

Grass Seed Production

potentially profitable crop suitable
for place in crop rotation system

D. C. Sumner and Milton D. Miller

The following article is an abstract from a forthcoming Agricultural Extension Circular on Grass Seed Production now in preparation by the same authors.

Good grass seed crops can be grown throughout most of California.

At present there are 585,000 acres of irrigated pastures in the state and after the various statewide irrigation projects are completed, this acreage may double.

The demand for seed of grasses adapted to irrigated pasture seedings has increased steadily each year. If the maximum acreage is reached, about two million pounds of seed will be required annually for irrigated pastures alone.

There are 10,000,000 acres of brushland in California that are potential grassland.

The recent demand for grass seed species especially adapted for range use has been limited because: 1, annual range acreage cleared has been low; 2, prices of some grass seeds adapted for range use have been very high due to limited supply.

Range owners probably will do more seeding as brush clearance increases and seed supplies become plentiful at reasonable prices.

Farmers already producing alfalfa, ladino clover, sudangrass, or vegetable seeds might find it profitable to add grass seed production to their rotation program.

It would be best to select ladino clover, red clover or one of the new alfalfa varieties such as Ranger, Buffalo or Atlantic as the basic seed crop. To the basic seed crop can be added a modest initial acreage of one of these six grass seed crops—Harding, Tall Fescue, Smilo, California

Brome, Prairie Brome and Harlan Brome. The reasons for this are twofold:

1. The know-how of legume seed production is widespread in the key areas of the state.

2. The market for these legume species is nationwide.

As production experience is gained and the market develops, a production program can be altered to meet demand.

Planting in the early fall insures larger and more productive plants in the first crop year. Planting at this time is preferred even if pre-irrigation is necessary to prepare a seedbed. Perennial grasses are slow in becoming established and do not reach their maximum growth the first year.

Depending upon local conditions, seeding should be done between October 1st and December 1st, or during the period when cereal crops are usually sown.

In most areas of California, seeding before the first fall rains is rather hazardous. An unusually early rain may provide sufficient moisture at or near the surface to germinate the seed; then the surface soil may dry out before the normal rainy season sets in. This might cause loss of the stand.

In areas subject to severe frosts, seeding should be done early enough to insure seedling plants being well established and in the third or fourth leaf stage before the first frost.

Stands may be obtained if seeding is done in late winter or early spring, but



yields for the first year are usually very much lower than when seeding is done in the fall. Spring seedings are only recommended for those areas where fall seedlings will not survive the winters.

A fine, firm seedbed, as used in alfalfa production, is essential—good seedbed preparation reduces weed problems.

Land selected for grass seed production should be as free as possible from weeds. Seedling perennial grasses grow slowly and weeds can soon weaken a good stand of young grass.

For fall planting, the land should be spring plowed and summer fallowed, allowing no weeds to set seed.

Spring planted seedbeds should be on land fallowed the previous year, plowed early, and worked into a fine, firm, weed-free condition.

Before planting, the land should be harrowed lightly to eliminate all germinating weeds. Care should be taken to prevent turning up deeper weed seeds.

Land should be cultipacked before and after seeding.

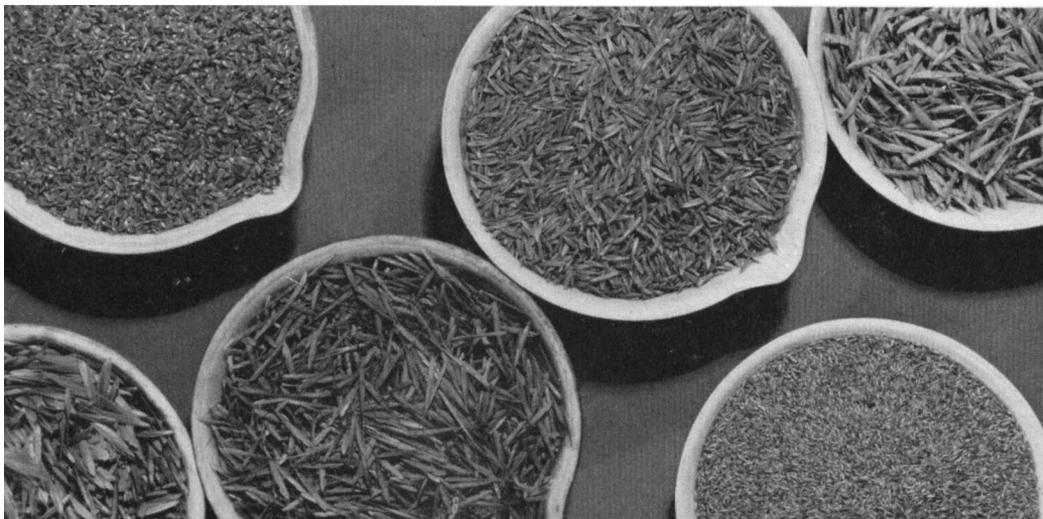
In certain areas, it may be advisable to irrigate up the weeds after the seedbed is prepared and to spray them out with a fortified oil spray before seeding.

Weed seeds and seeds of other grasses are difficult, costly, and sometimes impossible to remove from a harvested seed crop.

The grass seed produced must meet the demands of commercial seed users. Therefore the grower must take every precaution to insure a top quality product of recommended varieties.

Seed is the least expensive item in the total cost of production. Only the best

Top quality weed-free seed. Upper row, left to right: Harding, Tall Fescue, Harlan Brome. Lower row, left to right: Prairie Brome, California Brome, Smilo.





Binders should be modified by the addition of pans under the drapers and tying platform to catch seed shattered in cutting and tying. Note short pieces of hose on reel slate which are centered on rows and help in keeping cutter bar free.

seed of the highest quality should be used, such as Certified Seed which meets the exacting requirements—for genetic purity and quality—of the California Crop Improvement Association.

The best yields are obtained from planting in rows which should be on the contour to reduce erosion problems.

Row widths for perennial grasses should be between three and 3½ feet with the choice of width depending upon the cultivation equipment at hand.

Extensive tillering and crown growth after the first year will almost close over the inter-row spacing. In almost all cases, too close a row spacing will result in lower yields.

Seed fields have been planted to solid stands, but the stands were short lived and weed control was difficult.

So far, under California conditions, there have been no diseases in seed fields of Harding, Tall Fescue, Smilo, California Brome, Prairie Brome and Harlan Brome.

Insect damage may become troublesome but only two isolated cases have occurred to date.

The actual date of harvesting is determined by observing carefully the maturing stand.

The crop should not be harvested until the majority of maturing heads throughout the field are entering the hard dough stage; usually about the time the top seeds in the head start to shatter.

Standard grain farm equipment can

be used in harvesting grass seed although some modification is desirable.

The most universally accepted practice is binding, shocking, and delivery to a stationary thresher.

The binder must be modified to salvage shattered seeds, otherwise seed loss is great. This can be done by fitting catch-pans under the drapers and the tying platform. The value of the seed saved by these pans may be enough to pay harvesting costs.

The bundles should be of medium size and forked off the binder and placed gently on the ground. Loose shocks will facilitate drying.

The time required for curing in the shock varies according to location and weather. In most parts of California, threshing may begin in one to three weeks after binding and shocking.

Under California conditions, seed threshed from cured shocks usually can be safely bagged and promptly moved into warehouses. If the moisture content of the threshed seed is high the bags should be filled only partially and left in the field to dry. They should be turned often enough to prevent heating and moulding.

The procedure of binding and curing in shocks is used most generally, but some growers use direct harvesting methods regardless of heavier seed losses.

When headers and combines are used the seed crop should be left to mature a little longer before harvesting.

The sickle bar should be kept high to avoid cutting the basal growth of the grass plants. This protects the plants and lessens clogging of the combine.

The high moisture content of the seeds is another disadvantage in combining as special precautions are required to obtain proper drying and avoid loss by heat and mould.

Threshing from a windrow does not work satisfactorily in row plantings. Weeds, rocks and clods are picked up, complicating threshing and cleaning problems.

D. C. Sumner is Associate in the Experiment Station, Agronomy, Davis.

Milton D. Miller is Associate Agriculturist, Agronomy, in Agricultural Extension, Davis.

Further information concerning Certified Seed may be obtained from the local Farm Advisor or from the Crop Improvement Association, University of California, Davis.

The fluted feed type drill with double disk furrow openers provided with depth bands. Note the furrowing shoes mounted in front of each drill run.

