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OATS IN COLORADO

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Oats in Colorado

By R. H. TUCKER, Extension Agronomist

The acreage of oats grown in Colorado varies between 150,000 and 175,000 acres. Slightly more than 50 percent of the acreage and about 75 percent of the production is at present grown on irrigated land. While oats will produce more bushels per acre than any other small-grain crop, with the lower weight per bushel they do not produce as many pounds per acre as barley. However, the grain is desirable for horse and dairy feed, and for growing livestock, and the straw produced is considered better than that of wheat or barley for feed, and is produced in larger quantity.

In the higher elevations of the State, oats also are grown extensively for hay. The crop has a wide adaptation of soils and altitudes and will tolerate moderately heavy alkali. This crop will make a comparable yield with other crops on heavy, light, fertile, or poor soils.

Varieties.—Nothing is more important than good seed of the best adapted or highest-yielding variety. Plant only such seed.

On Irrigated Land.—Colorado 37 is the standard variety of irrigated oats for Colorado. It is a mid-season, stiff-strawed, heavy, white oat yielding the best in most sections of the State. Victory is a similar variety but yields about 10 percent below Colorado 37.

Markton is adapted to the Arkansas Valley, lower western Colorado and warmer sections of the State. It is a yellowish-white oat with a longer kernel but with similar general characteristics. Texas Red, a red variety, yields well in the extreme eastern Arkansas Valley.

Bannock, a newer variety of white, mid-season oats similar to Colorado 37, in recent yield trials, has outyielded all varieties, and has production possibilities in Colorado. For hay production, Bliss Side is the recommended variety.

On Dryland.—Brunker and Kanota, early dark or red-hulled oat varieties are the best dryland varieties for Colorado. There is little choice between them although Brunker has outyielded Kanota slightly in most yield trials. These varieties also have possibilities for grain production in the higher elevations where mid-season oats fail to mature regularly.

Seedbed Preparation

On Irrigated Land.—If the crop is to be planted on land that was in corn, potatoes, sugar beets or other cultivated crops the year before, discing, harrowing, and levelling will provide as desirable a seedbed as plowing and working down, and with reduced labor and expense. If the land was in sod, clovers, or small grain, plowing, levelling and **packing** will need to be done to make a **level, firm** seedbed. Oats being an early planted crop, fall preparation will be very advantageous as spring plowing will be apt to delay planting.

On Dryland.—On dryland, summer fallow is the best preparation for oats. At the U. S. Dryland Experiment Station at Akron, Brunker oats planted in summer-fallow land has averaged 33.1 bushels per acre over a period of years while Brunker oats in adjoining plots on corn-stubble land only produced 19.3 bushels per acre.

Plowing is rarely necessary as a seedbed preparation on non-irrigated land. Chiseling, listing, discing, or one-waying stubble, spring toothling, or otherwise preparing a mellow seedbed 3 to 4 inches deep is deemed sufficient.

Fertilizers

On Irrigated Land.—Oats as a crop are not usually given any special fertilizer treatment but they do respond to good soil. On very rich land, lodging is one of the problems in growing oats so too much manure or fertilizer is not desirable. Phosphate in certain areas hastens and makes for more uniform maturity and improves the yield.

On Dryland.—On dryland no fertilizer is used. The only practical suggestion is to top dress the land after planting, with 2 to 3 tons (not more) of manure. This often aids in preventing wind damage and produces some extra yield if moisture is not too deficient.

Planting Dates and Rates

On Irrigated Land.—Eighty pounds per acre of good, clean, oat seed of high germination is the recommended planting rate for irrigated land. The best date of seeding is between March 15 and April 15, according to the altitude and earliness of the season, the earlier date being for the lower warmer regions of the State.

On Dryland.—Five pecks or about 40 pounds is the recommended rate of planting on non-irrigated land. Best planting dates for eastern Colorado range from late March to early April.

SEED TREATMENT

By W. J. HENDERSON, Extension Plant Pathologist

Covered and loose smut are common diseases of oats. For covered smut the kernels of infected plants are replaced by masses of black smut spores that are covered with a thin, whitish membrane. Loose smut has all the general characteristics of covered smut except that the whitish membrane which covers the spore mass usually breaks and the spores are scattered by the wind. They become attached to the oat kernels where they overwinter.

Both smuts may be controlled by treating the seed oats with new improved ceresan at the rate of one-half ounce per bushel. The dust may be applied to the seed grain in a barrel treater, or other mechanical treater. The treating should be done out-of-doors, or the operator should wear a dry cloth or respirator over his nose and mouth. The treated grain should be stored in sacks, wagon box, or bin, 24 to 48 hours prior to planting. New improved ceresan is poisonous, therefore, do not feed treated grain to livestock.

IRRIGATION

By FLOYD E. BROWN, Extension Irrigation Specialist

When it is necessary to irrigate to insure germination, it is better to irrigate before planting. Irrigation after planting may produce a crust through which the young plants cannot force their way.

The greatest amount of water is required from the jointing stage to the blossom stage or while the plants are growing rapidly. Heavy irrigation applied while the plants are small often produces yellow leaves and retards growth. Late irrigations often produce new growth of green stems, delay maturity, and may cause the crop to lodge. Under all conditions the crop should be kept in a good growing condition.

If there is a shortage of irrigation water or enough for only one irrigation it should be applied between the jointing stage and the heading stage.

Earlier and more frequent irrigations are desirable for oat hay than for oats produced for grain.

INSECT PESTS

By SAM C. McCAMPBELL, Extension Entomologist

Grasshoppers and cutworms are the principal insect pests of oats. Poisoned bait mixed as follows will control both of these pests:

Coarse wheat bran—100 pounds

Liquid sodium arsenite— $\frac{1}{2}$ gallon

OR crude white arsenic

OR paris green—4 pounds

Water to moisten, about 10 gallons

Sawdust may be substituted for $\frac{3}{4}$ of the bran in the above formula.

This bait should be scattered at the rate of about 20 pounds per acre.

For grasshoppers, scatter this bait in the morning when the temperature is 60° to 65° F.

For cutworms, scatter bait in the evening about sundown.

Harvesting, Storage and Marketing

Most of the irrigated oat crop is harvested with a grain binder and either threshed from the shock, or stacked and later threshed. In order to have the best quality grain, most of the heads should be yellow ripe but the stems may still be slightly green when the binding is done. If threshing is delayed until the sheaves are well dried and the grain gone through the sweat, the grain may be stored safely without danger of heating.

There is a good market for heavy, bright, white, oats. Too often the crop contains other grains or weed seeds, has green immature grain or is otherwise penalized on the market. Most all of Colorado's oat crop is fed on home or neighboring farms, however.

Better crops can only be produced by using **good clean** seed, adopting the best cultural practices, and doing them on time.