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CORN

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Corn is rapidly gaining in acreage in the State and a few more years of experience with it will probably fix it as a staple crop for both Eastern and Western Oregon.

Why corn?

Where it does well it is the best silage crop.

Where an early maturing variety is used, it is one of the most productive feed crops. It is available for hogging off in the late summer and fall, as well as for other feeding purposes.

It is a much needed inter-tilled crop.

Oregon must have a cultivated crop and with legumes must build around it a crop rotation. Corn is the only cultivated crop with much possibility for expansion in acreage.

When we produce over 60,000 acres of potatoes, an unusual condition exists if we are able to sell so many advantageously. Beans flood our market at present if we have only 20,000 acres. Root crops are negligible in acreage. Sunflowers for silage are also very limited. We can only expand considerably in the acreage of corn and then must use it for stock feed.

Instead of one-third to one-fifth of our Western Oregon acreage in cultivated crop as would be the case if we were using good rotations, our entire State acreage of all inter-tilled crops is only equal to a strip about two and three-fourths to three miles wide extending from Corvallis to Portland. This little strip is not enough to control weeds or provide the early fall grain seed beds which are so productive of small grain and which pave the way for good clover stands.

Corn does best where the soils are well drained, rich, mellow, and warm and where moisture is available through the growing season. Warm irrigated districts in Southern and Eastern Oregon are best. Warm valleys in the South Coast Region where summer rains prevail are excellent for corn production. Sandy river-bottom lands of the Willamette Valley as well as the mellow rolling and hill soils produce good corn. Usually smaller and shorter-season varieties must be grown.

On early plowed summer-fallow land in Eastern Oregon where the rainfall is 15 to 18 or more inches a year, corn of a narrow-leaved, early ripening variety is especially good. On soils where the air drainage is

good it produces grain up to about 2500 feet elevation and silage to an altitude of about 3000 feet. Sections with much summer frost are not adapted to corn. It is probably not worth while to grow corn on cold or wet soils. Neither does it do well on soils poor in fertility. In some summer fallow sections of very light rainfall, corn does not do well as a substitute for fallow and the succeeding wheat yield is reduced. On much undrained white land and on soils badly run down by grain farming without manure or legumes, corn is not a profitable crop. Even for silage it is not as good as vetch and oats, peas and oats, or sunflowers, on many of the cool soils or in the North Coast District.

Corn thrives on mellow soils rich in organic matter. Where possible to plant on clover or alfalfa sod, better yields are secured. Heavy applications of barnyard manure nearly always show results with corn. There is probably no crop that can use raw or fresh manure more advantageously. When manure is applied it should be disked in and plowed under early in the spring.

On some soils corn responds to commercial fertilizers. A careful study of fertilizer needs should always be made before investing too heavily in them. Results with fertilizers depend on right conditions for good plant development. The soil must be in good mellow condition with enough moisture for growth demanding the additional plant food in the fertilizer. Corn uses nitrogen, phosphorus, and potash and more often responds to nitrogen and phosphorus than to potash under Western Oregon conditions.

Where heavy applications of fertilizer are made, as 300 or more pounds an acre, it is usually best to apply at least part of it to the plowed field and disk it in before planting. Part may be drilled in the row if the planter has a fertilizer attachment.

It is often dangerous to drop fertilizer in considerable quantity in hills in direct contact with the seed. This is especially true if the fertilizer contains nitrate of soda. It sometimes kills the seed, though this material is often very good when not applied too close to the hill.

Fertilizer in a quickly available form often helps stimulate a better early growth on soils that are somewhat cool and where growth is backward. In some cases astonishing results have followed very limited applications under such conditions.

For the most part, Eastern Oregon corn crops are limited by moisture rather than plant food. There may be some exceptions on irrigated land, but corn is usually grown after alfalfa and makes a splendid growth without fertilizer.

Increased yields and cheaper production follow good seed-bed preparation.

Plowing should be six to eight inches deep and early. The seed bed is worked early and if so loose as to cause too deep planting should be rolled. Late working previous to planting should be shallow harrowing to kill weeds and maintain the mulch. Late deep workings as disking or springtoothing bring up new weed seeds. Where the seed bed is in good tilth it is best to make the late workings shallow.

Most of Oregon demands an early to medium-early maturing corn. Eastern seed corn is nearly always disappointingly late. Only acclimated seed should be used. Every farmer should save the best ears from his best plants, dry them, and keep them for seed.

Results of work at the Oregon Experiment Station at Corvallis indicate that Minnesota 23 is the best early dent corn. Where the season

is too short for it Gehu yellow flint and King Philip flint are good. Minnesota 23 has rather few and narrow leaves and a medium stalk, but ripens a good ear. It is early and is recommended for grain where the season is short.

Minnesota 13 is a standard medium-early silage variety for Western Oregon. It is leafy, produces a medium-sized stalk and a good ear. Golden Glow, Wisconsin 12, Pride of the North, and some other varieties locally selected for several years are excellent on the river-bottom soils of the Willamette Valley. On some of the warm irrigated Columbia and Snake River soils, early selections of Reid's yellow dent and Iowa Silvermine are very good.

Minnesota 13 and 23 and Walla Walla white dent are good dry-land varieties for Eastern Oregon, where the altitude is under 2500 feet.

All seed corn should be tested to assure strong germination. It should be screened to remove small and broken seeds and to eliminate the large, misshapen, and butt kernels. These clog the planter plates and make an uneven stand.

Corn on weedy land should be check-rowed so that it may be cultivated both ways. For silage or grain on clean land drilling is faster and preferable. Rows should be straight.

No one can get good corn yields without a full stand.

On good land well supplied with moisture, hills should be $3\frac{1}{4}$ feet each way and have three stalks each. Drilled corn may be slightly thicker. Very rich, warm, irrigated lands with plenty of plant food may have more plants to the acre. On dryer or poorer land, thinner planting is advisable.

On dry farm lands the rows should usually be 4 feet apart with single plants $1\frac{1}{2}$ to 2 feet apart in the row.

Only good seed showing a high germination test should be used.

Plantings should be made as early in the spring as practicable. Corn is very tender to frost and this must be guarded against in cool sections.

When corn is planted in cold, wet soils, germination is slow and weak. Soil fungi attack the seed before it gets started and rot it. When planted right, in mellow, moist, warm soil, germination is prompt and the stand is good.

Planting usually takes place from mid-April in the warm parts of Southern Oregon and the Columbia and Snake valleys to May 20 in the Willamette Valley and June 1 in the higher altitudes.

Many people bury rather than plant their seed corn. Plant it just deep enough to cover it in mellow moist soil. One and one-half to two inches on loamy soils is deep enough; slightly deeper is better on sandy soils. Listing or planting at about two inches deep in the bottom of a furrow is good in a hot, dry country like Nebraska, but with our cool nights and cool soils this practice sets the corn back several days in maturity.

A good stand of corn usually means a good yield. No field full of missing or vacant hills can produce well. Poor stands are the result of:

- (1) Poorly prepared seed beds.
- (2) Dead seed.
- (3) Poorly graded seed.
- (4) Planting when too cold or wet.
- (5) Too deep planting.

All of these common causes of thin stands and light yields are easily avoided. It is usually safe to plant at least 25 percent more seed than you want plants as this assures a full number to the acre. Usually eight to twelve pounds an acre is enough.

Harrowing after planting, so as to kill weeds, is a good practice. This should be light surface working and only after the dew is off and the plants dry and less brittle. When about four inches high, cultivation should begin. Cultivators with several small- to medium-sized shovels are good. Sharp knife cultivators are best where there are canada thistles, wild morning glories, and other perennials to control. Always watch cultivator shovels or teeth that they do not go too deep and tear off or injure the feeding roots of the crop.

Early cultivations should be about three to four inches deep and close to the plants. Metal fenders on the cultivator prevent covering the corn. Later workings should be more shallow and farther away to prevent root pruning. Cultivation should be kept up till there is no longer need for weed killing or for maintaining the mulch. Usually at this time the corn is twenty-four to thirty inches high and is ready to lay by. An occasional hoeing may be necessary to take care of perennial weeds.

When corn is beginning to ear out it is ready for green feed. It is better when well eared. The best silage stage is reached when the ears are in an advanced hard-dough stage, the kernels well glazed and dented, and the husks beginning to dry.

At this same stage hogging off may advantageously begin, but the hogs must become accustomed to it as it is still somewhat immature.

Cutting and shocking may begin at this same time. Usually plants from an area twenty-five to thirty-five feet square are set up in a shock. This means about 64 to 100 hills or 175 to 300 stalks. After drying in the shock for six to eight weeks the corn may be husked.

Where the stalks are not wanted for feed, corn is left in the field until mid-November or early December. Leaving the ears on the stalks either in the shock or standing in the field seems to dry them out. For Western Oregon long-shanked varieties with drooping ears shed water better, but even upright ears with silks remaining do not take in much water when standing out in the weather.

When husked, any soft or immature ears should be sorted out and fed. The sound ears remaining may be safely stored in well-ventillated (slatted) and well-roofed cribs protected from rodents. Many Oregonians think this cannot be done, but it is successfully done each year, even in the Willamette Valley.

Early corn grown for hogging off while the fields are dry enough and dry corn husked to feed out of the cribs will increase our corn acreage and our stock production. Sometime early maturing corn stored in cribs will become an important stock feed in both Eastern and Western Oregon. When this time comes and brings with it a more extended use of the crop for hogging off and for silage, the State will see fewer weeds, more clover, and cheaper and larger yields of both forage and grain.