform pack and to wrap the pink-meat* melons. He further agrees to protect his melons from dust, moisture, sun or other factors which may affect the condition and carrying quality of the melons and to abide by the state and federal laws regarding the proper grading, packing and marking of the crates. The shipper agrees to furnish the necessary crates and supplies for marketing, but provides that he cannot be held liable if he fails to do so on account of fire, strikes or other causes beyond his control. The cost of all materials, seed, loans, etc., is to be deducted by the shipper from the advance due the grower upon delivery of his melons.

Following is the advance usually paid to the growers by the various shippers:

**Cantaloupes**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Advance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Salmon Tint</td>
<td>70c</td>
</tr>
<tr>
<td>Flat Salmon Tint</td>
<td>35c, some 37½c</td>
</tr>
<tr>
<td>Flats, Pink Meat</td>
<td>35c, some 37½c</td>
</tr>
<tr>
<td>Jumbo Flats</td>
<td>37½c, some 40c</td>
</tr>
</tbody>
</table>

**Honey Dews**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Advance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>50c</td>
</tr>
<tr>
<td>Jumbo</td>
<td>55c</td>
</tr>
<tr>
<td>Special (12 pack)</td>
<td>40c</td>
</tr>
</tbody>
</table>

*Burrell Gem variety.
The distributor agrees to furnish all labor required for the proper loading of the cars and the materials used in loading without cost to the grower. He also guarantees the railway company the freight and icing charges in order to insure shipment for the growers. The shipper is not liable, however, in cases of strikes, embargo, or car shortage or other causes which may prevent shipment.

The distributor is to use his best judgment in the marketing of the melons. Provision is made for payment to the growers from the returns from the pools. The pools vary in length from two days to weekly pools. Sales are usually based on either two- or three-day pools. Settlement is made with the grower on the net returns from each pool, each grower being credited with the number of crates he has in the pool. Final settlement is made with the grower at the end of the season. The grower's net is arrived at after all freight charges, icing charges, cartage, inspection, etc., have been deducted. The commission is deducted from the gross sale of the melons. The shipper is responsible for all sub-agents' commissions or other selling charges incurred. From the net due the grower, deduction is made by the shipper as provided in the contract, for all materials, seed, loans, or other advances. If less than the advance is received from the net sale, the shipper stands the loss. It is provided, however, that upon notice to the grower, the shipper can stop receiving the melons or cut the advance if he realizes that the fruit will not bring the freight and icing charges. The rejection of melons by the distributors' fieldmen is to be final with the grower, unless his decision be overruled by state or federal inspection authorities.

The distributor agrees to follow out all claims and furnish account to the grower of the settlement in each case. The shipper is allowed fifteen percent and expenses involved in making the collection, and the balance is paid the growers to whom it is due.

The contracts provide that the shippers' books be open for examination by any grower for one year from the date of the last shipment.

**SHIPPERS' OPERATIONS**

**Supervision Work.**—The distributors usually maintain a force of highly capable fieldmen who work among the various growers, supervising the harvesting and packing operations in order to secure a marketable product. This supervision in many instances is of great benefit to the growers, thru correcting mistakes in picking and packing which, if not quickly brought to attention, would result in heavy loss.
Platform Work.—(Figure 17.) The melons are inspected by the fieldmen or shed foreman as they are unloaded onto the platform. Stock not meeting the state requirements is often rejected by the shipper’s employees or held until passed upon or rejected by the state inspectors. The crates are stacked on the platform in a manner convenient for relabeling and for trucking into the cars. Usually the end pieces of the crates are labeled before
the shook is issued to the grower for making up. Many labels however, become detached or torn in handling and are replaced on the platform.

**Loading.**—(Figure 18.) The melon crates are trucked into the car and carefully loaded. Stripping is placed between some or all of the layers of crates to prevent shifting of the load. The standard crates are loaded on the side, not on the bulge, to prevent unnecessary bruising. Flats are either right side up or on edge, while Honey Dews are loaded only flat, with the top side up. Few cars are loaded entirely with one-sized crates. Most cars of cantaloupes contain crates of both sizes and often of several varieties of melons.

The following shows the loading and number of crates per carlot of the different kinds of crates:

<table>
<thead>
<tr>
<th>Melons</th>
<th>Crate</th>
<th>Number Stacks</th>
<th>Number Layers</th>
<th>Rows Wide</th>
<th>Usual Number of Crates per Car</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cantaloupes</td>
<td>Standard</td>
<td>16</td>
<td>3</td>
<td>7</td>
<td>336</td>
</tr>
<tr>
<td>Cantaloupes</td>
<td>Flats</td>
<td>15</td>
<td>8</td>
<td>6</td>
<td>720</td>
</tr>
<tr>
<td>Honey Dews</td>
<td>Standard</td>
<td>16</td>
<td>7</td>
<td>5</td>
<td>560</td>
</tr>
<tr>
<td>Honey Dews</td>
<td>Jumbo</td>
<td>16</td>
<td>6</td>
<td>5</td>
<td>480</td>
</tr>
</tbody>
</table>

Fig. 19.—Method of Loading Standard Crates in Refrigerator Car
CARS loaded in this manner generally have inside measurements about 33 feet in length by 8 feet wide. Cars with an inside length of about 32 feet are usually loaded with but 15 stacks in order to permit sufficient room for proper center bracing.

The placing of the crates in the car is usually done by an experienced car loader. It is essential that the car be properly loaded in order to avoid shifting of the load in transit, which may result in considerable damage to the melons.

The number of cars that can be loaded and braced by an expert loader in a day varies from five or six to ten or twelve, depending upon the skill and endurance of the loader, the number of hours worked and the regularity with which the melons are supplied.

The last operation performed in loading the car, and a very important one, is bracing the load (Figure 21). The center bracing must be put in tight and in the proper manner to prevent it coming loose or breaking, which would result in shifting the load and damage to the melons.

Method of Sale.—The method of sale varies to some extent with the different shippers. The larger companies are usually distributors who consign the shipments to their own houses. Distribution of the melons to the jobbers in this case is direct and avoids the payment of brokerage or sub-agents' commission. Other shippers consign the cars to brokers in the many terminal markets for sale and final distribution to the wholesaler or jobber. The sub-agent's commission when sales are
made in this manner frequently amounts to a large part of the commission which the shipper received as the grower's selling agent.

The f. o. b. auction sales are made by wire, based on the facts listed on the federal certificate. The auction companies wire the report to a number of the receiving markets over the country. The car is sold to the highest bidder while still in transit and diverted to the buyer.

This method of operation has placed great responsibility upon the inspection service, since the car is paid for before he sees it and a satisfied customer depended upon his receiving a car of produce corresponding in quality and grade to the facts listed on the certificates.

Another method of auction sales is in operation in the principal receiving markets as a means of distribution. A shipper, broker, buyer or other designated distributing agency may assign one car or several cars or a portion of a car for sale over the auction companies' platform. The produce is placed in lines or lots on the auction floor, each line being numbered. The various lines may be different growers' lots or may be different products. The content of the car is listed on the auction calendar for that day showing the different products in the car, the number of lines and the number of packages in each lot or line.

Samples are opened in the various lots for examination by the prospective buyers prior to the opening of the auction proper in the auditorium of salesrooms. As each car is reached on the auction catalog, bids are received on each line called by the auctioneer and the line sold to the highest bidder. The buyer may
take the entire line or only a few packages. If only part of the line is taken by the first buyer, the remaining packages may be sold to others on the former bid or rebid upon and secured at a lower or higher figure.

COST OF HARVESTING AND MARKETING CANTALOUPES SEASONS 1924-1925

The cost to the grower of marketing his cantaloupes, as shown in the following portion of this report, includes the freight charges, commission and all other items of expense as well as the materials and labor costs incurred in harvesting the crop.

Methods of Collecting Data.—The average figures and representative examples shown in this report were obtained from figures and estimates collected from various growers throughout the melon districts and their selling agents. The survey method was used in collecting this data. Labor costs were determined by the actual contract prices when performed in this manner. When performed by the grower with day labor, his estimates were obtained on the number of men and horse hours required to do the work and the rate per hour. Figures on deliveries, materials furnished, freight commission and returns were furnished by the shippers from their records. Whenever any doubt was entertained as to the accuracy of a record, it was discarded. As previously stated, some growers harvested their crop entirely with day labor, some contracted all the operations, but the majority contracted some of the operations and handled the remainder of the work with day labor.

When actual figures were not obtainable, an estimate of the man and horse hours was obtained and the labor rate per hour applied to determine the cost. For contracted work, the number of crates packed and the rate per crate determined the cost. When part of the work was contracted and part handled by day labor, the expenditures from both practices were totaled. In some cases other information, such as acreage, deliveries and materials, was also obtained from the grower. Usually, however, the deliveries, cost of materials, inspection, freight, commission and returns, were obtained from the shippers’ records.

Individual Operations.—Day labor used by the grower in performing the individual operations during the 1924 and 1925 seasons was paid for in practically all cases at the rate of thirty cents an hour. In some instances only part of the work was handled by day labor, and the balance contracted for and paid for by the piece. The cost to each grower in marketing his crop depended upon the yield per acre, size of the acreage and the efficiency of the labor and the management in handling the work. In many cases, some of the work, such as opening the
roads and scattering field crates, was done by members of the crew who later were used for picking, packing and other work. The lidding and crate making also were often handled by one man.

Following is a sample record illustrating the method of determining the cost of harvesting by day labor or by individual operations:

**Harvesting Cantaloupes—Individual Operations**

<table>
<thead>
<tr>
<th>Operations</th>
<th>Total Yield</th>
<th>Yield in Standard Crates per Acre</th>
<th>Total Hours</th>
<th>Labor Cost</th>
<th>Total Cost Harvesting</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Acres</td>
<td>1,765</td>
<td>176</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Man  Horse</td>
<td>Man  Horse</td>
<td>10 Acres 1 Acre Crates</td>
</tr>
<tr>
<td>Opening Roads</td>
<td></td>
<td></td>
<td>10</td>
<td>0</td>
<td>$3  0 $3  0.30</td>
</tr>
<tr>
<td>Scattering Crates</td>
<td></td>
<td></td>
<td>10</td>
<td>20</td>
<td>$3  $3  $6  0.60</td>
</tr>
<tr>
<td>Picking Cantaloupes</td>
<td></td>
<td></td>
<td>500</td>
<td>0</td>
<td>$150 0 $150 15.00</td>
</tr>
<tr>
<td>Hauling to Shed</td>
<td></td>
<td></td>
<td>120</td>
<td>240</td>
<td>$36  $36  $72  7.20</td>
</tr>
<tr>
<td>Making Crates</td>
<td></td>
<td></td>
<td>90</td>
<td>0</td>
<td>$27  0 $27  2.70</td>
</tr>
<tr>
<td>Packing</td>
<td></td>
<td></td>
<td>150</td>
<td>0</td>
<td>$45  0 $45  4.50</td>
</tr>
<tr>
<td>Lidding</td>
<td></td>
<td></td>
<td>150</td>
<td>0</td>
<td>$45  0 $45  4.50</td>
</tr>
<tr>
<td>Hauling to Station</td>
<td></td>
<td></td>
<td>150</td>
<td>300</td>
<td>$45  $45  $90  9.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,765</td>
<td>176</td>
<td>1,180</td>
<td>560</td>
<td>$560  $354 $438 43.80</td>
</tr>
</tbody>
</table>

Man Labor per Hour, 30c—Horse Labor per Hour, 15c

**Contract Basis.**—The greater portion of the work is performed under contract. In many cases the field work and shed work are contracted, but hauling to the station is performed by the grower.

The following figures are representative of the cost of harvesting on a contract basis and show the cost in cents per packed crate for work performed.

The contract prices were practically the same during both the 1924 and 1925 seasons.
These figures vary somewhat with the different growers and the kind of melons grown. When the melons are wrapped, the shed work is generally about one cent higher per crate than when no wrapping is required. The cost of hauling to the station, when contracted, varies widely, depending upon the size of the crates and the length of haul.

The following figures illustrate the cost of the grower’s operations when performed under contract. The yield is figured on the basis of standard crates, while the cost of the contracts is governed by the number of standard and flat crates picked, packed and hauled:

**Harvesting Cantaloupes—Contract Basis**

<table>
<thead>
<tr>
<th>Contracts</th>
<th>Acres</th>
<th>Acre Yield</th>
<th>Total Yield</th>
<th>Std. Crates</th>
<th>Per Crate</th>
<th>Flat Crates</th>
<th>Per Crate</th>
<th>Total Cost</th>
<th>Acre Cost</th>
<th>Std. Crate Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Work</td>
<td>20</td>
<td>194</td>
<td>3,892</td>
<td>619</td>
<td>10c</td>
<td>8,183</td>
<td>4c</td>
<td>$389.22</td>
<td>$19.46</td>
<td>$0.10</td>
</tr>
<tr>
<td>Shed Work</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>619</td>
<td>8½c</td>
<td>8,183</td>
<td>4½c</td>
<td>420.85</td>
<td>21.04</td>
<td>.108</td>
</tr>
<tr>
<td>Hauling</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>619</td>
<td>2½c</td>
<td>8,183</td>
<td>1½c</td>
<td>138.32</td>
<td>6.91</td>
<td>.036</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>194</td>
<td>3,892</td>
<td>619</td>
<td>...</td>
<td>8,183</td>
<td>...</td>
<td>$948.39</td>
<td>$47.41</td>
<td>.244</td>
</tr>
</tbody>
</table>

The following averages on marketing costs were obtained from figures and estimates secured from various growers and their selling agents. The data were collected from growers in all the principal growing sections of the district and should represent a fairly accurate average of the cost of marketing cantaloupes in the Arkansas Valley for the seasons of 1924 and 1925. These figures include the cost of harvesting and all the deductions made from the gross sale of the melons. The yield is shown in standard crates at the ratio of two and one-half flats equaling one standard crate. Items such as icing charges, cartage and diversion are included in the freight. The net return is the amount which the grower received after all expenses for labor, advances, freight, etc., have been deducted.

**Costs—Season of 1924.**—The ratio of the number of flat crates equaling one standard crate varies with the different items of labor, materials, freight, commission, returns and other items. The seemingly nearest practical ratio was applied in each case to arrive at the following averages. These figures involve twenty-one growers, representing an acreage of 456 acres and showing an average production of 131 standard crates per acre.
Average Costs of Harvesting and Marketing—Season 1924

<table>
<thead>
<tr>
<th>Cost Items</th>
<th>Per Acre</th>
<th>Per Crate</th>
<th>Percent Total Cost To Grower</th>
<th>Percent of Gross Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor</td>
<td>$30.52</td>
<td>$0.27</td>
<td>12.3</td>
<td>9.2</td>
</tr>
<tr>
<td>Materials</td>
<td>35.30</td>
<td>.20</td>
<td>14.2</td>
<td>10.6</td>
</tr>
<tr>
<td>Association Dues</td>
<td>.42</td>
<td>.003</td>
<td>.17</td>
<td>.12</td>
</tr>
<tr>
<td>Inspection</td>
<td>.90</td>
<td>.006</td>
<td>3.6</td>
<td>.28</td>
</tr>
<tr>
<td>Freight</td>
<td>131.13</td>
<td>1.01</td>
<td>52.77</td>
<td>39.6</td>
</tr>
<tr>
<td>Commission</td>
<td>50.18</td>
<td>.40</td>
<td>20.2</td>
<td>15.2</td>
</tr>
<tr>
<td>Total Cost to Grower</td>
<td>$248.45</td>
<td>$1.89</td>
<td>100.00</td>
<td>75.0</td>
</tr>
<tr>
<td>Net Returns</td>
<td>82.08</td>
<td>.63</td>
<td>33.00</td>
<td>25.00</td>
</tr>
<tr>
<td>Gross Sales</td>
<td>$330.53</td>
<td>$2.52</td>
<td></td>
<td>100.00</td>
</tr>
</tbody>
</table>

Marketing Costs—Season of 1925.—The following averages were obtained from figures collected from thirty-seven growers and their selling agents, representing an acreage of 1,020 acres and an average yield of 137 standard crates per acre:

Average Costs of Harvesting and Marketing—Season 1925

<table>
<thead>
<tr>
<th>Cost Items</th>
<th>Per Acre</th>
<th>Per Crate</th>
<th>Percent Total Cost To Grower</th>
<th>Percent of Gross Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor</td>
<td>$35.04</td>
<td>$0.29</td>
<td>13.17</td>
<td>10.5</td>
</tr>
<tr>
<td>Materials</td>
<td>39.21</td>
<td>0.21</td>
<td>14.74</td>
<td>11.8</td>
</tr>
<tr>
<td>Association Dues</td>
<td>.67</td>
<td>.004</td>
<td>.25</td>
<td>.2</td>
</tr>
<tr>
<td>Inspection</td>
<td>1.25</td>
<td>.007</td>
<td>.47</td>
<td>.4</td>
</tr>
<tr>
<td>Freight</td>
<td>139.45</td>
<td>1.03</td>
<td>52.41</td>
<td>42.0</td>
</tr>
<tr>
<td>Commission</td>
<td>50.46</td>
<td>.38</td>
<td>18.96</td>
<td>15.1</td>
</tr>
<tr>
<td>Total Cost</td>
<td>$266.08</td>
<td>$1.92</td>
<td>100.00</td>
<td>80.0</td>
</tr>
<tr>
<td>Net Returns</td>
<td>65.71</td>
<td>.51</td>
<td>26.00</td>
<td>20.00</td>
</tr>
<tr>
<td>Gross Sales</td>
<td>$333.39</td>
<td>$2.43</td>
<td></td>
<td>100.00</td>
</tr>
</tbody>
</table>
The preceding averages will permit a comparison of the expenditures involved in the harvesting and marketing of cantaloupes for the seasons of 1924 and 1925. The net return to the grower is the amount received after all cost of labor, materials, freight, commission and other items of expense have been deducted. The cost of production is not included in the preceding averages.

The increase noted in the costs per acre for 1925 over that of 1924 may be accounted for by the increase in production. The larger number of growers and acreage included in the 1925 average may also have some bearing on the results obtained. The increase in labor costs for 1925 may be due to less favorable weather and a longer harvesting season. The amount of breakage, quantity of materials held over by the growers, or used for cash sales and not accounted for, will likely explain the increased cost per crate for materials. The less favorable market season of 1925 accounts for the lower gross sales and returns to the grower.

COST OF HARVESTING AND MARKETING HONEY DEW MELONS—SEASONS OF 1924-1925

Cost of Harvesting—Day Labor.—The marketing of Honey Dew melons parallels very closely that of cantaloupes. The harvesting operations are performed largely individually and with day labor. In some instances the work is contracted wholly or in part, the rate per crate varying with the different growers. The pay for day labor for this work during the seasons of 1924 and 1925 was, on an average, thirty cents per hour.

Following is a sample record showing the labor cost of harvesting a crop of Honey Dew melons with day labor:

<table>
<thead>
<tr>
<th>Operations</th>
<th>Total Yield</th>
<th>Acre Yield</th>
<th>Total Hours</th>
<th>Labor Cost*</th>
<th>Total Cost</th>
<th>Acre Cost</th>
<th>Crate Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Man</td>
<td>Horse</td>
<td>Man</td>
<td>Horse</td>
<td></td>
</tr>
<tr>
<td>Picking 5 Acres</td>
<td>2,516</td>
<td>503</td>
<td>200</td>
<td>503</td>
<td>$60.00</td>
<td>$60.00</td>
<td>$0.023</td>
</tr>
<tr>
<td>Hauling to Shed</td>
<td></td>
<td></td>
<td>70</td>
<td>140</td>
<td>21.00</td>
<td>21.00</td>
<td>8.40</td>
</tr>
<tr>
<td>Making Crates</td>
<td></td>
<td></td>
<td>100</td>
<td>30.00</td>
<td>30.00</td>
<td>6.00</td>
<td>.012</td>
</tr>
<tr>
<td>Packing</td>
<td></td>
<td></td>
<td>200</td>
<td>60.00</td>
<td>60.00</td>
<td>12.00</td>
<td>.023</td>
</tr>
<tr>
<td>Lidding</td>
<td></td>
<td></td>
<td>100</td>
<td>30.00</td>
<td>30.00</td>
<td>6.00</td>
<td>.012</td>
</tr>
<tr>
<td>Hauling to Sta.</td>
<td></td>
<td></td>
<td>60</td>
<td>120</td>
<td>18.00</td>
<td>18.00</td>
<td>7.20</td>
</tr>
<tr>
<td>Total</td>
<td>2,516</td>
<td>503</td>
<td>730</td>
<td>260</td>
<td>$219.00</td>
<td>$39.00</td>
<td>$51.60</td>
</tr>
</tbody>
</table>

*Man labor, per hour, 30c. Horse labor, per hour, 15c
Cost of Harvesting—Contract Labor.—Some growers contract the harvesting of the Honey Dew crop as well as the cantaloupes. Often, however, only part of the work was contracted and the remainder performed with day labor. The rate for "field" and "shed" work for Honey Dew melons was generally three to five cents per crate for the former and four to seven cents per crate for the latter, while hauling to the station varied from one to three cents, depending largely upon the length of haul.

Following is an individual record which will serve as an example of the cost per acre and per crate of harvesting Honey Dew melons with contract labor:

<table>
<thead>
<tr>
<th>Contracts</th>
<th>Acres</th>
<th>Yield, Acre</th>
<th>Total</th>
<th>Charge per Crate</th>
<th>Cost Total</th>
<th>Cost Acre</th>
<th>Cost Crate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Work</td>
<td>8</td>
<td>414</td>
<td>3,307</td>
<td>3 1/4 c</td>
<td>$107.45</td>
<td>$13.43</td>
<td>3 1/4 c</td>
</tr>
<tr>
<td>Shed Work</td>
<td></td>
<td></td>
<td></td>
<td>4 1/2 c</td>
<td>148.81</td>
<td>18.60</td>
<td>4 1/2 c</td>
</tr>
<tr>
<td>Hauling to Station</td>
<td></td>
<td></td>
<td></td>
<td>1 1/4 c</td>
<td>57.87</td>
<td>7.23</td>
<td>1 1/4 c</td>
</tr>
<tr>
<td>Total Cost</td>
<td>8</td>
<td>414</td>
<td>3,307</td>
<td></td>
<td>$314.13</td>
<td>$39.26</td>
<td>9 1/2 c</td>
</tr>
</tbody>
</table>

Altho according to the preceding comparison, harvesting of Honey Dew melons can be done as economically with contract labor as with day labor, the majority of the growers handle this work on a day basis. The larger portion of this crop is generally harvested after the bulk of the cantaloupe crop has been shipped. This makes it possible and often more satisfactory for the grower to do this work himself with the aid of such labor as may be necessary.

The following averages were obtained from figures collected from various shippers and growers in the Arkansas Valley. The average is representative of the cost and return per acre and per crate from Honey Dew melons for the seasons of 1924 and 1925.

The averages for the 1924 season were obtained from figures collected from eighteen growers representing an acreage of 104 acres with an average yield of 384 crates per acre.
Average Costs of Harvesting and Marketing—1924 Season

<table>
<thead>
<tr>
<th>Cost Items</th>
<th>Per Acre</th>
<th>Per Crate</th>
<th>Percent Total Cost</th>
<th>Percent of Gross Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor</td>
<td>$33.35</td>
<td>$0.087</td>
<td>8.8</td>
<td>7.0</td>
</tr>
<tr>
<td>Materials</td>
<td>89.50</td>
<td>0.233</td>
<td>23.8</td>
<td>18.2</td>
</tr>
<tr>
<td>Association Dues</td>
<td>.45</td>
<td>0.001</td>
<td>.1</td>
<td>.1</td>
</tr>
<tr>
<td>Inspection</td>
<td>1.53</td>
<td>0.004</td>
<td>.4</td>
<td>.30</td>
</tr>
<tr>
<td>Freight</td>
<td>182.53</td>
<td>0.475</td>
<td>48.5</td>
<td>38.0</td>
</tr>
<tr>
<td>Commission</td>
<td>69.22</td>
<td>0.18</td>
<td>18.4</td>
<td>14.4</td>
</tr>
<tr>
<td>Total Cost</td>
<td>$376.58</td>
<td>$0.98</td>
<td>100.00</td>
<td>78.0</td>
</tr>
<tr>
<td>Net Returns</td>
<td>103.36</td>
<td>0.27</td>
<td>27.00</td>
<td>22.0</td>
</tr>
<tr>
<td>Gross Sales</td>
<td>$479.94</td>
<td>$1.25</td>
<td></td>
<td>100.00</td>
</tr>
</tbody>
</table>

Following are the averages for the season of 1925, including twenty-six growers, representing an acreage of 293 acres with an average production of 360 crates to the acre:

Average Costs of Harvesting and Marketing—Season 1925

<table>
<thead>
<tr>
<th>Cost Items</th>
<th>Per Acre</th>
<th>Per Crate</th>
<th>Percent Total Cost</th>
<th>Percent of Gross Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor</td>
<td>$32.39</td>
<td>$0.09</td>
<td>8.0</td>
<td>6.7</td>
</tr>
<tr>
<td>Materials</td>
<td>79.70</td>
<td>0.22</td>
<td>20.0</td>
<td>16.0</td>
</tr>
<tr>
<td>Association Dues</td>
<td>.83</td>
<td>0.002</td>
<td>.2</td>
<td>.15</td>
</tr>
<tr>
<td>Inspection</td>
<td>1.76</td>
<td>0.048</td>
<td>.4</td>
<td>.35</td>
</tr>
<tr>
<td>Freight</td>
<td>212.32</td>
<td>0.59</td>
<td>52.7</td>
<td>43.4</td>
</tr>
<tr>
<td>Commission</td>
<td>75.60</td>
<td>0.21</td>
<td>18.7</td>
<td>15.4</td>
</tr>
<tr>
<td>Total Cost</td>
<td>$402.60</td>
<td>$1.12</td>
<td>100.00</td>
<td>82.0</td>
</tr>
<tr>
<td>Net Returns</td>
<td>86.18</td>
<td>0.24</td>
<td>21.90</td>
<td>18.0</td>
</tr>
<tr>
<td>Gross Sales</td>
<td>$488.78</td>
<td>$1.36</td>
<td></td>
<td>100.00</td>
</tr>
</tbody>
</table>
The estimate of the amount of the "net returns," as shown above, is the amount due the grower after deducting all costs of harvesting and marketing. These estimates do not include the cost of production, including rents, seed and planting advances sometimes extended to the growers by the distributors.

SUMMARY

The Rocky Ford district is the oldest and most famous melon-producing center of the country. The present standard cantaloupe containers originated in this district as well as the principal varieties of melons now grown commercially throughout the country. This district also produces practically the entire commercial seed supply of the country.

The acreage is made up primarily of a large number of small fields, there being only a few growers who rely entirely upon the melon crop.

Harvesting and marketing methods and practices remain practically the same from year to year. The greater part of the work of harvesting and packing cantaloupes is contracted, while the major part of the harvesting of Honey Dew melons is performed with day labor.

The materials required by the grower in marketing his crop are generally supplied by the distributors at cost and the amount deducted from the advance due upon delivery of the melons.

Results noted for the two years covered in this report show that a season with below-normal precipitation is more favorable to the production of good-quality melons than one of normal or excessive rainfall. A season of abnormal rainfall is likely to witness considerable hail, rust and aphid damage as well as a generally poorer appearance and carrying quality of the melons.

The market season as a whole for the two years was fairly successful, especially that for the 1924 season. This permitted growers and shippers to realize a profit from the crops after several years of adverse conditions.

The greater part of the crop is handled on a commission basis under contract stating the obligation of the grower and his selling agent.

The f. o. b. auction companies operated in the district for the first time during the 1924 season. They handled approximately ten percent of the total shipments, and this method of marketing apparently met with favor, but for some reason they did not operate during the 1925 season.

The progressive growers and shippers of the Arkansas Valley realize the necessity for complying with proved standardization and inspection measures, if the district is to recover and main-
tain its reputation as a producer of good melons. Joint federal-state shipping-point inspection service was available for the first time during the 1924 season and continued thru that of 1925. Thru this cooperation the service came under federal supervision, permitting the issuing of joint federal-state certificates on all carlot shipments.

The cost of marketing cantaloupes and Honey Dew melons for the seasons of 1924 and 1925 is based on figures and estimates furnished by the growers and shippers thruout the district. The average obtained will permit comparison for the district as a whole of the increase or decrease in the costs of marketing and the net returns to the growers for the two-year period.

ACKNOWLEDGMENT

This report was prepared under the direction of Professor L. A. Moorhouse, Department of Sociology and Economics, State Agricultural College, co-operating with the office of the Colorado Director of Markets and the Bureau of Agricultural Economics, United States Department of Agriculture.

The author and co-operating agencies wish to express their indebtedness and appreciation to the following agencies and growers whose co-operation materially assisted in collecting the information and data listed in this report:

**Agencies.**—S. H. Gerrard Company, Ordway, Colorado; American Fruit Growers, Inc.; John Amacon Company; Steinhardt and Kelley Fruit Company; Stanley Fruit Company; all of Rocky Ford, and Hanigan Brothers, Swink, Colorado.

**Growers.**—M. E. Bashor, Ordway; J. D. Bald, Numa; K. Nakamota, King Center; M. Tanobe, King Center; K. Akagi, King Center; H. Kamatsu, King Center; August Enterman, Numa; I. Akagi, Crowley; R. R. Franklin, Crowley; F. Muniz, Numa; Frank Conklin, Sugar City; Muniz and Corialis, Numa; John Ritter, Swink; Joe Campbell, Swink; Howard Catheran, Swink; W. R. Mallet, Swink; Bert Catheran, Swink; K. Murakami, Hadley; Kikchi and Shenigahi, Hadley; John Ostman, Fort Lyons; J. W. Reynolds, Hawley; John Addington, Swink; K. Kusaka, Kreybill; Sam Mauryama, Hawley; O. Nakayama, Hawley; Y. C. Masuda, Rocky Ford; H. S. Otuski, Rocky Ford; Kibby and Call, Rocky Ford; Frank Smith, Rocky Ford; Tomosme and Akimoto, Rocky Ford; E. Wakasugi, Fort Lyons; Y. Mizuguchi, Fort Lyons; S. O. Haroma, Fort Lyons; I. Tamura, Fort Lyons; S. Shimizu, La Junta; M. Sumida, La Junta; U. Sumeda, La Junta; F. Fujimama, Swink; Y. Sheba, Swink; K. Sonato, Swink; Roy Miller, Rocky Ford; M. A. Kobato, Rocky Ford; John Sakai, Las Animas; K. S. Endow, Las Animas; T. H. Endow, Las Animas; G. Okowa, Rocky Ford; Henry Sowe, Las Animas; and Clyde Hawkins, Ordway, all in Colorado.