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AND SINGLE CROSSES OF CORN
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This report summarizes the performance of inbred lines and hybrids of corn tested in 1946 by the Illinois Agricultural Experiment Station. Data are presented from trials conducted in northern Illinois (Kane County), central Illinois (Champaign County) and south-central Illinois (Scott County).

The authors and the Experiment Station acknowledge the cooperation of Mr. Harry Cochran, Aurora, and Mr. Royal Oakes, Bluffs, on whose farms some of these tests were conducted. The valuable assistance of Mr. L. F. Bauman, Mr. John L. Hahn, and Mr. W. E. Robbins in carrying out these tests is also appreciated.

All plots in these tests were planted and thinned by hand, four plants per hill being left in the experiments at Bluffs and three plants per hill in all other tests. The material was planted in 2 x 5-hill plots arranged in a randomized block design. Yields were corrected for missing hills and are reported as bushels of shelled grain per acre on the basis of 15.5 percent moisture, the maximum allowable for No. 2 shelled corn.

The number of bushels necessary for significance has been calculated for each test. Readers are cautioned to note these values in making comparisons between any two hybrids.

The figures in the tables marked with the symbol " /" give the performance of the respective inbred lines. These figures have not been included in calculating the "mean" values shown at the bottom of each column. For example, in the "Acre Yield" section of Table 1, the underlined yield of 34.0 bushels per acre in the column headed "Wisc. W22" is the yield of that inbred line. The mean value of 86.9 bushels per acre at the bottom of the column is the average yield of the nine single crosses of which W22 was one parent.

The performance of single-cross hybrids is of interest to corn breeders, producers of hybrid seed corn, and to farmers. Characteristics of single crosses such as yield, standability, seed size, shape, quality, etc. definitely affect the practical production of hybrid seed corn. Some farmers are interested in growing single-cross hybrids commercially because of their attractive appearance and extreme uniformity. The use of single-cross data for the prediction of desirable double crosses creates additional interest in the performance of single crosses.

By arranging single-cross data in summary tables, the average contribution of each inbred may be calculated. For example, from the "Acre Yield" section of Table 2, single crosses involving inbred "Hy" averaged 118.5 bushels per acre while single crosses involving K230 averaged only 94.9 bushels an acre. Comparisons of this type enable the breeder or seed producer to select inbreds which contribute the most desirable characteristics to their hybrids.

The making and testing of all possible hybrid combinations among available lines is a tremendous task. Thus with only 40 inbreds, 780 single crosses and 274,170 double crosses are possible. The use of single-cross performance data permits the corn breeder to predict which of the many possible double-cross combinations are most

desirable. The usual procedure in making predictions is method "B" proposed by Dr. M. T. Jenkins.^{1/} The following six single crosses can be made with four inbred lines: A x B, A x C, A x D, B x C, B x D, and C x D. In method B, the average performance of the four non-parental single crosses gives the predicted performance of a specific double-cross hybrid. For instance, the average yields of the four single crosses, A x C, A x D, B x C, and B x D, give the predicted yield of double cross, (A x B)(C x D).

The procedure in predicting "acre yields" and "percentage of erect plants" of two hybrids differing in desirability is shown below. Single cross data are taken from Table 3.

	<u>(K4 x C.I.21E)(K201C x 38-11)</u>			<u>(Kys x T8)(C.I.3A x L317)</u>	
	<u>Acre Yields</u>	<u>Erect Plants</u>		<u>Acre yields</u>	<u>Erect Plants</u>
	bus.	pct.		bus.	pct.
K4xK201C	118.6	92	KysxC.I.3A	98.6	40
K4 x 38-11	128.3	84	Kys x L317	110.8	9
C.I.21E x K201C	133.0	92	T8 x C.I.3A	77.6	40
C.I.21E x 38-11	131.6	89	T8 x L317	110.2	58
	<u>4 511.5</u>	<u>4 357</u>		<u>4 397.2</u>	<u>4 147</u>
Prediction	127.9	89		99.3	37

Similar predictions can be made for other characteristics.

Prediction studies are an extremely valuable part of a research program. By this method, corn breeders are able to obtain the very best combinations without making and testing thousands of undesirable crosses. Predicted hybrid combinations, however, should always be thoroughly tested under field conditions before being put in commercial production.

Performance of inbred lines is of interest to the producer of single cross seed. Inbred lines were tested in plots immediately adjacent to the corresponding single-cross tests. Direct comparisons, therefore, can be made of the performance of parent inbreds and their single crosses.

Four systematic sets of single crosses and their parent inbred lines were tested in 1946. The conditions and results of each test will be discussed briefly in the following paragraphs. In the tables, the entries are listed in the order of total yield in bushels per acre, beginning with the highest.

Early Yellow Inbreds and Single Crosses

Ten early-maturing yellow inbred lines and the 45 possible single crosses among them were tested on the Harry Cochran farm near Aurora (Kane County). Data from this test are summarized in Table 1. These data permit predicting the performance of 630 double crosses. Hybrids involving the following lines were better than average:

Acre yield - W22, 051A, W8, M14, I205, W32
 Moisture in grain - WF9, 051A, 028, W8, W32, A
 Shelling percentage - 051A, W8, M14, I205, W32
 Erect plants - I205, W22, 028, WF9, W8, 051A
 Plant height - M14, N6, W8, W32, WF9
 Ear height - M14, WF9, 028, N6, W22

^{1/} Jenkins, M. T. Methods of estimating the performance of double crosses of corn. Jour. Amer. Soc. Agron. 26:199-204, 1934.

Ear Size - I205, WF9, N6, W8, O51A

Maturity rating on husk dryness - M14, WF9, W32, I205, W22, O51A

Midseason Yellow Inbreds and Single Crosses

Ten midseason yellow inbred lines and 38 of the single crosses among them were tested on the Agronomy South Farm at Urbana. Data obtained are presented in Table 2. The lines performing best in hybrids were:

Acre yield - L304A, Hy, 07, L317, P8
Days to half-silk - L304A, WF9, K230, Hy, P8
Moisture in grain - 07, 38-11, WF9, K230, L304A
Shelling percentage - L304A, P8, 07, Hy, WF9
Erect plants - 07, P8, WF9, Hy, B2, K230
Plant height - K230, N6, WF9, P8, B2
Ear height - WF9, N6, P8, K230, B2, 07
Ear size - Hy, L304A, B2, 07, L317

Late Yellow Inbred and Single Crosses

Ten late-maturing yellow inbred lines and their 45 all-possible single crosses were grown at Urbana and on the Royal Oakes farm at Bluffs (Scott County). The data presented in Table 3 are the averages of the tests in the two locations. Yields were very high at Bluffs where the average yield of all single crosses tested was 128.8 bushels per acre. On the average, the better-performing lines in hybrids were:

Acre yield - C.I.21E, 38-11, K201C, K4, L317, C.I.7
Days to half-silk - 38-11, L317, T8, C.I.3A
Moisture in grain - 38-11, K155, C.I.7, T8, L317
Shelling percentage - K155, K4, C.I.7, C.I.21E, 38-11, T8
Erect plants - K201C, 38-11, C. I. 21E, C.I.7, T8
Plant height - K155, K201C, T8, C.I.3A
Ear height - C.I.21E, 38-11, K155, C.I.3A, K201C
Ear size - C.I.21E, K201C, C.I.7, K155, 38-11, K4
Gibberella stalk rot - K201C, T8, K4, C.I.21E, C.I.7

A severe epidemic of Gibberella stalk rot at Bluffs brought out wide differences in resistance to this disease. The "prematurely dead plants" section of Table 3 gives an indication of these differences. Inbreds K4, C.I.3A, and L317 were very susceptible, while K155, T8, K201C, and C.I.21E were almost immune. Only 5 percent of the plants of the K4 crosses died prematurely, even though all plants of this line were killed by the disease. Crosses involving inbreds L317, C.I.3A, and Kys were extremely susceptible, while crosses involving K201C, T8, and C.I.21E were resistant.

Late White Inbreds and Single Crosses

Fourteen late-maturing white inbred lines and 34 single crosses among them were compared at Urbana and on the Royal Oakes farm near Bluffs. Data on eight of these lines and 24 single crosses are given in Table 5. Two-year average performance of 18 single crosses involving seven of these lines is shown in Table 4. The following inbreds performed best in single crosses as an average of 1945 and 1946:

Acre yield - H21, K64, R30, Ky27
Moisture in grain - Ky27, 33-16, K6, H21
Shelling percentage - Ky27, H21, R30, 33-16
Erect plants - Ky27, C.I.61, H21, K64, R30
Ear size - H21, R30, C.I.61, K6, K64

The white lines performing best in hybrids in 1946 were:

Acre yield - H21, C.I.61, K64, Ky27
Days to half-silk - 33-16, K64, Ky27, R30, K55
Moisture in grain - 33-16, Ky27, C.I.61, K6
Shelling percentage - Ky27, 33-16, R30, K64
Erect plants - C.I.61, H21, K64, 33-16
Plant height - Ky27, R30, K55, 33-16
Ear height - Ky27, R30, 33-16, K55
Ear size - C.I.61, H21, K64, K55
Suckers - C.I.61, K55, Ky27, 33-16
Gibberella stalk rot - H21, K64, C.I.61, K6

Single cross C.I.61 x H21 yielded an average of 184.3 bushels per acre at Bluffs. Several other crosses yielded almost as high. Inbreds Ky27, K55, R30, and 33-16 were very susceptible as lines to Gibberella stalk rot. This susceptibility caused these lines and their crosses to die prematurely and to stalk-break very badly.

Table 1.--EARLY YELLOW INBRED LINES AND SINGLE CROSSES: Aurora, 1946
(Means of four replications for single cross data and two replications for inbred line data)

Parent lines	Wisc. W22	Ohio 51A	Wisc. W8	Ill. M14	Iowa I205	Wisc. W32	Ohio 28	Ind. WF9	Ill. A	Nebr. N6
Acre Yield, Bushels										
W22	<u>34.0</u> /*	82.7	97.0	88.7	83.4	85.1	85.2	88.9	83.9	87.2
Oh51A	82.7	<u>41.8</u> /	86.5	82.9	86.4	87.9	84.7	84.5	89.7	75.8
W8	97.0	<u>86.5</u>	<u>47.8</u> /	79.8	73.2	85.9	84.7	81.0	78.8	85.7
M14	88.7	82.9	79.8	<u>34.0</u> /	94.8	83.8	82.7	85.4	72.5	71.5
I205	83.4	86.4	73.2	94.8	<u>51.1</u> /	77.2	85.5	80.7	79.7	78.7
W32	85.1	87.9	85.9	83.8	77.2	<u>33.8</u> /	88.8	76.1	71.0	82.8
Oh28	85.2	84.7	84.7	82.7	85.5	<u>88.8</u>	<u>34.0</u> /	64.1	77.7	80.6
WF9	88.9	84.5	81.0	85.4	80.7	76.1	64.1	<u>41.4</u> /	82.9	70.1
A	83.9	89.7	78.8	72.5	79.7	71.0	77.7	82.9	<u>31.0</u> /	77.4
N6	87.2	75.8	85.7	71.5	78.7	82.8	80.6	70.1	77.4	<u>33.6</u> /
Mean	86.9	84.6	83.6	82.5	82.2	82.1	81.6	79.3	79.3	78.9

*Yield of inbred line W22. Figures thus set off in this and similar tables pertain to the performance of the respective inbred lines themselves.

A difference of less than 8.4 bushels between any two single-cross yields is not significant.

Moisture in Grain at Harvest, Percent										
W22	<u>27.5</u> /	21.0	22.1	22.7	25.3	24.4	23.3	20.8	23.2	23.7
Oh51A	21.0	<u>20.8</u> /	20.8	21.3	23.4	19.6	19.5	21.0	19.8	21.6
W8	22.1	20.8	<u>22.9</u> /	21.9	23.4	22.0	21.4	20.8	21.7	21.7
M14	22.7	21.3	21.9	<u>23.1</u> /	24.1	22.8	20.5	20.8	23.6	22.6
I205	25.3	23.4	23.4	24.1	<u>22.2</u> /	22.5	24.0	21.5	22.5	24.4
W32	24.4	19.6	22.0	22.8	22.5	<u>22.2</u> /	22.4	20.0	23.4	21.7
Oh28	23.3	19.5	21.4	20.5	24.0	22.4	<u>21.6</u> /	19.0	21.2	22.9
WF9	20.8	21.0	20.8	20.8	21.5	20.0	19.0	<u>21.5</u> /	20.5	20.4
A	23.2	19.8	21.7	23.6	22.5	23.4	21.2	20.5	<u>26.3</u> /	23.3
N6	23.7	21.6	21.7	22.6	24.4	21.7	22.9	20.4	<u>23.3</u> /	<u>19.1</u> /
Mean	22.9	20.9	21.8	22.3	23.5	22.1	21.6	20.5	22.1	22.5

Shelling Percentage										
W22	<u>66.2</u> /	81.4	81.2	82.4	79.6	76.6	80.0	80.4	77.8	75.2
Oh51A	81.4	<u>77.6</u> /	84.3	82.9	85.0	84.6	83.8	85.2	84.0	81.8
W8	81.2	84.3	<u>82.0</u> /	83.2	82.3	83.4	81.8	82.4	82.8	83.6
M14	82.4	82.9	83.2	<u>79.2</u> /	82.8	81.4	82.5	81.2	80.7	80.8
I205	79.6	85.0	82.3	82.8	<u>71.3</u> /	81.8	77.9	81.4	79.8	79.4
W32	76.6	84.6	83.4	81.4	81.8	<u>75.2</u> /	80.0	81.2	80.0	80.8
Oh28	80.0	83.8	81.8	82.5	77.9	80.0	<u>74.8</u> /	79.6	78.0	79.6
WF9	80.4	85.2	82.4	81.2	81.4	81.2	79.6	<u>78.1</u> /	80.0	77.5
A	77.8	84.0	82.8	80.7	79.8	80.0	78.0	80.0	<u>74.3</u> /	78.9
N6	75.2	81.8	83.6	80.8	79.4	80.8	79.6	77.5	<u>78.9</u> /	<u>82.6</u> /
Mean	79.4	83.7	82.8	82.0	81.1	81.1	80.4	81.0	80.2	79.7

Table 1 (cont.)

Parent lines	Wisc. W22	Ohio 51A	Wisc. W8	Ill. M14	Iowa I205	Wisc. W32	Ohio 28	Ind. WF9	Ill. A	Nebr. N6
Erect Plants at Harvest, Percent										
W22	<u>86/</u>	99	98	94	99	97	100	99	98	93
Oh51A	99	<u>93/</u>	99	88	99	84	98	97	83	94
W8	98	99	<u>92/</u>	98	100	91	96	92	75	89
M14	94	88	98	<u>84/</u>	100	80	92	86	85	93
I205	99	99	100	100	<u>90/</u>	100	98	100	100	98
W32	97	84	91	80	100	<u>5/</u>	90	92	75	82
Oh28	100	98	96	92	98	90	<u>91/</u>	99	96	98
WF9	99	97	92	86	100	92	99	<u>98/</u>	94	96
A	98	83	75	85	100	75	96	94	<u>63/</u>	88
N6	93	94	89	93	98	82	98	96	<u>88</u>	<u>81/</u>
Mean	97	93	93	91	99	88	96	95	88	92
Plant Height (feet)(Urbana)										
W22	<u>6.5/</u>	9.0	8.2	7.8	8.2	8.5	8.5	8.2	8.8	8.2
Oh51A	9.0	<u>6.2/</u>	8.8	8.5	8.8	9.0	8.5	9.0	9.0	8.0
W8	8.2	8.8	<u>6.8/</u>	7.8	8.2	8.0	8.8	8.0	8.0	8.0
M14	7.8	8.5	7.8	<u>5.8/</u>	8.0	8.0	8.0	8.2	8.2	8.0
I205	8.2	8.8	8.2	8.0	<u>7.5/</u>	8.2	8.5	8.5	8.8	8.2
W32	8.5	9.0	8.0	8.0	8.2	<u>6.2/</u>	8.0	8.5	8.2	8.0
Oh28	8.5	8.5	8.8	8.0	8.5	8.0	<u>6.8/</u>	8.5	8.5	8.0
WF9	8.2	9.0	8.0	8.2	8.5	8.5	8.5	<u>6.8/</u>	8.2	8.0
A	8.8	9.0	8.0	8.2	8.8	8.2	8.5	8.2	<u>6.5/</u>	8.2
N6	8.2	8.0	8.0	8.0	8.2	8.0	8.0	8.0	<u>8.2</u>	<u>6.0/</u>
Mean	8.4	8.7	8.2	8.1	8.4	8.3	8.4	8.3	8.4	8.1
Ear Height (inches)(Urbana)										
W22	<u>22/</u>	36	36	28	32	34	32	28	38	33
Oh51A	36	<u>20/</u>	36	32	36	39	32	35	38	32
W8	36	36	<u>26/</u>	33	35	38	36	36	36	32
M14	28	32	33	<u>18/</u>	30	33	28	28	32	32
I205	32	36	35	30	<u>31/</u>	42	36	34	36	35
W32	34	39	38	33	42	<u>32/</u>	36	36	36	38
Oh28	32	32	36	28	36	36	<u>27/</u>	30	34	32
WF9	28	35	33	28	34	36	30	<u>26/</u>	36	29
A	38	38	36	32	36	36	34	<u>34</u>	<u>24/</u>	34
N6	33	32	32	32	35	38	32	29	<u>34</u>	<u>20/</u>
Mean	33	35	35	31	35	37	33	32	36	33

Table 1 (cont.)

Parent lines	Wisc. W22	Ohio 51A	Wisc. W8	Ill. M14	Iowa I205	Wisc. W32	Ohio 28	Ind. WF9	Ill. A	Nebr. N6
Ears per Hundred Pounds, Number										
W22	<u>451/</u>	179	180	197	169	194	188	166	195	177
Oh51A	179	<u>463/</u>	184	181	171	186	184	172	183	177
W8	180	184	<u>353/</u>	182	148	193	181	174	167	171
M14	197	181	182	<u>441/</u>	152	189	195	169	189	172
I205	169	171	148	152	<u>234/</u>	188	172	190	157	166
W32	194	186	193	189	188	<u>418/</u>	176	172	224	166
Oh28	188	184	181	195	172	176	<u>324/</u>	172	186	182
WF9	166	172	174	169	190	172	172	<u>282/</u>	172	159
A	195	183	167	189	157	224	186	172	<u>404/</u>	177
N6	177	177	171	172	166	166	182	159	177	<u>406/</u>
Mean	183	180	176	181	168	188	182	172	183	172
Ears per Plant, Number										
W22	<u>1.48/</u>	1.03	1.00	1.04	1.00	0.96	1.12	0.96	0.98	0.93
Oh51A	1.03	<u>1.36/</u>	0.96	0.98	0.96	1.02	0.98	0.98	1.00	0.98
W8	1.00	0.96	<u>1.20/</u>	1.00	0.95	1.00	0.98	1.00	1.00	0.97
M14	1.04	0.98	1.00	<u>0.95/</u>	0.95	0.95	1.06	1.00	0.97	1.02
I205	1.00	0.96	0.95	0.95	<u>0.94/</u>	1.04	1.00	0.98	0.96	0.97
W32	0.96	1.02	1.00	0.95	1.04	<u>0.95/</u>	0.96	0.90	1.00	0.98
Oh28	1.12	0.98	0.98	1.06	1.00	0.96	<u>0.92/</u>	0.96	1.00	0.96
WF9	0.96	0.98	1.00	1.00	0.98	0.90	0.96	<u>1.02/</u>	0.98	1.02
A	0.98	1.00	1.00	0.97	0.96	1.00	1.00	0.98	<u>0.92/</u>	0.97
N6	0.93	0.98	0.97	1.02	0.97	0.98	0.96	1.02	0.97	<u>1.00/</u>
Mean	1.00	0.99	0.98	1.00	0.98	0.98	1.00	0.98	0.98	0.98
Visual Maturity Rating (1)										
W22	4.0	3.3	3.5	1.5	3.0	2.5	4.0	2.3	3.3	4.5
Oh51A	3.5	<u>5.0/</u>	4.0	2.5	2.3	2.8	3.5	2.0	2.8	4.5
W8	3.5	4.0	<u>5.0/</u>	2.0	2.5	2.5	5.0	2.5	3.5	3.8
M14	1.5	2.5	2.0	<u>3.0/</u>	1.3	1.5	2.5	2.0	2.3	2.0
I205	3.0	2.3	2.5	1.3	<u>2.5/</u>	2.5	4.3	2.0	4.3	3.8
W32	2.5	2.8	2.5	1.5	2.5	<u>3.5/</u>	3.8	2.3	4.3	3.5
Oh28	4.0	3.5	5.0	2.5	4.3	3.8	<u>3.5/</u>	4.0	3.8	5.0
WF9	2.3	2.0	2.5	2.0	2.0	2.3	4.0	<u>3.0/</u>	2.5	4.3
A	3.3	2.8	3.5	2.3	4.3	4.3	3.8	2.5	<u>3.5/</u>	3.8
N6	4.5	4.5	3.8	2.0	3.8	3.5	5.0	4.3	3.8	<u>1.0/</u>
Mean	3.1	3.1	3.3	2.0	2.9	2.9	4.0	2.7	3.4	3.9

(1) Ratings made September 26, 1946, based on dryness of husks for single crosses and dryness of leaves and husks for inbred lines. 1 = very dry; 5 = very green.

Table 2.--MIDSEASON YELLOW INBRED LINES AND SINGLE CROSSES: Urbana, 1946
(Means of three replications for single cross data
and two replications for inbred line data)

Parent lines	Iowa L304A	Ill. Hy	Ohio 07	Iowa L317	Ind. P8	Ind. 38-11	Ind. B2	Ind. WF9	Nebr. N6	Kans. K230
Acre Yield, Bushels										
L304A	<u>53.5/</u>	144.2	-	-	-	-	115.5	110.1	115.3	-
Hy	144.2	<u>59.9/</u>	125.7	116.5	120.9	120.9	111.7	109.0	115.1	91.2
07	-	125.7	<u>60.3/</u>	128.8	116.5	112.2	105.9	109.8	110.5	-
L317	-	116.5	128.8	<u>47.5/</u>	-	98.2	99.4	101.6	109.4	104.8
P8	-	120.9	116.5	-	<u>57.3/</u>	93.8	115.1	108.5	110.7	89.2
38-11	-	120.9	112.2	98.2	93.8	<u>57.2/</u>	102.4	118.4	99.8	98.3
B2	115.5	111.7	105.9	99.4	115.1	102.4	<u>55.2/</u>	101.6	100.1	96.2
WF9	110.1	109.0	109.8	101.6	108.5	118.4	101.6	<u>56.0/</u>	92.7	91.2
N6	115.3	115.1	110.5	109.4	110.7	99.8	100.1	92.7	<u>36.4/</u>	82.1
K230	-	102.4	-	104.8	89.2	98.3	96.2	91.2	82.1	<u>33.9/</u>
Mean	121.3	118.5	115.6	108.4	107.8	105.5	105.3	104.8	104.0	94.9

A difference of less than 10.0 bushels between any two single-cross yields is not significant.

Days to Half-Silk										
L304A	<u>70/</u>	68	-	-	-	-	70	68	70	-
Hy	68	<u>74/</u>	70	71	70	72	70	69	69	70
07	-	70	<u>75/</u>	72	71	75	72	69	70	-
L317	-	71	72	<u>79/</u>	-	75	72	71	71	73
P8	-	70	71	-	<u>76/</u>	73	72	68	70	69
38-11	-	72	75	75	73	<u>80/</u>	74	69	72	72
B2	70	70	72	72	72	74	<u>74/</u>	70	72	70
WF9	68	69	69	71	68	69	70	<u>70/</u>	68	68
N6	70	69	70	71	70	72	72	68	<u>64/</u>	69
K230	-	70	-	73	69	72	70	68	69	<u>77/</u>
Mean	69	70	71	72	70	73	71	69	70	70

Table 2 (cont.)

Parent lines	Iowa L304A	Ill. Hy	Ohio 07	Iowa L317	Ind. P8	Ind. 38-11	Ind. B2	Ind. WF9	Nebr. N6	Kans. K230
Moisture in Grain at Harvest, Percent										
L304A	<u>24.8/</u>	25.0	-	-	-	-	25.4	23.9	25.0	-
Hy	25.0	<u>28.3/</u>	24.3	28.6	26.8	24.0	29.2	27.0	27.8	25.6
07	-	24.3	<u>24.6/</u>	23.7	23.3	22.3	24.8	23.3	23.9	-
L317	-	28.6	23.7	<u>22.7/</u>	-	24.5	27.0	20.6	25.6	24.7
P8	-	26.8	23.3	-	<u>21.1/</u>	23.7	26.4	23.9	28.1	25.5
38-11	-	24.0	22.3	24.5	23.7	<u>19.7/</u>	22.9	23.9	25.2	24.0
B2	25.4	29.2	24.8	27.0	26.4	22.9	<u>24.7/</u>	24.6	26.4	25.6
WF9	23.9	27.0	23.3	20.6	23.9	23.9	24.6	<u>22.3/</u>	24.8	23.4
N6	25.0	27.8	23.9	25.6	28.1	25.2	26.4	24.8	<u>16.7/</u>	23.3
K230	-	25.6	-	24.7	25.5	24.0	25.6	23.4	23.3	<u>23.8/</u>
Mean	24.8	26.5	23.7	25.0	25.4	23.8	25.8	23.9	25.6	24.6
Shelling Percentage										
L304A	<u>81.7/</u>	86.7	-	-	-	-	84.0	86.8	86.5	-
Hy	<u>86.7</u>	<u>86.1/</u>	87.2	83.4	85.6	84.4	84.3	85.9	85.9	84.5
07	-	<u>87.2</u>	<u>84.3/</u>	85.7	86.9	83.2	84.4	86.1	85.6	-
L317	-	83.4	85.7	<u>79.4/</u>	-	79.9	82.0	83.3	84.0	84.3
P8	-	85.6	86.9	-	<u>84.0/</u>	84.1	83.2	87.1	87.1	85.9
38-11	-	84.4	83.2	79.9	84.1	<u>79.5/</u>	79.2	84.7	83.6	81.3
B2	84.0	84.3	84.4	82.0	83.2	79.2	<u>77.0/</u>	82.2	81.6	81.3
WF9	86.8	85.9	86.1	83.3	87.1	84.7	82.2	<u>85.3/</u>	86.0	83.5
N6	86.5	85.9	85.6	84.0	87.1	83.6	81.6	86.0	<u>83.5/</u>	83.8
K230	-	84.5	-	84.3	85.9	81.3	81.3	83.5	83.8	<u>72.7/</u>
Mean	86.0	85.3	85.6	83.2	85.7	82.6	82.5	85.1	84.9	83.5
Erect Plants at Harvest, Percent										
L304A	<u>84/</u>	93	-	-	-	-	92	94	73	-
Hy	93	<u>90/</u>	100	91	100	96	99	99	98	99
07	-	100	<u>95/</u>	98	100	99	100	100	100	-
L317	-	91	98	<u>30/</u>	-	60	90	99	69	83
P8	-	100	100	-	<u>50/</u>	98	100	100	94	100
38-11	-	96	99	60	98	<u>96/</u>	94	100	100	100
B2	92	99	100	90	100	94	<u>100/</u>	100	99	100
WF9	94	99	100	99	100	100	<u>100/</u>	<u>100/</u>	100	100
N6	73	98	100	69	94	100	99	<u>100/</u>	<u>100/</u>	100
K230	-	99	-	83	100	100	100	100	100	<u>78/</u>
Mean	88	97	100	84	99	93	97	99	93	97

Table 2 (cont.)

Parent lines	Iowa L304A	Ill. Hy	Ohio 07	Iowa L317	Ind. P8	Ind. 38-11	Ind. B2	Ind. WF9	Nebr. N6	Kans. K230
Plant Height (feet)										
L304A	<u>7.8/</u>	10.2	-	-	-	-	9.5	9.3	8.8	-
Hy	10.2	<u>7.5/</u>	9.8	10.0	10.0	9.7	9.7	9.7	9.2	9.3
07	-	9.8	<u>8.2/</u>	10.0	9.7	10.2	9.2	8.8	8.7	-
L317	-	10.0	10.0	<u>7.8/</u>	-	10.3	9.8	9.7	9.0	9.3
P8	-	10.0	9.7	-	<u>7.5/</u>	9.0	9.0	8.5	8.7	8.2
38-11	-	9.7	10.2	10.3	9.0	<u>7.5/</u>	9.0	9.2	8.8	9.2
B2	9.5	9.7	9.2	9.8	9.0	9.0	<u>7.2/</u>	9.0	8.5	8.5
WF9	9.3	9.7	8.8	9.7	8.5	9.2	9.0	<u>6.5/</u>	8.0	8.2
N6	8.8	9.2	8.7	9.0	8.7	8.8	8.5	8.0	<u>5.8/</u>	7.8
K230	-	9.3	-	9.3	8.2	9.2	8.5	8.2	7.8	<u>6.0/</u>
Mean	9.5	9.7	9.5	9.7	9.3	9.4	9.1	8.9	8.6	8.6
Ear Height (inches)										
L304A	<u>34/</u>	49	-	-	-	-	45	41	42	-
Hy	49	<u>34/</u>	45	53	48	52	46	40	43	45
07	-	45	<u>28/</u>	49	41	49	40	37	36	-
L317	-	53	49	<u>44/</u>	-	55	47	45	44	47
P8	-	48	41	-	<u>35/</u>	42	42	34	35	33
38-11	-	52	49	55	42	<u>34/</u>	42	40	40	45
B2	45	46	40	47	42	42	<u>28/</u>	32	35	36
WF9	41	40	37	45	34	40	32	<u>26/</u>	30	31
N6	42	43	36	44	35	40	35	30	<u>20/</u>	34
K230	-	45	-	47	33	45	36	31	34	<u>24/</u>
Mean	44	47	42	49	39	46	41	37	38	39
Ears per Hundred Pounds, Number										
L304A	<u>433/</u>	115	-	-	-	-	129	151	138	-
Hy	115	<u>261/</u>	134	118	125	127	131	132	129	154
07	-	134	<u>266/</u>	157	140	143	153	149	148	-
L317	-	118	157	<u>299/</u>	-	164	142	154	149	153
P8	-	125	140	-	<u>263/</u>	167	135	160	146	164
38-11	-	127	143	164	167	<u>273/</u>	149	135	162	152
B2	129	131	153	142	135	149	<u>248/</u>	155	154	152
WF9	151	132	149	154	160	135	155	<u>255/</u>	173	180
N6	138	129	148	149	146	162	154	173	<u>452/</u>	193
K230	-	154	-	153	164	152	152	180	193	<u>388/</u>
Mean	133	129	146	148	148	150	144	154	155	164

Table 2 (cont.)

Parent lines	Iowa L304A	Ill. Hy	Ohio 07	Iowa L317	Ind. P8	Ind. 38-11	Ind. B2	Ind. WF9	Nebr. N6	Kans. K230
Ears per Plant, Number										
L304A	<u>1.52/</u>	1.03	-	-	-	-	1.02	1.00	1.00	-
Hy	1.03	<u>1.03/</u>	1.05	1.04	0.98	1.00	1.03	1.00	1.00	1.00
07	-	1.05	<u>1.07/</u>	1.25	1.00	1.04	1.03	1.05	1.05	-
L317	-	1.04	<u>1.25</u>	<u>1.04/</u>	-	1.00	1.00	0.98	1.05	1.02
P8	-	0.98	1.00	-	<u>1.06/</u>	1.00	1.00	1.00	1.03	0.98
38-11	-	1.00	1.04	1.00	1.00	<u>0.98/</u>	1.02	1.00	0.98	1.00
B2	1.02	1.03	1.03	1.00	1.00	1.02	<u>0.97/</u>	1.02	1.00	0.98
WF9	1.00	1.00	1.05	0.98	1.00	1.00	1.02	<u>0.98/</u>	0.93	1.00
N6	1.00	1.00	1.05	1.05	1.03	0.98	1.00	0.93	<u>0.98/</u>	1.02
K230	-	1.00	-	1.02	0.98	1.00	0.98	1.00	1.02	<u>0.97/</u>
Mean	1.01	1.01	1.07	1.05	1.00	1.00	1.01	1.00	1.01	1.00
Smutted Plants, Percent										
L304A	<u>28/</u>	1	-	-	-	-	0	1	0	-
Hy	1	<u>0/</u>	0	3	3	5	1	0	0	1
07	-	0	<u>0/</u>	0	1	2	0	0	0	-
L317	-	3	0	<u>11/</u>	-	3	2	1	0	0
P8	-	3	1	-	<u>19/</u>	13	6	8	2	2
38-11	-	5	2	3	<u>13</u>	<u>2/</u>	3	0	2	1
B2	0	1	0	2	6	3	<u>0/</u>	0	2	0
WF9	1	0	0	1	8	0	<u>0/</u>	<u>0/</u>	1	0
N6	0	0	0	0	2	2	2	1	<u>0/</u>	0
K230	-	1	-	0	2	1	0	0	0	<u>2/</u>
Mean	1	2	0	1	5	4	2	1	1	1

Table 3.--LATE YELLOW INBRED LINES AND SINGLE CROSSES: Urbana and Bluffs, 1946
(Means of six replications for single cross data
and four replications for inbred line data)

Parent lines	U.S. CI.21E	Ind. 38-11	Kans. K201C	Kans. K4	Iowa L317	U.S. CI.7	Kans. Kys	Kans. K155	Tenn. T8	U.S. CI.3A
Acre Yield, Bushels										
CI.21E	<u>63.2/</u>	131.6	133.0	125.6	137.7	118.4	120.8	132.6	129.2	123.2
38-11	131.6	<u>56.8/</u>	117.4	128.3	119.0	129.0	120.4	118.6	117.6	121.0
K201C	133.0	117.4	<u>41.7/</u>	118.6	127.2	110.2	111.6	107.8	104.0	112.4
K4	125.6	128.3	118.6	<u>33.3/</u>	109.3	118.0	117.9	113.5	108.8	99.1
L317	137.7	119.0	127.2	109.3	<u>44.8/</u>	109.6	110.8	108.1	110.2	106.5
CI.7	118.4	129.0	110.2	118.0	109.6	<u>62.7/</u>	120.5	114.4	109.4	108.1
Kys	120.8	120.4	111.6	117.9	110.8	120.5	<u>42.4/</u>	111.2	125.4	98.6
K155	132.6	118.6	107.8	113.5	108.1	114.4	111.2	<u>21.8/</u>	118.3	93.3
T8	129.2	117.6	104.0	108.8	110.2	109.4	125.4	118.3	<u>45.1/</u>	77.6
CI.3A	123.2	121.0	112.4	99.1	106.5	108.1	98.6	93.3	77.6	<u>31.7/</u>
Mean	128.0	122.5	115.8	115.5	115.4	115.3	115.2	113.1	111.2	104.4

A difference of less than 14.4 bushels between any two single-cross yields is not significant.

Days to Half-Silk (Urbana)										
CI.21E	<u>83/</u>	74	74	78	73	75	79	76	73	74
38-11	74	<u>82/</u>	74	77	72	72	76	72	72	71
K201C	74	74	<u>86/</u>	78	73	74	77	75	72	75
K4	78	77	78	<u>87/</u>	79	79	80	78	76	74
L317	73	72	73	79	<u>81/</u>	75	76	74	73	74
CI.7	75	72	74	79	75	<u>70/</u>	77	75	75	75
Kys	79	76	77	80	76	77	<u>87/</u>	76	77	75
K155	76	72	75	78	74	75	76	<u>82/</u>	75	73
T8	73	72	72	76	73	75	77	75	<u>80/</u>	73
CI.3A	74	71	75	74	74	75	75	73	73	<u>70/</u>
Mean	75	73	75	78	74	75	77	75	74	74

Moisture in Grain at Harvest, Percent										
CI.21E	<u>32.8/</u>	23.0	26.4	26.2	25.3	25.0	27.4	25.5	25.0	27.2
38-11	23.0	<u>18.6/</u>	24.2	22.4	21.2	22.9	22.5	23.4	23.4	24.1
K201C	26.4	24.2	<u>33.6/</u>	24.8	26.4	26.8	26.2	25.0	25.5	26.3
K4	26.2	22.4	24.8	<u>32.9/</u>	28.0	25.6	27.0	25.9	26.2	25.6
L317	25.3	21.2	26.4	28.0	<u>22.2/</u>	25.8	24.6	24.1	25.4	25.5
CI.7	25.0	22.9	26.8	25.6	25.8	<u>25.3/</u>	24.6	22.6	25.0	22.5
Kys	27.4	22.5	26.2	27.0	24.6	24.6	<u>28.9/</u>	24.0	24.0	26.2
K155	25.5	23.4	25.0	25.9	24.1	22.6	24.0	<u>30.4/</u>	24.3	24.8
T8	25.0	23.4	25.5	26.2	25.4	25.0	24.0	24.3	<u>25.1/</u>	26.6
CI.3A	27.2	24.1	26.3	25.6	25.5	22.5	26.2	24.8	26.6	<u>25.4/</u>
Mean	25.7	23.0	25.7	25.7	25.1	24.5	25.2	24.4	25.0	25.4

Table 3 (cont.)

Parent lines	U.S. CI.21E	Ind. 38-11	Kans. K201C	Kans. K4	Iowa L317	U.S. CI.7	Kans. Kys	Kans. K155	Tenn. T8	U.S. CI.3A
Shelling Percentage										
CI.21E	79.2/	82.1	82.6	82.6	81.9	83.3	81.6	83.1	82.9	82.0
38-11	82.1	80.7/	81.4	83.6	83.2	84.2	82.6	83.4	82.5	79.8
K201C	82.6	81.4	79.5/	83.6	81.4	83.2	81.7	83.6	82.5	80.4
K4	82.6	83.6	83.6	75.8/	82.2	82.8	81.8	84.0	84.3	80.9
L317	81.9	83.2	81.4	82.2	77.2/	82.9	82.9	83.4	81.4	80.2
CI.7	83.3	84.2	83.2	82.8	82.9	83.2/	81.5	84.0	82.2	81.6
Kys	81.6	82.6	81.7	81.8	82.9	81.5	76.7/	83.0	83.4	78.6
K155	83.1	83.4	83.6	84.0	83.4	84.0	83.0	78.3/	83.3	81.0
T8	82.9	82.5	82.5	84.3	81.4	82.2	83.4	83.3	82.6/	80.0
CI.3A	82.0	79.8	80.4	80.9	80.2	81.6	78.6	81.0	80.0	76.4/
Mean	82.5	82.5	82.3	82.9	82.2	82.9	81.9	83.2	82.5	80.5
Erect Plants at Harvest, Percent										
CI.21E	95/	89	92	58	68	90	86	97	94	66
38-11	89	88/	94	84	80	96	48	86	96	74
K201C	92	94	90/	92	82	94	85	92	96	72
K4	58	84	92	25/	52	76	62	68	70	50
L317	68	80	82	52	38/	76	9	44	58	30
CI.7	90	96	94	76	76	81/	80	79	76	68
Kys	86	48	85	62	9	80	50/	70	86	40
K155	97	86	92	68	44	79	70	97/	88	55
T8	94	96	96	70	58	76	86	88	95/	40
CI.3A	66	74	72	50	30	68	40	55	40	46/
Mean	82	83	89	68	55	82	63	75	78	55

Table 3 (cont.)

Parent lines	U.S. CI.21E	Ind. 38-11	Kans. K201C	Kans. K4	Iowa L317	U.S. CI.7	Kans. Kys	Kans. K155	Tenn. T8	U.S. CI.3A
Root-Lodged Plants at Harvest, Percent										
CI.21E	0/	0	2	21	0	6	0	0	3	26
38-11	0	0/	0	4	0	0	0	0	2	3
K201C	2	0	2/	2	0	4	2	4	2	22
K4	21	4	2	13/	20	22	0	27	25	42
L317	0	0	0	20	0/	2	16	10	24	18
CI.7	6	0	4	22	2	4/	5	4	22	18
Kys	0	0	2	0	16	5	0/	7	2	20
K155	0	0	4	27	10	4	7	0/	6	28
T8	3	2	2	25	24	22	2	6	3/	49
CI.3A	26	3	22	42	18	18	20	28	49	10/
Mean	6	1	4	18	10	9	6	9	15	25
Stalk-Lodged Plants at Harvest, Percent										
CI.21E	5/	11	6	21	32	3	14	3	2	8
38-11	11	12/	6	12	20	4	52	14	2	23
K201C	6	6	5/	5	18	2	13	4	2	7
K4	21	12	5	62/	27	2	38	5	5	8
L317	32	20	18	27	62/	22	75	46	13	52
CI.7	3	4	2	2	22	15/	14	16	1	15
Kys	14	52	13	38	75	14	50/	24	12	40
K155	3	14	4	5	46	16	24	3/	6	17
T8	2	2	2	5	13	1	12	6	2/	16
CI.3A	8	23	7	8	52	15	40	17	16	44/
Mean	11	16	7	14	34	9	31	15	6	21
Plant Height, Feet										
CI.21E	7.9/	10.8	10.4	10.6	11.4	11.0	11.1	10.8	10.6	10.8
38-11	10.8	7.9/	10.0	11.0	10.9	10.6	11.0	10.2	10.5	10.5
K201C	10.4	10.0	7.4/	10.4	10.5	10.5	10.6	10.2	10.0	10.4
K4	10.6	11.0	10.4	7.3/	10.6	10.8	11.0	10.4	10.8	10.2
L317	11.4	10.9	10.5	10.6	7.8/	10.8	10.8	10.6	10.6	10.8
CI.7	11.0	10.6	10.5	10.8	10.8	7.8/	10.7	10.2	10.8	10.4
Kys	11.1	11.0	10.6	11.0	10.8	10.7	7.5/	10.6	10.8	11.0
K155	10.8	10.2	10.2	10.4	10.6	10.2	10.6	7.4/	10.2	9.9
T8	10.6	10.5	10.0	10.8	10.6	10.8	10.8	10.2	8.3/	10.1
CI.3A	10.8	10.5	10.4	10.2	10.8	10.4	11.0	9.9	10.1	7.5/
Mean	10.8	10.6	10.3	10.6	10.8	10.6	10.8	10.3	10.5	10.5

Table 3 (cont.)

Parent lines	U.S. CI.21E	Ind. 38-11	Kans. K201C	Kans. K4	Iowa L317	U.S. CI.7	Kans. Kys	Kans. K155	Tenn. T8	U.S. CI.3A
Ear Height, Inches										
CI.21E	<u>38/</u>	57	56	56	60	58	54	56	55	52
38-11	57	<u>38/</u>	54	57	61	56	56	53	58	56
K201C	56	54	<u>40/</u>	58	62	56	59	54	54	56
K4	56	57	58	<u>38/</u>	62	59	61	55	60	56
L317	60	61	62	62	<u>47/</u>	62	62	58	62	59
CI.7	58	56	56	59	62	<u>42/</u>	61	57	59	56
Kys	54	56	59	61	62	61	<u>42/</u>	61	60	58
K155	56	53	54	55	58	57	61	<u>37/</u>	56	51
T8	55	58	54	60	62	59	60	56	<u>46/</u>	56
CI.3A	52	56	56	56	59	56	58	51	56	<u>40/</u>
Mean	56	56	57	58	61	58	59	56	58	56
Ears per Hundredweight, Number										
CI.21E	<u>222/</u>	134	126	132	124	135	132	131	130	122
38-11	134	<u>328/</u>	148	146	158	136	150	144	146	138
K201C	126	148	<u>317/</u>	152	126	132	144	140	148	129
K4	132	146	152	<u>437/</u>	148	129	148	145	154	142
L317	124	158	126	148	<u>410/</u>	152	154	148	150	156
CI.7	135	136	132	129	152	<u>270/</u>	139	150	142	148
Kys	132	150	144	148	154	139	<u>363/</u>	145	142	158
K155	131	144	140	145	148	150	145	<u>428/</u>	145	142
T8	130	146	148	154	150	142	142	145	<u>310/</u>	166
CI.3A	122	138	129	142	156	148	158	142	166	<u>432/</u>
Mean	130	144	138	144	146	140	146	143	147	145
Ears per Plant, Number										
CI.21E	<u>.94/</u>	.96	.99	1.02	1.00	1.01	.95	.98	1.00	.92
38-11	.96	<u>.99/</u>	1.00	1.01	1.02	.96	1.00	.98	.94	.93
K201C	.99	1.00	<u>.89/</u>	1.02	1.01	1.12	.90	.94	.92	.93
K4	1.02	1.01	1.02	<u>1.09/</u>	.99	.96	1.02	.96	1.02	.89
L317	1.00	1.02	1.01	.99	<u>1.06/</u>	1.04	.96	.97	.97	.94
CI.7	1.01	.96	1.12	.96	1.04	<u>.94/</u>	.93	.94	.92	.96
Kys	.95	1.00	.90	1.02	.96	.93	<u>.92/</u>	.96	.99	.98
K155	.98	.98	.94	.96	.97	.94	.96	<u>.66/</u>	.98	.84
T8	1.00	.94	.92	1.02	.97	.92	.99	.98	<u>.84/</u>	.78
CI.3A	.92	.93	.98	.89	.94	.96	.98	.84	.78	<u>.88/</u>
Mean	.98	.98	.99	.99	.99	.98	.97	.95	.95	.91

Table 3 (cont.)

Parent lines	U.S. CI.21E	Ind. 38-11	Kans. K201C	Kans. K4	Iowa L317	U.S. CI.7	Kans. Kys	Kans. K155	Tenn. T8	U.S. CI.3A
Smutted Plants, Percent										
CI.21E	0/	7	2	0	3	1	2	3	0	2
38-11	7	2/	4	0	1	1	0	5	0	1
K201C	2	4	1/	2	2	15	4	2	2	6
K4	0	0	2	0/	0	1	0	4	0	2
L317	3	1	2	0	0/	0	2	2	0	0
CI.7	1	1	15	1	0	0/	0	0	0	0
Kys	2	0	4	0	2	0	1/	3	2	2
K155	3	5	2	4	2	0	3	10/	3	3
T8	0	0	2	0	0	0	2	3	1/	0
CI.3A	2	1	6	2	0	0	2	3	0	1/
Mean	2	2	4	1	1	2	2	3	1	2
Prematurely Dead Plants, Percent (Bluffs)										
CI.21E	4/	4	1	14	12	0	12	1	0	10
38-11	4	28/	1	5	10	1	33	24	0	14
K201C	1	1	3/	0	0	0	0	0	2	0
K4	14	5	0	100/	11	0	8	0	2	9
L317	12	10	0	11	82/	5	83	44	26	72
CI.7	0	1	0	0	5	26/	8	15	0	46
Kys	12	33	0	8	83	8	14/	7	1	67
K155	1	24	0	0	44	15	7	0/	0	26
T8	0	0	2	2	26	0	1	0	1/	0
CI.3A	10	14	0	9	72	46	67	26	0	87/
Mean	6	10	0	5	29	8	24	13	3	27

Table 4.--LATE WHITE SINGLE CROSSES: Two-Year Averages, 1945-1946
 Urbana, 1945; Urbana and Bluffs, 1946
 (Means of four replications in 1945 and six replications in 1946)

Parent lines	Ind. H21	Kans. K64	Ill. R30	Ky. 27	U.S. Cl.61	Ind. 33-16	Kans. K6
Acre Yield, Bushels							
H21	-	112.6	117.6	111.6	120.4	111.6	116.6
K64	112.6	-	110.8	-	105.4	112.4	102.8
R30	117.6	110.8	-	-	-	102.8	95.8
Ky27	111.6	-	-	-	104.9	100.8	100.8
Cl.61	120.4	105.4	-	104.9	-	83.4	92.9
33-16	111.6	112.4	102.8	100.8	83.4	-	78.0
K6	116.6	102.8	95.8	100.8	92.9	78.0	-
Mean	115.1	108.8	106.8	104.5	101.4	98.2	97.8
Moisture in Grain at Harvest, Percent							
H21	-	26.2	24.2	22.1	22.5	20.9	23.2
K64	26.2	-	25.1	-	28.4	23.0	23.4
R30	24.2	25.1	-	-	-	21.3	23.7
Ky27	22.1	-	-	-	21.3	20.4	21.4
Cl.61	22.5	28.4	-	21.3	-	22.2	22.7
33-16	20.9	23.0	21.3	20.4	22.2	-	20.8
K6	23.2	23.4	23.7	21.4	22.7	20.8	-
Mean	23.2	25.2	23.6	21.3	23.4	21.4	22.5
Shelling Percentage							
H21	-	84	83	84	80	83	78
K64	84	-	82	-	76	84	80
R30	83	82	-	-	-	84	78
Ky27	84	-	-	-	82	86	82
Cl.61	80	76	-	82	-	74	76
33-16	83	84	84	86	74	-	80
K6	78	80	78	82	76	80	-
Mean	82	81	82	84	78	82	79

Table 4 (cont.)

Parent lines	Ind. H21	Kans. K64	Ill. R30	Ky. 27	U.S. CI.61	Ind. 33-16	Kans. K6
Erect Plants at Harvest, Percent							
H21	-	79	66	82	79	64	64
K64	79	-	64	-	73	67	72
R30	66	64	-	-	-	78	72
Ky27	82	-	-	-	89	70	54
CI.61	79	73	-	89	-	67	58
33-16	64	67	78	70	67	-	70
K6	64	72	72	54	58	70	-
Mean	72	71	70	74	73	69	65
Root-Lodged Plants at Harvest, Percent							
H21	-	18	32	4	18	29	32
K64	18	-	29	-	27	26	25
R30	32	29	-	-	-	10	18
Ky27	4	-	-	-	4	12	21
CI.61	18	27	-	4	-	29	34
33-16	29	26	10	12	29	-	23
K6	32	25	18	21	34	23	-
Mean	22	25	22	10	22	22	26
Stalk-Lodged Plants at Harvest, Percent							
H21	-	3	2	13	2	8	4
K64	3	-	6	-	0	6	3
R30	2	6	-	-	-	13	10
Ky27	13	-	-	-	6	18	26
CI.61	2	0	-	6	-	4	8
33-16	8	6	13	18	4	-	8
K6	4	3	10	26	8	8	-
Mean	5	4	8	16	4	10	10

Table 4 (cont.)

Parent lines	Ind. H21	Kans. K64	Ill. R30	Ky. 27	U.S. CI.61	Ind. 33-16	Kans. K6
Ears per Hundred Pounds, Number							
H21	-	122	130	138	124	138	124
K64	122	-	143	-	146	138	154
R30	130	143	-	-	-	154	133
Ky27	138	-	-	-	146	160	170
CI.61	124	146	-	146	-	160	147
33-16	138	138	154	160	160	-	149
K6	124	154	133	170	147	149	-
Mean	129	148	143	159	145	150	146
Ears per Plant, Number							
H21	-	1.02	1.04	1.05	1.01	0.98	1.00
K64	1.02	-	0.98	-	0.98	1.00	1.14
R30	1.04	0.98	-	-	-	1.00	1.06
Ky27	1.05	-	-	-	1.14	1.01	1.16
CI.61	1.01	0.98	-	1.14	-	1.01	1.02
33-16	0.98	1.00	1.00	1.01	1.01	-	1.07
K6	1.00	1.14	1.06	1.16	1.02	1.07	-
Mean	1.02	1.02	1.02	1.09	1.03	1.01	1.08

Table 5.--LATE WHITE INBRED LINES AND SINGLE CROSSES: Urbana and Bluffs, 1946
(Means of six replications for single cross data
and four replications for inbred line data)

Parent lines	Ind. H21	U.S. CI.61	Kans. K64	Ky. 27	Ill. R30	Kans. K55	Ind. 33-16	Kans. K6
Acre Yield, Bushels								
H21	<u>29.8/</u>	151.2	135.2	136.8	136.2	-	138.4	131.7
CI.61	151.2	<u>8.4/</u>	147.8	134.9	-	-	115.8	134.4
K64	135.2	147.8	<u>62.6/</u>	-	120.4	124.1	135.4	130.4
Ky27	136.8	134.9	-	<u>43.0/</u>	123.2	131.4	119.2	115.7
R30	136.2	-	120.4	123.2	<u>53.0/</u>	128.2	124.2	119.4
K55	-	-	124.1	131.4	128.2	<u>45.6/</u>	115.2	109.0
33-16	138.4	115.8	135.4	119.2	124.2	115.2	<u>55.4/</u>	73.9
K6	131.7	134.4	130.4	115.7	119.4	109.0	73.9	<u>24.7/</u>
Mean	138.2	136.8	132.2	126.9	125.3	121.6	117.4	116.4
A difference of less than 11.8 bushels between any two single-cross yields is not significant.								
Days to Half Silk (Urbana)								
H21	<u>82/</u>	76	76	75	72	-	70	74
CI.61	76	<u>86/</u>	70	74	-	-	74	74
K64	76	70	<u>80/</u>	-	73	74	73	74
Ky27	75	74	-	<u>78/</u>	72	72	72	72
R30	72	-	73	72	<u>76/</u>	74	71	74
K55	-	-	74	72	74	<u>80/</u>	72	74
33-16	70	74	73	72	71	72	<u>76/</u>	74
K6	74	74	74	72	74	74	74	<u>84/</u>
Mean	74	74	73	73	73	73	72	74
Moisture in Grain at Harvest, Percent								
H21	<u>24.2/</u>	25.4	28.9	24.2	27.5	-	22.8	24.1
CI.61	25.4	<u>32.8/</u>	25.7	22.9	-	-	21.4	23.3
K64	28.9	25.7	<u>28.8/</u>	-	26.4	28.1	24.9	24.9
Ky27	24.2	22.9	-	<u>23.8/</u>	23.5	25.0	22.4	22.9
R30	27.5	-	26.4	23.5	<u>31.0/</u>	25.9	24.0	26.3
K55	-	-	28.1	25.0	25.9	<u>27.9/</u>	22.3	27.5
33-16	22.8	21.4	24.9	22.4	24.0	22.3	<u>20.2/</u>	22.2
K6	24.1	23.3	24.9	22.9	26.3	27.5	22.2	<u>19.0/</u>
Mean	25.5	23.7	26.5	23.5	25.6	25.8	22.9	24.5

Table 5 (cont.)

Parent lines	Ind. H21	U.S. CI.61	Kans. K64	Ky. 27	Ill. R30	Kans. K55	Ind. 33-16	Kans. K6
Shelling Percentage								
H21	<u>82.0/</u>	81.2	84.8	85.4	84.6	-	85.2	78.8
CI.61	81.2	<u>46.3/</u>	81.4	84.2	-	-	81.2	82.6
K64	84.8	81.4	<u>80.7/</u>	-	84.0	82.9	85.8	82.2
Ky27	85.4	84.2	-	<u>81.8/</u>	87.3	85.2	86.9	83.6
R30	84.6	-	84.0	87.3	<u>80.2/</u>	82.9	85.0	80.2
K55	-	-	82.9	85.2	82.9	<u>77.4/</u>	83.4	76.4
33-16	85.2	81.2	85.8	86.9	85.0	83.4	<u>81.0/</u>	83.3
K6	78.8	82.6	82.2	83.6	80.2	76.4	<u>83.3</u>	<u>80.0</u>
Mean	83.3	82.1	83.5	85.4	84.0	82.2	84.4	81.0

Erect Plants at Harvest, Percent

H21	<u>94/</u>	100	96	80	98	-	92	94
CI.61	100	<u>100/</u>	100	96	-	-	95	83
K64	96	100	<u>100/</u>	-	86	52	94	98
Ky27	80	96	-	<u>8/</u>	76	82	88	70
R30	98	-	86	76	<u>88/</u>	90	90	83
K55	-	-	52	82	90	<u>50/</u>	62	23
33-16	92	95	94	88	90	62	<u>79/</u>	94
K6	94	83	98	70	83	23	94	<u>86/</u>
Mean	93	95	88	82	87	62	88	78

Root-Lodged Plants at Harvest, Percent

H21	<u>0/</u>	0	2	2	1	-	2	2
CI.61	0	<u>0/</u>	0	0	-	-	0	4
K64	2	0	<u>0/</u>	-	10	47	0	0
Ky27	2	0	-	<u>0/</u>	0	2	2	4
R30	1	-	10	0	<u>0/</u>	0	0	6
K55	-	-	47	2	0	<u>50/</u>	36	76
33-16	2	0	0	2	0	36	<u>0/</u>	0
K6	2	4	0	4	6	76	0	<u>0/</u>
Mean	2	1	10	2	3	32	6	13

Table 5 (cont.)

Parent lines	Ind. H21	U.S. CI.61	Kans. K64	Ky. 27	Ill. R30	Kans. K55	Ind. 33-16	Kans. K6
Stalk-Lodged Plants at Harvest, Percent								
H21	6/	0	2	18	1	-	6	4
CI.61	0	0/	0	4	-	-	5	13
K64	2	0	0/	-	4	1	6	2
Ky27	18	4	-	92/	24	16	10	26
R30	1	-	4	24	12/	10	10	11
K55	-	-	1	16	10	0/	2	1
33-16	6	5	6	10	10	2/	21/	6
K6	4	13	2	26	11	1	6	14/
Mean	5	4	2	16	10	6	6	9
Plant Height, Feet								
H21	8.0/	10.2	10.0	10.0	9.7	-	10.0	10.2
CI.61	10.2	7.4/	11.0	9.9	-	-	10.2	10.5
K64	10.0	11.0	7.8/	-	9.7	9.6	10.3	10.6
Ky27	10.0	9.9	-	7.2/	9.0	9.0	9.4	9.6
R30	9.7	-	9.7	9.0	6.9/	10.2	9.2	9.6
K55	-	-	9.6	9.0	10.2	7.0/	9.5	9.8
33-16	10.0	10.2	10.3	9.4	9.2	9.5	8.5/	9.6
K6	10.2	10.5	10.6	9.6	9.6	9.8	9.6	8.0/
Mean	10.0	10.4	10.2	9.5	9.6	9.6	9.7	10.0
Ear Height, Inches								
H21	38/	55	52	52	50	-	50	56
CI.61	55	42/	62	53	-	-	54	60
K64	52	62	38/	-	50	50	50	56
Ky27	52	53	-	32/	42	46	46	50
R30	50	-	50	42	30/	52	46	53
K55	-	-	50	46	52	34/	50	51
33-16	50	54	50	46	46	50	46/	46
K6	56	60	56	50	53	51	46	46/
Mean	52	57	53	48	49	50	49	53

Table 5 (cont.)

Parent lines	Ind. H21	U.S. CI.61	Kans. K64	Ky. 27	Ill. R30	Kans. K55	Ind. 33-16	Kans. K6
Ears per Hundred Pounds, Number								
H21	<u>395/</u>	115	122	138	126	-	137	124
CI.61	115	<u>720/</u>	117	127	-	-	124	132
K64	122	117	<u>237/</u>	-	150	136	126	134
Ky27	138	127	-	<u>358/</u>	154	134	162	156
R30	126	-	150	154	<u>269/</u>	136	150	136
K55	-	-	136	134	136	<u>312/</u>	153	131
33-16	137	124	126	162	150	153	<u>273/</u>	150
K6	124	132	134	156	136	131	150	<u>557/</u>
Mean	127	123	131	145	142	138	143	138
Ears per Plant, Number								
H21	<u>.68/</u>	1.00	.94	.98	.99	-	.99	.98
CI.61	1.00	<u>.95/</u>	.99	.98	-	-	1.00	.98
K64	.94	.99	<u>1.11/</u>	-	.98	1.00	1.01	1.00
Ky27	.98	.98	-	<u>1.02/</u>	.98	.99	1.00	1.05
R30	.99	-	.98	.98	<u>.99/</u>	1.00	1.00	1.02
K55	-	-	1.00	.99	1.00	<u>.96/</u>	1.05	.94
33-16	.99	1.00	1.01	1.00	1.00	1.05	<u>.87/</u>	1.10
K6	.98	.98	1.00	1.05	1.02	.94	1.10	<u>.69/</u>
Mean	.98	.99	.99	1.00	1.00	1.00	1.02	1.01
Smutted Plants, Percent								
H21	<u>13/</u>	2	2	2	8	-	0	2
CI.61	2	<u>1/</u>	0	1	-	-	0	2
K64	2	0	<u>0/</u>	-	0	1	0	0
Ky27	2	1	-	<u>0/</u>	1	2	0	0
R30	8	-	0	1	<u>0/</u>	3	1	2
K55	-	-	1	2	3	<u>4/</u>	0	8
33-16	0	0	0	0	1	0	<u>2/</u>	0
K6	2	2	0	0	2	8	0	<u>2/</u>
Mean	3	1	0	1	2	3	0	2

Table 5 (cont.)

Parent lines	Ind H21	U.S. CI.61	Kans. K64	Ky. 27	Ill. R30	Kans. K55	Ind. 33-16	Kans. K6
Suckers per Hundred Plants								
H21	<u>2/</u>	5	11	9	28	-	2	12
CI.61	5	<u>2/</u>	4	2	-	-	2	3
K64	11	4	<u>7/</u>	-	16	4	14	3
Ky27	9	2	-	<u>2/</u>	12	2	6	3
R30	28	-	16	<u>12/</u>	<u>12/</u>	4	8	10
K55	-	-	4	2	4	<u>4/</u>	6	6
33-16	2	2	14	6	8	<u>6/</u>	<u>6/</u>	12
K6	12	3	3	3	10	6	12	<u>7/</u>
Mean	11	3	9	6	13	4	7	7
Prematurely Dead Plants, Percent (Bluffs)								
H21	<u>29/</u>	0	0	4	1	-	11	3
CI.61	0	<u>0/</u>	0	28	-	-	4	34
K64	0	0	<u>6/</u>	-	7	6	9	0
Ky27	4	28	-	<u>89/</u>	60	28	65	68
R30	1	-	7	60	<u>38/</u>	24	38	3
K55	-	-	6	28	24	<u>45/</u>	79	4
33-16	11	4	9	65	38	79	<u>28/</u>	4
K6	3	34	0	68	3	4	4	<u>8/</u>
Mean	3	13	4	42	22	28	30	17