Barley In Colorado

By R. H. Tucker and D. W. Robertson

Barley is an important crop in Colorado, both on irrigated and dry land. The acreage planted to barley has been increasing for a number of years, as irrigated farmers find how well this crop fits into their rotation plans, and the plains farmers find it a fairly sure source of grain for livestock feeding. The harvested acreage of barley on irrigated land has exceeded 200,000 acres, while non-irrigated acreage has varied from approximately 300,000 to 400,000 acres.

The crop is adapted to a wide range of soil and climatic conditions. It is, however, a cool-season crop and makes the best yields of heavier barley when planted so as to mature before extremely hot weather.

Barley is extensively used as a nurse crop for alfalfa. It is ordinarily somewhat shorter of straw than oats or spring wheat, and does not produce as much shade as these other crops. In the higher elevations, hooded and bald barleys are used for hay.

Varieties to Plant

Good seed is the first requirement of a good crop. Plant only well-cleaned, high-germinating, weed-free seed of the best adapted variety.

Irrigated Land.—Lico, a relatively new, smooth-awned variety has been found the highest-yielding, irrigated, feed barley at the Fort Collins and Fort Lewis Experiment Stations. This variety has yielded slightly over 5 percent more than Trebi in the 8-year period from 1934 to 1941, inclusive. Aside from the smooth awns, this variety has stiffer straw and matures from 3 to 7 days earlier than Trebi. It is susceptible to loose smut, and good clean seed should always be planted. Velvon, a similar variety developed in Utah, has not yielded quite so well as Lico. Trebi is the other recommended irrigated variety. It produces good yields of plump, high-quality, feed barley.

For malting the demands of the market must be kept in mind. There is not an extensive brewing-barley acreage in Colorado, and brewers are at present preferring Manchurian (Scotch) variety.

Winter barley has been increasing in popularity in Colorado recently, replacing some of the winter-wheat acreage. It is not so winter hardy as either winter rye or winter wheat. It has failed 1 year out of 4 at Fort Collins, and 2 years out of 4 on dry land at Akron (1938-1941). When it does escape winter killing, the yields are promising and many growers prefer it for fall and early spring pasture. Observations to date indicate that dry soil in the fall and winter contributes greatly to winter killing. On this basis it is only recommended that winter barley be planted in wet falls or on irrigated land where late irrigation is possible.

Dry Land.—Beecher, a new 6-row, semi-smooth-awned varicty, is recommended for dry land. At Akron, on the U. S. Dry Land Experiment Station farm, Beecher has yielded 17.6 percent more than Club Mariout from 1938 to 1941, inclusive. Other dry-land barley varieties are Flynn, yielding 10 percent less than Club Mariout, Spartan yielding 1.1 percent less than Club Mariout, and Blackhull Selection No. 1180, yielding 12.5 percent more than Club Mariout. Yield comparisons for all varieties except Beecher are based on yields from 1936 to 1941, inclusive. Spartan and Blackhull Selection No. 1180 are 2-row varieties, and usually produce plumper, heavier seed. They are, however, more susceptible to grasshopper damage than Club Mariout or Beecher.

Seedbed Preparation

Irrigated Land.—If barley is to be planted on land that was in sugar beets, potatoes, corn, or other cultivated crops, discing, floating, and harrowing will ordinarily make a satisfactory seedbed. Fall preparation, if the land is to be plowed, has the advantage in permitting more timely planting in the spring.

Dry Land.—On dry land, the best preparation is summer fallowing the year before planting. Corn or bean land may be disced and planted. An early season crop like barley will not do well on land that was in sorghum the year before.

Planting Dates and Rates

Spring barley should be planted as early as danger of severe freezing at emergence is past. Recommended seeding dates are from March 1 to April 15 on either dry or irrigated land, although earlier seeding on dry land is advocated.

The rate of seeding for irrigated land is 80 to 90 pounds per acre and for dry land, 40 to 50 pounds per acre. The earlier the seeding date, the less seed required, and for later dates of seeding, the heavier the rate per acre.

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Fertilizers

Irrigated Land.—Barley is not usually given any special fertilizer treatment but good yields will only be secured on soils of high fertility. The residual effect of manure and other fertilizers to other crops in the rotation period on irrigated land will help the barley yield. Extremely rich soil and an abundance of moisture may cause barley to lodge. Treble super-phosphate on some soils in Colorado will hasten and promote more uniform maturity and increase the yield.

Dry Land.—Light top dressings of manure at the rate of 2 to 3 tons per acre is the only fertilizer suggestion for dry land. On many soils this will improve the yield and sometimes aid in preventing surface movement of soil. Usually no burning will occur from such a light application.

DISEASES OF BARLEY

By W. J. Henderson

Covered and loose smut are the most common diseases of barley in Colorado. Loose smut is distinguished from covered smut in that the membrane of the smut spore mass which replaces the barley kernel, is broken, permitting the spores to be blown away, leaving only the naked rachis (stem) of the barley head. Loose smut is carried inside the barley kernel and ordinarily seed treatment is not an effective control.

Control may be obtained by careful selection of seed from fields that are free from loose smut. Colorado registered seed will not contain over a trace of loose smut. If such seed cannot be obtained, control may be obtained by the following method: (1) Place ½ bushel of the seed-grain in loose-meshed sacks. (2) Soak each ½ bushel lot of seed for 4 hours in water at room temperature. (3) Then soak the seed for 5 minutes in water held at 120 degrees F. (4) Then place the seed in the hot-water bath which is held constantly at 129 degrees F. for 13 minutes. (5) Then dip the grain in cold water, drain, and spread out on a clean floor or a canvas to dry. It is best to double the rate of seeding because of the unavoidable injury to seed germination.

All barley seed should be treated for covered smut. New improved ceresan, applied to the seed at the rate of ½ oz. per bushel is an effective control. The dust may be applied in a barrel treater or the Minnesota seed grain treater, and should be done out of doors. The treated grain should be stored in sacks, wagonbox, or bin for 24 to 48 hours prior to seeding. This dust is poisonous and any seed so treated should not be fed to livestock.

IRRIGATION OF BARLEY

By Floyd E. Brown

When it is necessary to irrigate to insure germination, it is better to irrigate before planting.

One or two irrigations after germination, of not more than 6 acre-inches per acre for each irrigation, are usually sufficient to mature the crop. Light, well-drained soils may require three irrigations.

The greatest amount of water is required from the early jointing stage to the heading stage. The plants, however, should never suffer for water during the early stages of growth. Heavy application of water while the plants are small may produce yellow leaves and retard growth. Late irrigation of rank barley makes it likely to lodge.

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

BARLEY PESTS

By Sam C. McCampbell

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

Coarse wheat bran.....100 pounds
Liquid sodium arsenite..... ½ gallon
OR crude white arsenic
OR paris green..... 4 pounds
Water to moisten.....about 10 gallons

Sawdust may be substituted for ¾ of the bran in the above formula. This bait should be scattered at the rate of about 20 pounds per acre. **For grasshoppers,** scatter bait in morning when temperature is 60° to 65° F. **For cutworms,** scatter bait in evening about sundown.

Migrations of army worms and webworms may be stopped by deep furrows in which poisoned bait is scattered.

Harvesting, Storage, and Marketing

A large part of the irrigated barley and a considerable part of the dry-land barley is harvested with binders. Combines are successfully used but the crop has to be thoroughly matured and dry. Combining is a cheaper way of handling the crop but the risk of lodging and loss from wind and hail damage is increased in waiting for the crop to dry sufficiently to permit the safe storage of the grain. Binding may be done when the majority of the heads are completely filled and turning yellow, after which the crop is shocked, and later either stacked or threshed from the field. The sheaves must be well dried and the grain have been through the sweat before threshing from the shock. Then the grain is ready for safe storage.

Barley is used mostly for feed and by the farmers producing it. However, there is a ready market for bright, heavy, clean barley. Good yields of good quality certainly make for more profit from the barley crop.