

Cereals for Central Ore.

By L. R. Briethaupt, Superintendent Harney Branch Experiment Station.
(Oregon Countryman.)

In a consideration of cereal crops adapted to Central Oregon it must be remembered that climatic conditions—moderately severe winters, short growing seasons and low precipitation—are potent factors in determining crops and crop varieties that can be economically produced. Varieties admirably adapted to regions where winters are mild, or seasons long and rainfall ample, may be total failures here.

The Harney Branch Experiment Station was established in 1911. Among other things related to the Agriculture of Central Oregon, experiments with cereal crops on unirrigated land are conducted, that the crops best adapted may be determined, and that high yielding varieties of these crops may be segregated from the many existing varieties or developed by selection or breeding.

It has been the policy of the Station from the start to use the summer fallow method so essential to the profitable production of cereals in this region. Most of the Station was fallowed in 1912, the first real results not having been obtained until 1913. Since this two more years work has been done.

Three years is not long to accumulate reliable data on crop yields. Though every precaution be taken seasonal variations play such an important part that only by averaging several year's results can accuracy be approximated. Many important facts have already been established and many points are yet to be cleared up.

Cereal crop and cereal crop variety trials have been conducted with winter wheat, oats, barley, emmer, spelt, and rye; also with spring wheat, oats, barley, emmer, rye and flax. Trials have been made with winter cereals sown very early in the spring.

Of the winter cereals tested, winter wheat and winter rye are most promising. Of these, winter wheat is the most dependable as a grain crop under good dry farming methods. The Turkey Red group of wheats have shown considerable superiority in hardiness as well as high yield of high quality wheat. C. I. No. 1558 has produced the highest average yield of the several Turkey Red strains on trial.

Winter rye heads very early and is often frosted, thus making it an unsafe grain crop, except in localities where frosts are infrequent. As a hay crop it is good, especially where rodents and rabbits are numerous. It comes on earlier than oth-

er cereals and is not so palatable to these pests.

Winter emmer, spelt, oats and barley have not given good results in any of the trials conducted. All suffer severely from winterkilling and are otherwise unadapted.

Of the spring cereal crops, spring wheat has given the most profitable yields. Of the many varieties grown, Early Baart has the highest average for the three years trial. It is a wheat of good quality and altogether well adapted to our conditions. A variety known as C. I. 2495 newly put on trial made an excellent showing in the season just past and may prove of worth later on.

Oats have ranked second of the spring cereals. Under dry farming conditions, they will probably average a poor second to wheat. A large number of varieties of this crop have been grown but sufficient data has not been collected from which to select any one best variety. Sixty Day, Swedish Select, Iowa Silvermine, Big Four and others have all done well in individual seasons. Sixty Day is probably the best on dry land.

Spring barley has not been a profitable dry land crop. Like the oats, it should give way to wheat and rye as grain yielders. Both are excellent crops under irrigation and are to be recommended for growing on Central Oregon irrigated lands. Swanneck and Hanneken varieties of barley have yielded best in wet years; White Smyrna, Marious and California Feed in dry years.

Spring rye is undoubtedly a safer grain crop than winter rye under average conditions, but it is not as good a hay yielder. Flax yields well on dry land in seasons of good summer rains. Its best use in Central Oregon, it transportation ever reaches this part of the state, will be as a sod crop on newly broken wild hay meadows.

Of the winter cereals sown early in March, winter rye has given excellent results both in grain and hay; winter spelt has done very well; winter oats, barley, emmer and wheat have not been practical so sown.

So far as the tests at the Harney Branch Experiment Station have gone, the best cereal grain crops for Central Oregon dry lands are Turkey Red winter wheat, Early Baart spring wheat and spring rye. Winter rye is a good hay crop and may be grown for grain in favored localities. For irrigated lands, oats and barley may be added to winter and spring wheat as a practical grain crop. Flax may also come into use as a first crop on sod lands.

SWEET CLOVER A GOOD CROP IN CROOK COUNTY

A. E. Lovett, Crook County Agriculturist.
(Oregon Countryman.)

Sweet clover as a cultivated crop is a new thing in practically all parts of the United States. In Oregon its value has not been appreciated as it should be. Through recommendation of the county agriculturist, 17 acres of sweet clover were planted last year and over 200 acres were planted this year in Crook county. The results obtained lead us to believe that this crop will prove to be one of the most valuable crops for Eastern Oregon. Sweet clover was planted on both irrigated and dry land in 1915 and reports from farmers growing the crop have been received at my office. I also visited a large number of fields of sweet clover personally. No failures have been discovered on irrigated land but the success of the crop has been found to depend almost entirely upon the stand obtained. On dry land about one third of the acreage planted was considered this year a failure but in every instance where failure was encountered the cause was found to be a loose seed bed or the planting of the seed too late in the spring for obtaining moisture for germination. All of the sweet clover planted this year was pastured. On one field of twenty acres of black alkali river bottom land which received no water or rains after planting, the crop being planted April 1st, fourteen head of calves and four head of horses were turned for pasturing on June first and from eighteen to twenty eight head of stock kept on this twenty acres until October 1st.

The variety planted is the "Mellottus alba" or white blooming variety. The hulled seed gives best results. Reports from other states show that the sacrificed seed give a much larger percentage germination. The

date of planting in Crook county this season has been generally too late. On irrigated land it may be planted as late as April 1st but on dry land it should be from February 1st to March 30th. To obtain a good stand the seed bed must be firm. All sandy or loose soils should be firmly packed before planting to sweet clover. In planting the soil should not be loosened more than is necessary to cover the seed from one fourth to three fourth inches deep.

Sweet clover will prove a valuable crop to most of the Eastern Oregon soils because of its ability to add humus which is most necessary for profitable production—even though the crop itself be harvested. This is because of its large and numerous roots which are soft and decay readily. The food value of this crop is very nearly equal to alfalfa and there is also much less danger of heat when used for pasture. Well fed stock will usually refuse sweet clover pasture or hay until they have learned to like it but after being turned on the young pasture or forced to eat the pasture or hay one or two days they will learn to like it and will eat it as readily as alfalfa. For pasturing, stock should be turned to the crop when about four to six inches high. When cut for hay it should not be allowed to bloom and makes best hay if cut when about eighteen to twenty four inches high. White blooming sweet clover is a biennial and need not become a pest if not allowed to go to seed. Production of the seed may prove profitable for several years to come as the seed is coming more and more in demand.

DRY LAND ALFALFA IN KLAMATH COUNTY

H. R. Glaisyer, Klamath County Agriculturist.
(Oregon Countryman.)

Demonstration work with alfalfa on dry land, sown in rows far enough apart to cultivate readily, has proven a success on most of our dry land soils in Klamath county this season. Co-operative work was carried on with twenty five farmers in the various dry land districts and in all nine varieties of dryland alfalfas were grown. Out of these nine varieties the most satisfactory results were obtained with the Baltic strain, a nameless variety from Kansas being a close second.

The past season in this section of the state was a very dry one and very unfavorable to establishing a stand of alfalfa, especially on no-irri-

gated soils. The average rainfall is determined at about 13 1/2 inches normally.

The most successful demonstrations were those on deep sandy loam soils which had been summer fallowed the previous season or else in potatoes, thus conserving some of the moisture of the season before. Our best yield was slightly less than three fourths of a ton at the first cutting. Some excellent stands were obtained however on land which had been in grain the previous season. Of these only those which had been plowed deep in the fall and left rough over winter were a success. A demonstration showing the value of deep plow-

ing in the fall, over shallow spring plowing or alfalfa was an eye opener to many not familiar with the crop. Some of the points which are absolutely necessary for a maximum stand of alfalfa on dry lands are as follows:

1. Use of good seed.
2. Inoculate with pure culture bacteria. (If soil contains the bacteria, there is no need of course, but on new land the cost is too small to neglect this.)
3. Sow on summer fallow land.
4. Seed bed should be fine, but not loose.
5. Sow in rows about 3 feet apart so cultivation can be practiced between rows. The rows may be single or double.
6. Cultivation to keep down weeds and to form mulch on surface.
7. Seed drilled as shallow as possible, and thinly.

TO KILL THE PIUTE GROUND SQUIRREL OR "SAGE RAT"

Work Should Be Started When Rodents First Appear.
(By County Agriculturist A. E. Lovett.)

Considerable success has resulted from the organized work against the jack rabbit in Crook county during the past two months. The time for accomplishing the greatest results with the animal have passed for the present. Another farm pest of almost as great importance to the entire county and of great importance in some sections is the little Piute Ground squirrel, commonly known in this section as the "sage rat." Reports from various sections are that this animal has already appeared in the fields and all of those which can be killed at present will mean many times this number out of the fields later in the season.

Many methods have been tried for eradicating this pest but none have succeeded as well as has the use of poisoned grain. Many farmers use the manufactured poisons such as "Woodlark," "Kilmol," etc. Others succeeded as well with preparations of grain and strychnine made at home. The U. S. Biological survey has tested possibly every poison preparation known for eradicating these little animals. R. A. Ward, Assistant in this survey, who has spent considerable time in Crook county this winter recommends the following poison mixture for this ground squirrel: 10 quarts of wheat, 5 quarts of barley (preferably rolled) and 5 quarts of oats. Make a starch paste by dissolving 2 tablespoonsful of gloss starch in a teaspoonful of cold water and adding this solution to 1 quart of boiling water, stirring until a clear thin paste is obtained. Remove from the stove and add to this paste 1 ounce of strychnine powder, 1 ounce of cooking soda and 1-5 oz. of saccharine (1-2 pint of salt may be substituted for saccharine). Stir the mixture until you have a rich, creamy

smooth mixture. Stir in one half pint of corn syrup and then add the whole mixture to the grain in a wash tub or boiler and stir until every grain is thoroughly coated. The stirring must be thorough and if these directions are followed carefully you will have a uniform poison mixture.

Distribute this poisoned grain in small teaspoonful doses near the entrance of each burrow. Better success will be obtained by placing the grain on top of the ground than in the burrows. Remember that this poison mixture is dangerous and that all such grain and utensils used in mixing it must be kept away from children, live stock and irresponsible persons.

As recommended in the work against jack rabbits, thorough, systematic and persistent work in all fields or waste land where these animals are found will prove effective. However, as stated concerning the rabbit work, if only one man undertakes their eradication his attempts will prove vain. Now is the time to do the most effective work. The above poison mixture is recommended as the best at present known. I would seriously recommend that every man consider this little animal a very serious pest and work for his destruction.

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