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A TEST OF THE PRODUCING POWER OF SOME TEXAS SEED CORN.

BY

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In Charge of

Cotton Investigation and Breeding

POSTOFFICE

COLLEGE STATION, BRAZOS COUNTY, TEXAS.

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A Test of the Producing Power of Some Texas Seed Corn.

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The extent that corn growers grow and select their own planting seed is not known, but as the process is simple and inexpensive, and as yield is dependent on inherent productiveness of the seed, a test was made this season, 1906, of some seed corn obtained from corn growers in different parts of the State. The test was designed to determine the relative value in productiveness of corn grown by different persons and of ears grown by the same person. Growers who do not select their seed and start from one seed ear to propagate their seed corn, are planting seed of parents of many characters, productive and unproductive, and of low average yield. This is well known to those who have given the subject any thought. They know that some ears or parent plants produce a progeny which will almost uniformly grow a good ear to each stalk, whereas other ears or parent plants will produce a progeny which will have a varying number of earless or barren stalks and consequently a low yield. Therefore it is clear that seed corn should be propagated from a parent ear which has been grown and its yielding power determined through its progeny. The importance of this point is shown in the varying yields produced by ears received from the same grower. An attempt was made to test the relative productiveness of seed corn from a large number of farmers, but many of whom request was made for seed ears failed to give the matter attention. Therefore the test is not as large as desired, but it nevertheless shows that many growers in Texas are not getting the yield of corn that they would get if better selected seed were planted. It was requested that the test ears be as good as the grower planted, or such ears as he would plant, and doubtless the seed was an average in productiveness of the seed corn planted in the sender's locality. One ear was planted to a row, each row being 500 feet long, and the yields of each are exhibted in the sub-joined table. The winter and spring seasons were very deficient in rainfall in the College locality and that accounts in part for the low average yield of all the ears planted, perhaps as much as 30 per cent, and the College soil is poor in drouth resistance.

*The planting and the calculations in this test were in charge of Mr. W. A. Price.

Ears		Per cent of a perfect stand from first planting. (Missing hills were replanted with seed of same ear)	Yield per acre.	Bushels below highest yield ing ear. 26.5
1.	Netherwood		18	8½
2.	"		13½	3
3.	Maedgen		21½	5
4.	"		19	7½
5.	Bell	20	12	14½
6.	"	29	14½	12
7.	"	55	16	10½
8.	"	30	8½	18
9.	"	24	13½	13
10.	Penn	46	11½	15
11.	"	47	14½	12
12.	"	48	15	11½
13.	"	45	19	7½
14.	Brown	30	8½	18
15.	"	50	15½	11
16.	"	44	13	13½
17.	"	40	14	12½
18.	Irving	31	17	9½
19.	"	45	22	4½
20.	"	30	21	5½
21.	"	36	9½	17
22.	Puckett	47	21	5½
23.	"	40	11	15½
24.	Hoyo	62	18	8½
25.	"	61	21	5½
26.	Martin	49	14	12½
27.	"	52	20	6½
28.	"	50	14	12½
29.	"	40	19	7½
30.	Huff	48	20	6½
31.	"	65	23	3½
32.	Hilborn	34	15	11½
33.	"	54	18	8½
34.	"	49	15	11½
35.	"	45	16	10½
36.	Krench	28	13	13½

Ears		Per cent of a perfect stand from ffrst planting. (Missing hills were replanted with seed of same ear)	Yield per acre	Bushels below highest yielding ear. 26.5
37.	"	46	13	13½
38.	"	65	17	9½
39.	"	43	19	7½
40.	Kendrick	38	13	13½
41.	"	65	23	3½
42.	"	25	14	12½
43.	"	0	6½	20
44.	"	59	26½	00
45.	"	40	12	14½
46.	Smith	37	15	11½
47.	"	42	18	8½
48.	"	62	22	4½
49.	Liverman	58	14	12½
50.	"	57	20	6½
51.	"	60	18	8½
52.	"	34	7½	19
53.	Price	47	19	7½
54.	"	52	12½	14
55.	Woods	56	21	5½
56.	"	65	19	7½
57.	"	58	16	10½
58.	"	48	15	11½
59.	"	64	21	5½
60.	Yakey	20	7½	19
61.	"	42	15	11½
62.	"	54	20	6½
63.	Unknown	0	3	23½
64.	"	40	25	1½
65.	"	0	8½	18
66.	"	34	16	10½
67.	"	34	10	16½
68.	"	53	13	13½
69.	"	38	11	15½
70.	"	33	6½	20
71.	"	57	8½	18
72.	"	54	16	10½
73.	"	50	16	10½
74.	"	41	11	15½
75.	"		7½	19
76.		65	2½	24

Ears		Per cent of a perfect stand from first planting. (Missing hills were replanted with seed of same ear)	Yield per acre	Bushels below highest yielding ear. 26.5
77.	"	0	10	16½
78.	"	0	7½	19
79.	"	52	14½	12
80.	"	75	7	19½
81.	"	43	13	13½
82.	"	52	12	14½
83.	"	50	20	6½
84.	"	29	19	7½
85.	"	0	7½	19
86.	"	24	13	13½
87.	"	42	13	13½
88.	"	58	11	15½
89.	"	0	20	6½
90.	"	30	6	20½
91.	Native Grown	0	16	10½
92.	Unknown	9	11	15½
93.	Koville Farm	0	15	11½
94.	" "	31	9	17½
95.	Hickory King	25	8	18½
96.	" "	0	11	15½
97.	Harrington	42	13	13½
98.	"	22	13	13½
99.	"	41	11	15½
100.	"	47	15	11½
101.	"	46	15	11½
102.	"	57	9	17½
103.	"	30	12½	14
104.	"	29	13	13½
105.	"	32	15	11½
106.	"	35	11	15½
107.	"	38	12½	14
108.	"	52	12½	14
	Average yield			14

The corn was planted the middle of March on low beds with a corn planter set to drop one grain every ten inches, but two grains were more often dropped than one grain. Replanting of missing hills was done the middle of April, but did not give a perfect stand.

A cold spell of weather occurred after the corn was planted and before it came up and doubtless affected the germination of all the ears.

In common farm practice the ears of this test would have been shelled together and planted and in such a case the yield would be the average for the whole, which is 14 bushels per acre. The relative value of the dif-

ferent ears would not have been shown and the low yield would have been attributed to the very dry weather.

The yield of the ears, however, would doubtless have been at least 30 per cent greater had a season been in the soil during the spring.

The highest individual ear production shows an excess yield of 12 bushels over the average, and this 12 bushels excess represents the loss in the yield and is due to poor germinative and low yielding power.

The highest yielding ear No. 44, 26 bushels per acre, would no doubt in a better season have made something like 36 bushels. But its yielding power, could also be increased, by selection, to a higher amount than 26 bushels.

The low germinative power and the cold after planting caused much replanting, and lowered the yields very greatly, but the low producing power of the ears was of equal or greater influence in lowering the yield. This latter is shown in the case of some ears giving a poor stand from first planting, yet exceeding in yield ears that gave a better stand and required less replanting of missing hills.

The test shows that the seed ears were not grown nor selected for high yielding power, nor properly gathered and stored to perserve the germinative power.

It also shows on these counts that an average loss of twelve bushels per acre, or, at 50 cents per bushel, a loss of at least $6.00 per acre, results from using this corn for seed.

It is not overstating the matter, perhaps, to say that a very large part of the corn planted in Texas does not yield within one fourth of what would be produced if the seed were grown from an original seed ear or parent that had shown a high producing power. This difference in productiveness would be clear gain since it would not add any expense to the cost of the crop; its only cost would be the small expense of labor in growing and selecting enough seed ears to plant the farm crop.

Texas farmers need not import seed corn for increased yields, they can get greater increased yields by properly growing and selecting seed in Texas. Accurate investigations in other States and extended observation show that corn developed in a locality is not as productive in a distant locality, North or South, as a corn grown and selected locally. Perhaps the chief reason why southern growers sometimes get better yields from northern seed corn, is that the imported seed has been grown and selected for seed, while their local seed has neither been grown nor selected for planting. If the local seed were selected, its yield would be better.

GROWING AND SELECTING SEED CORN.

Where a grower desires to start and develop his own seed corn the usual practice is to select a number of the right kind of ears from the proper stalks and plant each ear to a row. The yield of the rows will indicate the parent ear that has the greatest producing power, and the one that proves itself to be the best producer is taken for the progenitor of the seed corn supply.

THE BEST TYPE OF EAR AND STALK.

The best type depends on what use is to be made of the ears and stalks. For general use on the farm it is desirable to have a stalk not extra tall, but that has a large diameter at the base and fairly short joints. This type of stalk will have vigor and resistance to winds and the weather. The ear should be at a height comfortable to husk and not so high as to overbalance the stalk.

The ear should have a medium diameter of cob, of good length and filled with grains, which should be of good length, not too tapering and with as little space as possible between the rows of grain.

Professional Corn Breeders observe a more detailed scale of points in seed selection, but the general farmer from lack of time when selecting his seed can only observe the principal points affecting yield.

SELECTING AND STORING SEED EARS.

Seed ears should be selected in the field or seed patch and never in the crib. To delay selecting till in the crib and at planting time may subject the ears while in the field or in the crib to influences that will partially or wholly destroy the germinative power. A low germinative power requires more seed and the young plants may not have vigor for prompt growth and resistance to unfavorable weather. While the germinative power of each ear may be tested in a simple germinator before planting yet few growers will take this trouble; but instead, they plant a large quantity of seed to insure a stand. If all the grains are good this results in a thick stand, which is troublesome to thin out. A more certain method and one which costs nothing, is to select the seed ears on the stalk as soon as dry, then store in a dry place till planting time. This practice assures good seed, selected from the proper type of stalk.