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COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

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CORN

A. DAANE, Agronomist

Corn is not adapted to all sections of Oklahoma, although it is grown in every county of the State and in many of these it is one of the leading crops. Corn is a very profitable crop when properly grown on soils to which it is adapted and in those sections of the State where the climatic conditions permit.

The corn land in Oklahoma is mainly bottom land, although good crops are sometimes grown on medium upland,. Practically all of the western two-thirds of the State is not adapted to corn for the reason that the rainfall is too irregular and often deficient. Corn, to make a profitable crop, must have rain when needed. Except on fertile, favorably located land, the grain sorghums should be grown for grain in the western two-thirds of the State.

While corn will give maximum yields on such soils, other things being equal, yet profitable results can be secured under less favorable conditions. Poor soils can be made fertile, better seed can be selected and better care can be given the crop which will greatly increase the yields over the average run of the crop in the community. These are the factors largely controllable by the one growing the crop that govern production. Hot winds and high temperatures cannot be controlled and can be modified only by selecting land so lying as to be somewhat protected by its slope or by the proximity of trees along creek or river bottoms. Neither can the rainfall be controlled. It can be modified only to the extent of making the soil more receptive and retentive of moisture. This is done by improving the physical condition of the soil and keeping it in the best tilth possible. Corn will respond to good care and treatment whether it be on bottom lands or on less favorable soils.

SELECTING AN ACRE FOR CORN

Select an acre well drained in good tilth and fertile. Soils with poor drainage are poorly aeriated, stale or dead and are hard to get into good tilth. To be fertile the soil should have plenty of plant food available for the crop. It is an excellent practice to plant corn on a piece of land that has previously grown a legume, such as alfalfa, cowpeas or peanuts. If the residues of such legume crops are plowed under it will add materially

to the productive ability of the soil. Well rotted barnyard manure applied at the rate of 10 to 15 tons per acre in the late summer or fall and plowed under is an excellent method of improving both the physical condition and the fertility of the soil. If the manure is not well rotted a lighter amount should be applied as a surface dressing and sliced in. This kind of fertilizer besides adding some of all the necessary plant foods improves the physical condition of the soil. The land will absorb more of the moisture that falls as rain and it will be able to retain it longer. Soils with plenty of organic or vegetable matter in them are always easily kept in the best of tilth.

Where the rainfall is light care should be taken in applying fertilizers of any kind. Only slight applications should be made as detrimental results may come through the use of heavier amounts.

PREPARATION OF SEED BED

The land should be plowed 6 to 8 inches deep in the fall. It should be left rough during the winter to enable water to enter in larger quantities an dpermit weathering. In the Spring the land should be disced as early as possible. By so doing aeration takes place and the land is warmed sooner than if it is not worked. This warming of the soil causes many weed seeds to sprout, subsequent harrowing with a spike tooth harrow will kill more weeds then than several cultivations after the corn is up. Most of the weeds should be killed with a spike tooth harrow and before the corn is high enough to cultivate with a row cultivator. The land should be harrowed frequently until after the corn is up too high to permit of the use of such an implement.

At planting time the seed-bed should be clean, firm, in good tilth and in fine condition. Careless preparation of a seed bed, too often causes a low yield per acre.

SEED VARIETY

An early corn "gets by" more often than late corn in Oklahoma. However, no matter which variety is used plant a standard variety at least one that is known to have given good results in the community.

Boone County White is a rather large late maturing variety adapted to the rich bottom lands of the Eastern part of the State.

Silvermine being not so large or late maturing as Boone County White is able to give better results under less favorable conditions. It sometimes gives excellent results on second-bottom land and in sections of the State farther to the West.

Reid's Yellow Dent is an early yellow corn and is adapted to practically the same kind of soil and section of the State to which Silvermine is adapted.

Dent Squaw is a hardy early corn fully as early as Reid's Yellow Dent; while it gives its best yields on rich bottom land it may be used with better results than later corn on which might be considered questionable corn land.

There are other good yielding varieties of corn for Oklahoma but it would be much better for all concerned if the number of varieties in this

State were cut down to about six or eight instead of having so large a number as is now grown.

SEED TESTING

No matter what the variety is the very best seed should be used. This seed should be tested for germination before the corn is shelled *off the ears.* All the seed ears should be numbered, (a shingle nail piercing a small square piece of card board or heavy paper and pushed into the butt of the ear serves the purpose very well. The ears can then be numbered with a pencil on the cardboard.)

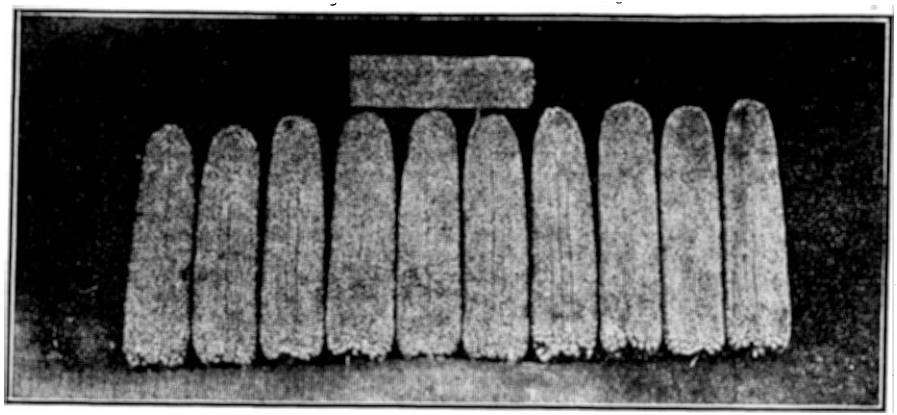
Only good solid uniform ears with kernels of uniform length, width and thickness should be used. Ears with irregular shaped kernels should be discarded. Six to ten kernels should be taken from various places on the ear. These kernels should be placed in the germination box or other receptacle in which the germinating is done, always arranging the kernels to be tested in such a way that the ear from which they came can be readily found. With the sand-box tester, sawdust-box tester or the rag-doll tester this can be easily done. A sawdust-box tester can be made at home. It should be about twenty inches by thirty inches by four inches. Such a box is easily handled. If sand is to be used it need not be so large as it will be heavy to carry or move.

Starting at one corner of the box, shingle nails should be driven into the board that forms the outer edge of the box, leaving the head protruding a little above the edge. By using a cotton cord or binder twine, squares two inches each way can be made with the string on the surface of the sawdust or sand. Arrangements should be made to number these squares so that the kernels of corn from an ear can be placed in a square with a corresponding number.

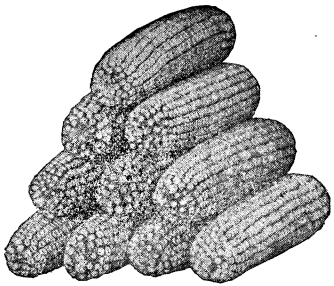
From an examination of the kernels after the germinating period is over which takes about six or seven days, the weak or dead ears can be detected and should be discarded. The ears that have good strong vitality can then be used for seed. The small and irregular sized kernels at the tip and the butt of each ear should then be shelled off and discarded. This will leave only kernels of uniform size for seed and the planter will drop them with better regularity than if they were not of an even size.

PLANTING

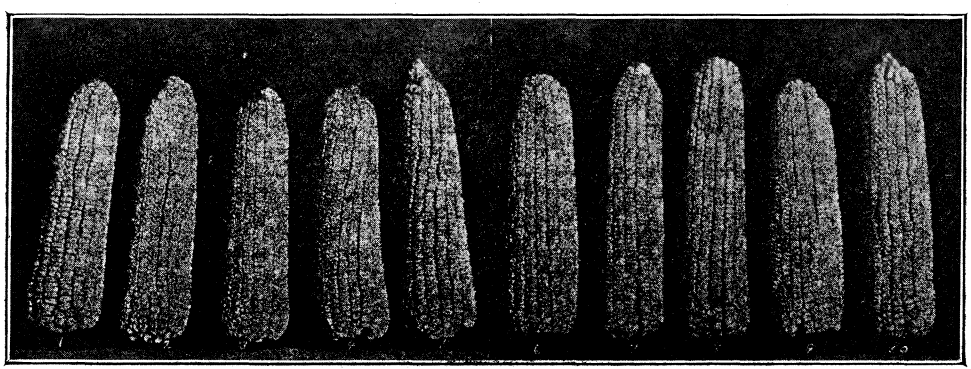
Ordinarily the time of planting corn is from about the middle of March to June, however, most of the corn is planted the latter part of March and in April. As stated before, the early corn generally produces better than the same variety planted later. Much damage results from corn coming into tassel during the hot-wind weather of July and August. To avoid this period of drouth and hot winds the corn that is planted the latter part of March or the first part of April tassels and fertilizes the silks before the hot winds and droughts begin. While late corn planted late tassels so late in the Summer that the dry hot winds do not burn up the tassel and kill the pollen, yet this corn must pass through a critical period in its development at a time when drouths and hot winds often prevail in Oklahoma. However, planting should not be done so early as



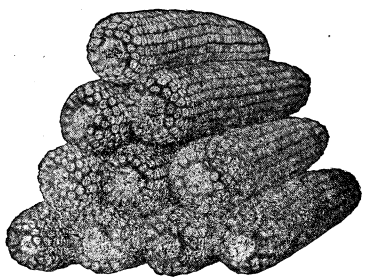
This cut represents a club boy's exhibit at the State Fair. In selecting your exhibit, try and observe uniformity on all points, as well or better than this boy did.



This cut represents an exhibit of ten ears of corn as exhibited by an Oklahoma club boy. While these are not ideal, yet they indicate what the club member should seek to do. If he can get them more perfect, so much the better.



Showing a poor ten-ear sample. The whole sample lacks uni formity in many particulars—type, length, circumference, number of rows, shape, tips, butts, width of kernels, roughness, space bet ween rows, straight rows and regular rows.



This represents a club boy's exhibit of corn showing some fairly good butts. In selecting your exhibit, try and get them just as good or better.

Be observant of the following points as regards the plant: The stalk should be free from smut or other diseases. Do not select ears from stalks which show a marked tendency to sucker. Select ears from plants which are of vigorous, healthy growth. One ear to the stalk is preferable to two or more. The ears should grow slightly below the middle of the stalk. The ear shank should not be more than 4 or 5 inches long.

CARE OF SEED

All the ears selected should be placed in a well ventilated place where they can be thoroughly dried. When the ears become as dry as old corn they can be stored in a place where neither mice, moisture nor weevil can injure it.

SELECTING AN EXHIBIT SAMPLE

In selecting seed the plant as well as the ear is considered, but in selecting a sample for exhibit purposes the ears only need be observed. They should all be uniform in shape, length, circumference and number of rows. These measurements are given below in the Group Standards. It is very necessary that the same characteristics in all the ears of the sample be as near alike as possible; this gives the much desired uniformity a sample should have. If the color of one cob in a sample is white the other cobs in the same sample should be white. Some of the cobs should not be white and others red. Furthermore, the shade of the color should be the same. Especially is this true in varieties having red cobs. Reid's Yellow Dent for example should have a deep cherry red cob, while in Chisholm the cob is lighter in color. Again, Boone County White has a pearly white color to the corn while Silvermine has a creamy color to the kernels. All points in the score card should be considered and applied to the characteristics of the ears. The butts of the ears should be well shaped and uniform; the same may be said of the tip of the ears. The kernels should be alike in shape, depth, thickness and width. They should have the same indentation and roughness. The size of the germ should be uniformly large in the whole sample. There should not be space between the kernels at the cob nor should there be much space between the rows of kernels. If all the characteristics of an ear compared with similar characteristics in the other ears selected from the field it will be found to be a rather difficult task to find ten ears that are satisfactorily uniform. It is necessary therefore to gather as many good ears as possible from the field for on close examination later most of them about increased yields and larger profits.
ards or they are not sufficiently uniform in other respects.

Diligent application of the best rules in growing corn together with a close study of the characteristics of the variety selected are sure to bring about increased yields and large profits.

to endanger the young plants with Spring frosts. In Southern Oklahoma the average date of the last killing frost in the Spring comes along in about the last ten days of March; while in the Northern part of the State it is about a week to ten days later.

Planting should be done with a level planter on most of the real corn soil of the State. If corn must be raised on an extensive scale listing is cheaper for more ground can be worked with less labor. Listing has its advantages especially in the central and western sections of the State but some of these advantages are obtained in using a level planter with furrow openers attached. The damage done to the young corn plants by drifting sand is overcome by planting the corn in shallow furrows. Also weeds are more easily controlled by listing. Listing is advisable on light soils but on the heavier loam and clay soils level planting is to be recommended.

RATE OF PLANTING

Planting should be done in 42-inch rows. The rate of planting in the row should be thicker on fertile soils than on poor soils. Also the rate should be heavier where moisture is in the greatest amount, for most of the good corn lands in the State. The plants should be from 16 inches to 20 inches apart in the row. On less favorable conditions the distance between plants should be increased to 30 inches or even 36 inches depending on the conditions obtaining.

CULTIVATING

After the corn is planted nothing is to be done except to see that the soil does not crust over after rains; if the weeds begin to grow harrowing should be done. Corn can be cultivated with a spike tooth harrow until about two or three inches high. Harrowing at this time will do more good than working with any other implement. Besides covering the ground thoroughly, it is very efficient in killing weeds.

After the corn gets taller cultivating with a small shovel cultivator is necessary. Cultivating should be much deeper and closer to the plants when the corn is small than after it gets tall. A good mealy mulch should be retained at all times. No crust should be permitted to form on the soil, and last, but not least, weeds should be kept out of the corn. There is no place on the farm for weeds, and least of all in a row crop.

The number of cultivations corn should have in a season depends upon several things but to give the best results the retention of a mealy mulch and a clean sand free from weeds will help to attain the other ends sought in the proper cultivation of corn.

SELECTING SEED

When the crop is mature and before any of it is cut or removed from the field, the seed corn for the next year's crop should be selected. Go over the field and select all good ears conforming to the variety type from desirable plants only. Plants favored with extra space or any unusual conditions by which they have an advantage for development over the regular field stand should not be considered as desirable plants from which to select seed ears.

SCORE CARD FOR CORN

The following score card will be used in the Boy's Club work. Lessons in judging, given by the county agent or teacher, will be of valuable assistance to the club member in choosing his exhibits for the county fair or contest.

	Possible Score	Score Received
1. UNIFORMITY OF EXHIBIT—Uniform in shape, length, circumference and number of rows	5	.....
2. LENGTH OF EAR—Varies with variety measurement	5	.....
3. CIRCUMFERENCE OF EAR—Varies with variety measurement	5	.....
4. SHAPE OF EAR—Generally approaching the cylindrical, though slightly tapering is not objectionable, with straight rows and with proper proportions of length to circumference acording to standard of variety	5	.....
5. TIPS OF EARS—Oval shape with well dented kernel corresponding to kernels of ear. Protruding cob objectionable	5	.....
6. BUTTS OF EAR—Kernels rounding over the butt in regular manner, leaving a depression when shank is removed, and the kernels of butt correspond to kernels of ear	5	.....
7. KERNEL SHAPE—Approaching wedge-shape and full at germ, with full depth, according to variety	5	.....
8. KERNEL FORMATION—True and even to conform to variety	5	.....
9. SPACE BETWEEN ROWS—Wide furrows between rows objectionable	5	.....
10. SPACE BETWEN KERNELS AT COB—Weakens vitality and reduces shelling per cent	5	.....
11. COLOR OF GRAIN AND COB—Should conform to variety characteristics	15	.....
12. SEED CONDITION—Mature, sound and of strong vitality	10	.....
13. TRUENESS TO TYPE—Conforming to variety characeristics	15	.....
14. PERCENTAGE OF SHELLED CORN—Should be 85% for deep kernel late varieties, and 80% for shallow-grain, early maturing varieties	10	.....
Total	100	.....

GROUP STANDARDS

Group 1. Boone County White and other late-maturing varieties.—Length of ear 9 to 10 inches; circumference 7 to 7 1-2 inches, and rows 18 to 20 according to variety.

Group 2. Silvermine and other medium early-maturing varieties.—Length of ear 9 to 10 inches; circumference 6 1-2 to 7 inches, and rows 14 or 16 according to variety.

Group 3. Dent Squaw and other early-maturing varieties.—Length 8 to 9 inches; circumference 6 to 6 1-2 inches, and rows 14 or 16, according to variety.