SMALL GRAINS FOR IRRIGATED FARMS IN COLORADO

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GOOD SEED AND GOOD FARMING RESULT IN PROFITABLE CROPS IN ANY SECTION. THE USE OF GOOD SEED OF HIGH-YIELDING, ADAPTED VARIETIES IS OF GREATEST IMPORTANCE TO COLORADO FARMERS, IF THEY ARE TO MAKE AS LARGE PROFITS AS POSSIBLE. FORTUNATELY FOR THESE FARMERS, THRU EXPERIMENT STATION TRIALS AND FROM FIELD DEMONSTRATIONS BY FARMERS UNDER THE SUPERVISION OF THE EXTENSION SERVICE, THERE IS AVAILABLE CONSIDERABLE INFORMATION ABOUT THE BEST VARIETIES FOR EACH SECTION. BETTER STILL, THERE ARE ADEQUATE SUPPLIES OF SEED OF THE BETTER VARIETIES GROWN IN MOST LOCALITIES, THUS PERMITTING ALL WHO WISH TO PLANT GOOD SEED OF THE BEST VARIETIES TO DO SO.

IRRIGATED-FARMING CONDITIONS IN COLORADO VARY GREATLY FROM ONE LOCALITY TO ANOTHER. IN THE FIELD CROPS THERE ARE VARIETAL DIFFERENCES WHICH FIT NEARLY EVERY SOIL, TEMPERATURE, WATER OR GROWING-SEASON REQUIREMENT. FOR THESE REASONS SEVERAL VARIETIES OF EACH OF THE MAIN KINDS OF GRAIN ARE RECOMMENDED, FITTING AS THEY DO INTO DIFFERENT CONDITIONS. THIS CIRCULAR IS WRITTEN WITH THE HOPE OF GETTING FARMERS TO PLANT GOOD SEED OF THE BEST ADAPTED VARIETIES FOR THEIR INDIVIDUAL FARM CONDITIONS.

MAN Y TIMES FARMERS PLANT EXPENSIVE SEED, WHICH HAS BEEN HIGHLY ADVERTISED AS A NEW OR WONDERFUL CROP, ONLY TO FIND THAT IT IS AN OLD VARIETY GIVEN A NEW NAME BY THE PROMOTER. WE NEED IN COLORADO GREATER STANDARDIZATION ON THE PROVED VARIETIES. FARMERS GENERALLY SHOULD LET THE EXPERIMENT STATIONS DO EXPERIMENTING WITH NEW VARIETIES. IF A VARIETY HAS BEEN PROVED BY AN EXPERIMENT STATION, FARMERS SHOULD TRY IT OUT ON THEIR OWN FARMS IN A SMALL WAY UNTIL IT IS PROVED IN THE LOCALITY OR ON THE FARM.

GOOD SEED MEANS NOT ONLY SEED OF ADAPTED, HIGH-YIELDING VARIETIES, BUT SEED THAT IS CLEAN AND FREE FROM WEED SEEDS. IT MUST ALSO GROW. FARMERS SHOULD REQUIRE ON ALL SEED A TEST AS TO THE PURITY AND GERMINATION OF THAT SEED. SECURING GOOD SEED IS ONE OF THE MOST CAREFUL, AND ONE OF THE MOST PROFITABLE JOBS ON THE FARM.

ANY LIST OF STANDARD VARIETIES FOR COLORADO WILL UNDOUBTEDLY CHANGE FROM TIME TO TIME, AS THERE ARE NEW VARIETIES BEING PRODUCED AND TRIED EACH YEAR, SOME OF WHICH WILL PROVE SUPERIOR TO VARIETIES WHICH WE NOW THINK THE BEST. GOOD FARMERS WILL GROW THE BEST VARIETIES NOW KNOWN. WHEN NEW AND BETTER VARIETIES HAVE BEEN PROVED BY EXPERIMENT STATION AND FIELD TRIAL, THEY WILL WANT INFORMATION ABOUT THEM AND WILL WANT SEED OF THE BEST
variety. To meet such needs the extension service will revise this circular on varieties from time to time and there will be available in the various communities of the state, pure seed of the better varieties.

STANDARD VARIETIES OF WHEAT FOR IRRIGATED FARMS

Kanred.—Kanred is a bearded, hard, red winter wheat, which was developed in Kansas by a selection from Turkey. In Colorado we find Kanred to be a better-yielding variety than Turkey. It is more resistant to leaf and stem rust, and a few days earlier than Turkey. The grain is midlong, plump, hard red and equal in milling and baking tests to Turkey. Kanred can be distinguished from Turkey by being a few days earlier and having a longer beak or secondary awn on the glume. The straw of Kanred is white and weak. In the bin Kanred cannot be distinguished from Turkey.

Turkey.—Turkey is a bearded, hard, red winter wheat, medium early, producing a hard, red wheat of good quality. The
straw is fairly weak and white in color. Turkey has white chaff and awns. It was brought into the United States from Crimea about 1857. It is now, together with Kanred, the leading hard, red winter wheat grown.

Black Hull.—Black Hull is a bearded, hard, red winter wheat, resulting from a selection out of Turkey. The head characters are similar to Turkey, save that there are usually black stripes on the glumes, or often times the entire glume is black. The awns are white to dark in color. This variety is a trifle earlier than Turkey and has a stronger straw. The quality of grain is good, altho in Kansas and other states the grain is not as hard as Turkey. Black Hull is not as winter hardy as many of the other varieties, so should not be grown where there are severe winters. Black Hull is now being grown satisfactorily in Logan county and in the Arkansas Valley. For most sections Kanred or Turkey is to be preferred.

In some sections there is a small demand for a soft, red winter wheat. Of such wheats Fulcaster, a bearded, soft, red winter wheat, and Ghirka winter wheat have yielded best. Neither has yielded so well as Kanred or Turkey, and both are poorer milling wheats, so are not to be recommended.

SPRING WHEATS

Marquis.—Marquis is the principal spring wheat grown in Colorado. It justly deserves this position, as it is one of the highest-yielding, good-quality spring wheats. Marquis is an early maturing variety. It has a tapering head and is awnless, save for a few short awns at the apex. Glumes and straw are white, and the straw is strong. The grain is hard, red in color, and of excellent quality in milling and baking tests. Marquis, being quite early in maturity, often escapes rust damage, from which later-maturing wheats often suffer. Marquis does not tiller heavily, so should be seeded at a heavier rate than other spring wheats. Because of its early maturity, Marquis is an excellent wheat for the higher altitudes, or where late August rains cause rust damage.

Defiance.—This is a late-maturing, white spring wheat, giving good yields and quality, when not subject to rust damage. The head is tapering and awnless, save for a few awns at the tip. The chaff is white. Straw is white and fairly weak. Kernels are white and from semi-hard to hard. Quality of Defiance in Colorado is good. For years this was one of the standard wheats, but has been replaced by Marquis in most sections for a milling wheat. There are sections where Defiance is raised for feed.
Kitchener.—Kitchener is a hard, red spring wheat, similar to Marquis, except that it is a little later, has a longer straw, and stools a little more heavily. It has a strong, white straw with purple bands at the nodes. Grain is of about the same to a little poorer milling quality than Marquis. The head of Kitchener is beardless, save for a few apical awns. It is slightly clubbed at the tip.

There are other wheats grown in Colorado, but the above mentioned are the standard varieties. Of these other wheats grown in small sections, Red Bobs does very well and is an early, hard, red spring wheat, similar to Marquis, altho a trifle earlier, having a smooth tapering head with no awns at all. It is not as high a yielder as Marquis and is susceptible to rust. Kota is a red, bearded, spring wheat, usually not grown under irrigation. It does not yield as well as Marquis and is susceptible to smut. Dicklow is a smooth, white spring wheat, somewhat similar to Defiance, with a more compact head, a little softer grain and a few days earlier in maturing. It is grown mostly on the Western Slope in Colorado for feed.
BARLEYS FOR IRRIGATED LANDS

Barley is a crop that should be raised on more Colorado farms, as it is one of the highest producers of feed per acre of any of the crops grown. Thru the work of the animal husbandry section of the Colorado Experiment Station, barley has been proved to be practically the equal of corn for feeding stock. Barleys have the further advantage of maturing quickly, using less water, shading the ground less than other crops, so make an excellent crop to use as a nurse crop for the starting of alfalfa, clover or grass seeding. Best varieties of barley for Colorado are:

**Trebi.**—Trebi is a six-rowed, hulled bearded barley, being quite similar in appearance to Coast, save that it is a lighter color, and having a plumper grain with a thinner hull. Under irrigation Trebi has proved to be the best-yielding barley in Colorado. It is a few days earlier than Coast, and has a shorter straw, which is medium strong. The grains have less hull than Coast and
the awns thresh free from the grain. Where there are no ob-
jections to a barley with awns, Trebi is the best sort under irri-
gation.

Colsess.—Colsess is a hooded or awnless, six-rowed, hulled
barley, resulting from a cross made at the Colorado Experiment
Station between Success and Coast. Colsess is the highest yield-
ing of the hooded barleys and is practically as high yielding as
the common bearded sorts. Unlike other hooded barleys, the
straw of Colsess is strong and the head does not shatter easily.
The kernel is hulled, is slightly blue in color and has a fairly thin
hull. Kernels are not as plump as of Trebi or some of the two-
rowed barleys, particularly when grown in the warmer localities.

Colsess is very early maturing and is pre-eminently suited
for growth in the mountain regions, both under irrigation or on
dryland conditions. It has a further value in the mountain re-

gions as a hay crop, either grown alone or mixed with peas.

The two barleys mentioned are best suited to the irrigated
conditions in Colorado. Coast was formerly the best bearded
barley for that condition, but has been replaced by Trebi. Suc-
cess or Horsford, which was the hooded, hulled variety commonly-
grown, has been replaced by Colsess, which many times yields
double the former variety.

A few growers in mountain regions still grow a hull-less
barley, of which Himalaya or Nepal are best. Himalaya is a
bearded, six-rowed barley, which threshes clean. It is exceed-
ingly hardy, quite early, but only a fair yielder. Nepal barley
is likewise a hull-less barley, but has no beards. It is one of the
lowest-yielding barleys. It is, however, the highest-yielding,
beardless and hull-less barley.

OATS FOR IRRIGATED LANDS

While oats are not of as great importance in Colorado as
some of the other crops, the quality and yield secured make Col-
orado one of the best places to grow oats. Since oats are not as
adaptable to climatic conditions as wheat or barley, only the best-
adapted varieties should be planted. Best varieties for Colorado
with the limitations for each are listed below.

Colorado 37.—Colorado 37 is a selection out of Swedish type
oats which was made in the San Luis Valley. It is an open-pani-
cled oat with the head branched evenly, with spikelets carrying
two or three grains. Kernels are white, fairly long and fairly
plump. The hull is thin. In this variety the larger kernel usual-
ly carries an awn, which is twisted and black at the base.
This oat is a mid-season oat with a medium-strong straw. To date it is the highest-yielding oat over a period of years at the Colorado Experiment Station and in farm trials.

**Swedish Victory.**—Swedish Victory is another oat grown by a number of farmers in Colorado. It is a Swedish Select type and very similar to Colorado 37, save that it has a shorter, plumper kernel, more pointed at the ends. Swedish Victory has not given quite the yields at the station that Colorado 37 has.

Other oats, which have given excellent yields at the experiment station, but which have not been grown to any large extent on Colorado farms, are:

**Great Dakota.**—Great Dakota is a Swedish Select type of oat, which is a little later than Colorado 37, has a little weaker straw, but is an excellent yielder.

**Gold Rain.**—Gold Rain is another oat, which has given promise. It is an open-paniced oat, having yellow, long, rather weak straw. It matures about the same time as Swedish Select and has given good yields. The grain is long, thin, and fairly heavy, having a thin, yellow hull. For the most of the state, Colorado 37 and Swedish Victory appear at this time to be the best suited to our needs.
Kanota.—Kanota is a red oat, which is adapted to the hot climates, as it ripens very early. It is an open-panicled oat. The kernel is medium long, fairly plump with a medium-thick hull. The straw is of medium height and strong. Kernels usually have no awns or basal hairs.

Nebraska 21.—Nebraska 21—a White Kherson—is an open-panicled oat with two and sometimes three oats to the spikelet. Kernels are white in color, pointed, medium long and slim, having a very thin hull. They are usually awnless or have a short, white awn. Nebraska 21 is a pure line selection out of Kherson. It is one of the earliest maturing oats in Colorado, yielding fairly well. For this reason Nebraska 21 is recommended for the higher altitudes, where early maturity is a factor.

Some side oats, such as Bliss Side Oats, are grown in Colorado and do fairly well. Most of the side oats have heavy hulls and are later in maturity than Swedish type or the Kherson oats and usually yield considerably less.

RYE FOR IRRIGATED LANDS

Rye is not often grown under irrigation, save for temporary pasture or for a grain crop on poor land.

Rosen.—Rosen rye, a large, fall rye, is the recommended variety. Kernels are long, plump and blue-green in color. Rosen is the highest-yielding rye grown at the experiment station.

CORN FOR IRRIGATED LANDS

While corn perhaps does not properly come under the classification of a small grain, mention of the standard varieties for the irrigated sections should be made here. In the northern part of the state and at altitudes above 5,000 feet, the best variety of corn is Minnesota 13. For the lower irrigated regions, Reid's Yellow Dent and Iowa Silvermine are the recommended varieties. For the irrigated sections, where Minnesota 13 will not do well, due to short growing season, corn should not be grown, but should be replaced by barley, as a producer of feed, or by sunflowers, as a producer of silage.

Minnesota 13.—Minnesota 13 is a medium-early corn, having a fair-sized, strong, leafy stalk and producing usually one ear to the stalk. Average length of the ear is from 7½ to 8½ inches; number of rows or kernels, 16; kernel type, medium deep, smooth dent, deep yellow with a full germ. The cob is red.

Reid's Yellow Dent.—This corn is adapted to a climate having two or three weeks longer growing season than where Minnesota 13 is grown. Reid's has a tall, strong, leafy stalk and
produces ears from 8 to 9½ inches long, carrying 18 to 20 rows of deep, lemon-yellow colored, smooth, dented kernels. Cobs are red.

**Iowa Silvermine.**—A long-season, white dent corn, producing very heavy foliage and ears 8 to 9½ inches long, carrying 16 to 18 rows of kernels. Kernels are medium to rough dent, fairly wide and deep, clear white and have a full germ.

Whatever variety of corn is grown, there will be need of constant improvement by the use of field selection, proper sorting, as to type, and ear testing to make the corn yield and quality what it may.