UNIVERSITY OF ARIZONA
AGRICULTURAL EXPERIMENT STATION

TIMELY HINTS FOR FARMERS. No. 100

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FIRST ARIZONA FARMERS' CORN CONTEST

In the dry-farming areas of northern Arizona, and in irrigated sections which depend upon summer flood waters from the mountains, field corn has long been a leading staple. Moreover, in the great irrigated valleys the interest in this crop is increasing from year to year. This interest is occasioned partly by the necessity of breaking up old alfalfa fields which have become infested with Bermuda and Johnson grass. Such fields cannot be reseeded immediately to alfalfa without running the risk that these grasses will reoccupy the ground through the growth and spreading of the many fragments of old plants. These are not all killed by even six to eight months of dry fallowing. In order to gain control of noxious weeds, such fields should be planted to cultivated crops for two or three years. No crops are better suited to such purposes than rotations of corn with sugar beets, wheat or potatoes. Beans, milo, shallu or sorghum could be substituted for the corn in rotations where there are but few weeds to destroy, but these crops are difficult to cultivate and cannot be so thoroughly cleaned with plow and hoe. Hence, corn is to be preferred on weed infested land. Moreover, the harvesting of milo and the other grain sorghums is more tedious than the harvesting of corn and there is not so ready a market for the product. All of these circumstances, together with an increasing demand for grain for feeding purposes have awakened an active interest in field corn throughout the irrigated sections of southern Arizona.

The demands for seed corn and for information concerning the varieties best suited to Arizona conditions are beginning to be markedly felt. So many failures have been experienced by those who have attempted to grow corn in the lower valleys that the opinion is generally held that southern Arizona is not adapted to corn culture. On the other hand there are men who have been successful growers of this crop in our driest and hottest sections for a number of years. The cause of their success lies for the most part in a knowledge of the proper time to plant and in the variety of corn used.

When corn is planted early in southern Arizona, its tasseling and silking period will fall within the hottest part of the summer. Under these conditions the pollen and silks seem to dry out before fertilization takes place .When this occurs, the grains will be scattered on the cob, or the ear will be poorly filled notwithstanding the fact that the stalk may be vigorous and well developed. Experienced growers, therefore, have learned to so time the planting that the silking season will be thrown over into the cooler and more humid weather of late summer and yet give the corn time to mature before frost. Even these tactics do not result in developing and maturing the crop under conditions at all similar to those of the eastern corn growing states Farmers who grow only an occasional crop of corn and who buy their seed, for the most part, outside the State are therefore especially liable to failure.

In order to demonstrate the wide variation in the productiveness of the seed corn used by different farmers of Arizona and bring to their attention the value of the acclimatized strains, samples of the seed intended for planting during the summer of 1912 were secured from a number of farmers in different parts of the State. Forty-two samples were obtained and grown in adjoining plots on uniform ground at the Experiment Station farm near Phoenix. All varieties were planted July 5th and given identical treatment with regard to culture and irrigation In recognition of the value of this experiment and in order to awaken a further interest among the farmers in its outcome, the State Fair Commission offered a prize of five dollars to the farmer whose seed corn should give the highest yield, and a second prize of two dollars and fifty cents to the planter whose corn should win second place. Since these prizes were to be awarded during the State Fair and since the corn was not ripe enough to harvest at that time, the prizes were awarded by competent judges who had inspected the corn in the field. In this manner the first prize was given to Mr. D. C. Rose of Yuma and the second to Mr. V. A. Vanderhoff of Scottsdale. When, however, the corn was harvested some three weeks later and the yields obtained

by weight, it was found that the seed furnished by Mr. Rose again took first place, yielding 105 bushels to the acre, but that second place was won by seed furnished by Mr L. W. Williams of Yuma, which produced 95 bushels per acre. According to arrangements with the Fair Commission these gentlemen will be awarded further prizes at the coming State Fair.

Fig. 1.—Typical samples of corn grown from seed furnished by farmers.

3.	Yellow Dent.....	57 bu. per A	4	Papago Pink .	13 bu. per A.
6.	Mexican June.....105 bu. per A		9	Southern White Dent	95 bu. per A
8.	Red Forney, mixed..	84 bu. per A	14	Southern White Dent	69 bu per A
32.	Calico..... .	37 bu per A.	36	Northern Flint .	7 bu. per A.
5.	Navajo Flint.....	73 by. per A			

A single row of corn was planted from the seed of each contestant. The rows were 225 feet long and contained 90 hills each. The whole field contained approximately one acre and gave a total yield of fifty-six bushels. The individual plots however varied all the way from the high yields above mentioned to yields as low as seven bushels

per acre There were six plots which yielded less than thirty-five bushels per acre and six which went over the seventy-five bushel mark. The rate of yield for the separate plots and their relative positions in the field are given in the accompanying chart The striking differences in yield here exhibited were no less marked than those of height, time of maturity, and the disposition and number of ears to a stalk. When one considers that it will require just as much expense and labor to produce thirty-five bushels per acre from a poor variety, as it would to produce one hundred bushels from a good variety, he can realize the importance of a proper choice of seed There was a difference of forty-nine bushels per acre between the average and the best yielding plot. If the increase due to the planting of good seed be figured at only twenty-five bushels per acre, a man planting ten acres would receive an increase of 250 bushels, which is equal to just so many dollars under the present local prices of corn Again when we realize that a number of plots yielded as low as forty bushels per acre, therefore entailing a loss of from fifty to sixty dollars for every acre planted simply because of poor seed, we must be impressed with the fact that the selection of the seed is a serious economic question to the farmer who contemplates planting corn in Arizona.

The successful growers of corn are for the most part men who have been planting this crop for a number of years and who make it a practice to save their own seed They have not only learned by experience the best methods of culture and the proper time to plant, but they have developed for themselves strains of corn which are more or less adapted to the extremes of the southwestern climate. Those who are contemplating planting corn for the first time in this State would therefore do well to secure their seed locally from men who are known to be successful as corn raisers.

It must not be understood, however, that there is no room for further improvement in the local adaptation of corn varieties. The Mexican June type, which up to the present has given highest yields on irrigated land, is too tall for the greatest efficiency as a grain producer and it is too late to be very promising as a dry farm variety. At the present time, practically every type of corn is being grown in the State. Some farmers are growing the little early native varieties, which belong to the soft corn group; other planters send east for the largest late dent varieties; and still others are growing flint corns of various types and races. Good yielding strains have been found in nearly all of these types and it remains to be seen from which will be developed a variety which will exceed all others in its perfect adaptation to southwestern conditions. The probability is that no single variety will be best suited to all conditions. One type will be

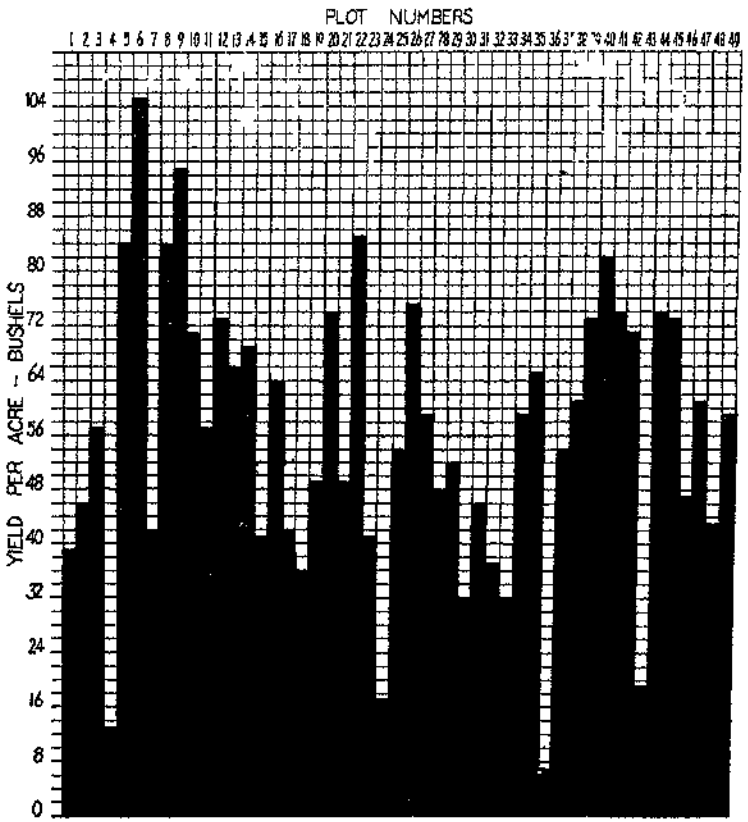

Fig. 2—Chart showing relative yields of different varieties of corn. A good variety costs no more for irrigation and cultivation than a poor one. The difference between profit and loss often lies in the kind of seed planted

needed for the high valleys of northern Arizona, another for the rich low lands of the great irrigation projects and still another for the dry-farming areas of the southern plateaus.

To meet these conditions and to stimulate the improvement of corn in Arizona, the Experiment Station proposes three farmer's corn contests,—one for northern Arizona, to be conducted at the Station Farm near Prescott; one for the great irrigated valleys, to be conducted at Phoenix and another for the southern plateaus, to be carried out in Sulphur Spring Valley.

In order to enter these contests it will only be necessary for a farmer to send to the Experiment Station an ear of corn (unshelled) from the seed which he proposes to plant during the present year. The following data should accompany the ear:

Name and address of sender.
Name of variety of corn, if any is known.
How many years grown in Arizona.
Whether grown by irrigation or dry-farming.
In what division this corn is to be entered.

Each sample will then be planted along with the other varieties in its class in a suitable uniform plot, pains being taken to give each sort equal culture and care Winners in these contests will have their names and addresses published in a report by this Station and suitable prizes will be given at the next State Fair after the awards have been made

The Experiment Station feels that it is justified in giving publicity to the names of those who are successful in these contests since it will enable them to sell their seed to advantage and thus be a means of encouraging the breeding and further improvement of corn in the State.

The names and addresses of those whose n has yielded seventy-four or more bushels per acre during the p. season are as follows.

D. C. Rose,	Yuma, Arizona.....	105 bu. per acre
J. W. Forney,	Glendale, Ariz., Red Forney.....	84 " " "
J. W. Forney,	Glendale, Ariz., White Forney....	74 " " "
L. W. Williams,	Yuma, Arizona.....	95 " " "
C. C. Calloway,	Camp Verde, Arizona.....	74 " " "
Thos. Brock,	Prescott, Arizona.....	85 " " "
Alex. Silva,	Glendale, Arizona, Navajo Flint...	74 " " "

Since the contest was conducted during the past season on the Station Farm at Phoenix on irrigated land it was felt that those who entered dry-farming varieties were at some disadvantage. It is

hoped to avoid this difficulty by dividing the corn into three classes and conducting one contest at Prescott for the northern Arizona entries, another at Phoenix for those entering from the Colorado, Salt or Gila Valleys and the third at Pierce for the dry-farmers of the Sulphur Spring Valley and other southern dry-farming areas.

It is hoped that the newspapers will give this matter due publicity, that the farmers may discuss it among themselves and that as many, as possible may enter this corn contest for the coming season and not only reap a great interest to themselves but also help along the development of varieties of corn which can be made to give an increased valuation of ten to twenty dollars per acre for every acre of corn planted in the State

Those desiring to enter this movement for better and more productive corn or desiring information concerning the matter, should address the writer in care of the Agricultural Experiment Station. Tucson, Arizona.

GEO. F. FREEMAN.