

PERFORMANCE OF INBRED ~~LINES~~
AND SINGLE CROSSES OF CORN
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This report summarizes the performance of inbred lines and single crosses of corn tested in 1947 by the Illinois Agricultural Experiment Station. Data are presented from trials conducted in northern Illinois (Aurora, Kane County), central Illinois (Urbana, Champaign County) and south-central Illinois (Brownstown, Fayette County).

The authors and the Experiment Station acknowledge the cooperation of Harry Cochran, Aurora and P. E. Johnson, Newton, for providing land for some of these tests. The valuable assistance of W. E. Robbins, D. E. Alexander and C. E. Lewis in carrying out these tests is also appreciated.

All plots in these tests were planted and thinned by hand, three plants per hill being left in the experiments at Aurora and Urbana and two per hill at Brownstown. The material was compared in 2 x 5-hill plots arranged in a randomized block design at Brownstown. At the other locations plots were 2 x 8-hills in area and planted in a lattice-square 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 3, the underlined yield of 27.8 bushels per acre in the column headed "K4" is the yield of that inbred line. The mean value of 83.4 bushels per acre at the bottom of the column is the average yield of the nine single crosses of which K4 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 3, single crosses involving inbred "K4" averaged 83.4 bushels per acre while single crosses involving "R40" averaged only 69.8 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>(Mo4 x K201C)(Ky36-11 x 38-11)</u>		<u>(CI.27 x R40)(K155 x Kys)</u>		
	<u>Acre yield</u> bu.	<u>Erect plants</u> pct.	<u>Acre yield</u> bu.	<u>Erect plants</u> pct.	
Mo4 x Ky36-11	105.9	79	CI.27 x K155	70.1	13
Mo4 x 38-11	101.9	78	CI.27 x Kys	64.8	17
K201C x Ky36-11	94.2	96	R40 x K155	52.2	80
K201C x 38-11	91.9	92	R40 x Kys	58.8	86
	4 <u>393.9</u>	4 <u>345</u>		4 <u>245.9</u>	4 <u>196</u>
Prediction	98.5	86	Prediction	61.5	49

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 at Aurora and Urbana 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 1947. The conditions and results of each test will be discussed briefly in the following paragraphs.

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 - Oh28, I.224, WF9, Oh51A, I.205, W8
 Moisture in grain - I.224, W32, WF9, Oh51A, Oh28, M14
 Shelling percentage - I.224, Oh51A, W8, W32, M14, WF9
 Erect plants - W22, Oh28, Oh51A, WF9, M14, I.224
 Plant height - M14, W32, Oh28, W8, I.205, A
 Ear height - M14, Oh28, WF9, W22, Oh51A, W32
 Suckers - W8, W32, A, I.205, Oh51A, M14

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

Midseason Yellow Inbreds and Single Crosses

Ten midseason yellow inbred lines and 44 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 yields - H10, B10, 38-11, R61, WF9, O7A
Days to half-silk - W86, Hy, WF9, R61, H9, 38-11
Moisture in grain - W86, 38-11, WF9, H10, R61
Shelling percentage - H10, Hy, R61, W86, L317
Erect plants - W86, H10, 38-11, H9, B10, WF9
Plant height - WF9, R61, O7A, H9, B10, W86
Ear height - WF9, W86, H9, R61, Hy, 38-11
Ear size - R61, B10, O7A, H9, L317, Hy
Smutted plants - R61, O7A, Hy, W86, L317, B10

Late Yellow Inbred and Single Crosses

Ten late-maturing yellow inbred lines and their single crosses were grown at Urbana and Brownstown. The data are presented in Tables 3 and 4.

Urbana

Acre yield - Mo4, Ky36-11, K201C, 38-11, T8, K4
Days to half-silk - CI.27, 38-11, T8, K155, K201C, Mo4
Moisture in grain - 38-11, K155, CI.27, T8, Kys, Ky36-11
Shelling percentage - CI.27, Mo4, Ky36-11, K4, K155, Kys
Erect plants - R40, Ky36-11, 38-11, K201C, T8, K155
Plant height - R40, 38-11, K201C, T8, CI.27, K155
Ear height - R40, 38-11, K201C, CI.27, K155, Kys
Ear size - K201C, Ky36-11, Mo4, T8, K4, K155
Smutted plants - K4, Kys, T8, Ky36-11, Mo4, K201C

Brownstown

Acre yield - Mo4, Ky36-11, K201C, CI.27, K155, K4
Days to half-silk - - - - -
Moisture in grain - 38-11, K155, T8, K201C, CI.27, K4
Shelling percentage - K201C, CI.27, K4, Ky36-11, T8, Mo4
Erect plants - Ky36-11, 38-11, R40, K201C, K155, K4
Plant height - R40, T8, K201C, 38-11, Mo4, CI.27
Ear height - R40, K201C, 38-11, CI.27, K155, Mo4
Ear size - - - - -
Smutted plants - - - - -

Late White Inbreds and Single Crosses

Ten late-maturing white inbred lines and the 45 all-possible single crosses among them were compared at Urbana in 1946. The data are given in Table 5. Three-year average performance of 12 single crosses involving six of these lines is shown in Table 6. The following inbreds, performed best in single crosses as an average of the three years, 1945-1947.

Acre yield - H21, K64, R30, Ky27
Moisture in grain - Ky27, 33-16, CI.61, H21
Shelling percentage - Ky27, R30, H21, 33-16
Erect plants - Ky27, CI.61, H21, K64

The white lines performing best in hybrids in 1947 were:

Acre yield - H21, Ky27, K64, Ky49, K63, R30
Moisture in grain - 33-16, Ky27, Ky39, Mo2RF, CI.61, K64
Shelling percentage - Ky27, 33-16, K64, H21, Ky39, R30
Erect plants - H21, K64, 33-16, CI.61, Mo2RF, Ky27
Plant height - R30, 33-16, Ky27, Mo2RF, H21, K63
Ear height - 33-16, R30, Ky27, Ky49, H21, Mo2RF
Suckers - Mo2RF, H21, CI.61, Ky27, K64, Ky39

Table 1.--EARLY YELLOW INBRED LINES AND SINGLE CROSSES: Aurora, 1947
(Means of four replications)

Parent lines	Wisc. W8	Ind. WF9	Ill. M14	Wisc. W22	Ohio Oh28	Wisc. W32	Ohio Oh51A	Iowa I205	Iowa I224	Ill. A
Acre Yield, Bushels										
W8	<u>25.0</u> /*	78.9	74.5	70.0	77.1	72.5	69.6	81.7	77.3	65.2
WF9	78.9	<u>30.0</u>	68.9	82.4	85.9	70.1	68.9	78.0	77.4	77.9
M14	74.5	68.9	<u>19.7</u>	70.0	79.2	61.1	80.1	80.1	81.9	63.4
W22	70.0	82.4	70.0	<u>21.1</u>	65.1	70.1	73.1	74.8	69.3	68.3
Oh28	77.1	85.9	79.2	<u>65.1</u>	<u>27.0</u>	68.8	85.9	80.4	79.5	71.4
W32	72.5	70.1	61.1	70.1	<u>68.8</u>	<u>16.8</u>	68.1	69.1	76.6	47.7
Oh51A	69.6	68.9	80.1	73.1	85.9	<u>68.1</u>	<u>23.0</u>	70.2	84.6	73.7
I205	81.7	78.0	80.1	74.8	80.4	69.1	<u>70.2</u>	<u>32.8</u>	66.7	72.2
I224	77.3	77.4	81.9	69.3	79.5	76.6	84.6	66.7	<u>18.4</u>	77.6
A	65.2	77.9	63.4	68.3	71.4	47.7	73.7	72.2	77.6	<u>21.0</u>
Mean	74.1	76.5	73.2	71.5	77.0	67.1	74.9	74.8	76.8	68.6

*Yield of inbred line W8. Figures thus set off in this and similar tables pertain to the performance of the respective inbred lines themselves.

A difference of less than 3.1 bushels between any two single cross yields is not significant.

Percent Perfect Stand										
W8	<u>97</u>	87	97	97	95	97	99	100	93	98
WF9	87	<u>98</u>	94	95	98	94	92	97	95	99
M14	97	94	<u>97</u>	100	98	97	100	99	99	98
W22	97	95	100	<u>91</u>	100	99	99	98	98	96
Oh28	95	98	98	100	<u>93</u>	98	99	98	93	93
W32	97	94	97	99	98	<u>95</u>	100	96	94	96
Oh51A	99	92	100	99	99	100	<u>98</u>	94	97	98
I205	100	97	99	98	98	96	94	<u>97</u>	92	100
I224	93	95	99	98	93	94	97	92	<u>96</u>	98
A	98	99	98	96	93	96	98	100	98	<u>98</u>
Mean	96	95	98	98	97	97	98	97	95	97

Moisture in Grain at Harvest, Percent										
W8	<u>22.6</u>	22.9	23.0	25.6	22.3	21.0	21.7	25.7	20.8	24.9
WF9	22.9	<u>23.4</u>	21.9	19.2	20.5	18.7	20.4	23.4	19.5	20.8
M14	23.0	21.9	<u>18.6</u>	19.9	21.2	21.0	22.0	25.3	19.5	22.4
W22	25.6	19.2	19.9	<u>27.2</u>	24.3	22.2	21.2	21.1	19.9	25.9
Oh28	22.3	20.5	21.2	<u>24.3</u>	<u>18.9</u>	20.8	20.6	22.4	20.8	23.1
W32	21.0	18.7	21.0	22.2	20.8	<u>16.2</u>	20.2	21.2	19.0	20.2
Oh51A	21.7	20.4	22.0	21.2	20.6	20.2	<u>20.6</u>	23.6	20.6	21.2
I205	25.7	23.4	25.3	21.1	22.4	21.2	<u>23.6</u>	<u>19.0</u>	19.5	22.4
I224	20.8	19.5	19.5	19.9	20.8	19.0	20.6	19.5	<u>18.8</u>	19.4
A	24.9	20.8	22.4	25.9	23.1	20.2	21.2	22.4	19.4	<u>22.0</u>
Mean	23.1	20.8	21.8	22.1	21.8	20.5	21.3	22.7	19.9	22.3

Table 1 (cont.)

Parent lines	Wisc. W8	Ind. WF9	Ill. M14	Wisc. W22	Ohio Oh28	Wisc. W32	Ohio Oh51A	Iowa I205	Iowa I224	Ill. A
Shelling Percentage										
W8	<u>65.5/</u>	79.7	79.9	77.3	78.7	79.4	81.3	78.5	82.5	77.9
WF9	79.7	<u>67.6/</u>	75.3	77.5	77.4	79.4	78.5	77.8	80.3	78.5
M14	79.9	<u>75.3</u>	<u>72.8/</u>	78.0	78.6	78.5	79.4	79.7	82.2	76.6
W22	77.3	77.5	<u>78.0</u>	<u>52.2/</u>	75.1	76.1	77.5	76.4	80.8	76.2
Oh28	78.7	77.4	78.6	<u>75.1</u>	<u>67.4/</u>	77.4	80.4	77.0	80.8	77.5
W32	79.4	79.4	78.5	76.1	<u>77.4</u>	<u>69.2/</u>	81.0	78.6	82.0	76.5
Oh51A	81.3	78.5	79.4	77.5	80.4	<u>81.0</u>	<u>69.6/</u>	78.3	83.5	81.3
I205	78.5	77.8	79.7	76.4	77.0	78.6	<u>78.3</u>	<u>64.2/</u>	79.2	77.5
I224	82.5	80.3	82.2	80.8	80.8	82.0	83.5	79.2	<u>69.4/</u>	82.7
A	77.9	78.5	76.6	76.2	77.5	76.5	81.3	77.5	82.7	<u>69.3/</u>
Mean	79.5	78.3	78.7	77.2	78.1	78.8	80.1	78.1	81.6	78.3
Erect Plants at Harvest, Percent										
W8	<u>90/</u>	59	50	85	55	47	67	47	57	28
WF9	59	<u>92/</u>	77	85	80	60	76	86	86	51
M14	50	77	<u>94/</u>	91	87	50	86	91	61	48
W22	85	85	91	<u>100/</u>	89	80	96	89	83	43
Oh28	55	80	87	89	<u>95/</u>	80	91	83	84	36
W32	47	60	50	80	80	<u>52/</u>	65	46	61	38
Oh51A	67	76	86	96	91	65	<u>97/</u>	91	77	37
I205	47	86	91	89	83	46	91	<u>86/</u>	71	30
I224	57	86	61	83	84	61	77	<u>71</u>	<u>88/</u>	46
A	28	51	48	43	36	38	37	30	46	<u>76/</u>
Mean	55	73	71	82	76	59	76	70	70	40
Stalk Lodged Plants at Harvest, Percent										
W8	<u>10/</u>	41	49	11	43	53	33	49	42	72
WF9	41	<u>4/</u>	23	14	20	40	24	11	14	49
M14	49	23	<u>6/</u>	8	8	50	14	8	39	51
W22	11	14	8	<u>0/</u>	5	16	4	4	5	57
Oh28	43	20	8	5	<u>2/</u>	20	9	12	6	61
W32	53	40	50	16	20	<u>47/</u>	35	54	32	62
Oh51A	33	24	14	4	9	35	<u>3/</u>	6	23	63
I205	49	11	8	4	12	54	6	<u>7/</u>	18	68
I224	42	14	39	5	6	32	23	18	<u>3/</u>	50
A	72	49	51	57	61	62	63	68	50	<u>24/</u>
Mean	44	26	28	14	20	40	23	26	25	59

Table 1 (cont.)

Parent lines	Wisc. W8	Ind. WF9	Ill. M14	Wisc. W22	Ohio Oh28	Wisc. W32	Ohio Oh51A	Iowa I205	Iowa I224	Ill. A
Plant Height, Feet										
W8	<u>5.8/</u>	8.0	8.0	8.0	8.1	7.9	8.2	8.4	9.0	8.1
WF9	8.0	<u>6.5/</u>	8.1	8.8	8.5	7.9	8.4	8.8	8.8	8.2
M14	8.0	8.1	<u>5.0/</u>	7.6	7.8	7.5	8.2	7.8	8.5	8.0
W22	8.0	8.8	7.6	<u>5.2/</u>	8.1	8.0	8.6	8.2	8.6	8.5
Oh28	8.1	8.5	7.8	<u>8.1</u>	<u>5.5/</u>	8.0	8.2	8.0	9.0	8.0
W32	7.9	7.9	7.5	8.0	<u>8.0</u>	<u>5.4/</u>	8.2	8.0	8.8	7.8
Oh51A	8.2	8.4	8.2	8.6	8.2	<u>8.2</u>	<u>5.4/</u>	8.1	8.6	8.6
I205	8.4	8.8	7.8	8.2	8.0	8.0	<u>8.1</u>	<u>6.5/</u>	8.4	8.1
I224	9.0	8.8	8.5	8.6	9.0	8.8	8.6	<u>8.4</u>	<u>7.0/</u>	8.9
A	8.1	8.2	8.0	8.5	8.0	7.8	8.6	8.1	<u>8.9</u>	<u>5.6/</u>
Mean	8.2	8.4	7.9	8.3	8.2	8.0	8.3	8.2	8.7	8.2
Ear Height, Inches										
W8	<u>26/</u>	36	35	39	37	38	40	40	40	38
WF9	36	<u>26/</u>	30	35	33	34	34	39	40	39
M14	35	30	<u>19/</u>	29	30	29	35	31	36	35
W22	39	35	29	<u>19/</u>	34	38	37	35	39	40
Oh28	37	33	30	<u>34</u>	<u>22/</u>	36	34	36	39	36
W32	38	34	29	38	<u>36</u>	<u>25/</u>	39	40	46	37
Oh51A	40	34	35	37	34	39	<u>20/</u>	37	38	40
I205	40	39	31	35	36	40	<u>37</u>	<u>26/</u>	42	40
I224	40	40	36	39	39	46	38	<u>42</u>	<u>29/</u>	44
A	38	39	35	40	36	37	40	40	<u>44</u>	<u>23/</u>
Mean	38	36	32	36	35	37	37	38	40	39
Suckers per Hundred Plants										
W8	<u>3/</u>	12	12	11	18	12	7	7	14	8
WF9	12	<u>7/</u>	31	17	16	17	15	16	14	19
M14	12	31	<u>2/</u>	24	18	11	11	16	16	16
W22	11	17	<u>24</u>	<u>4/</u>	32	12	27	20	30	13
Oh28	18	16	18	<u>32</u>	<u>5/</u>	15	32	21	26	22
W32	12	17	11	12	<u>15</u>	<u>3/</u>	10	10	16	4
Oh51A	7	15	11	27	32	10	<u>4/</u>	12	25	12
I205	7	16	16	20	21	10	<u>12</u>	<u>5/</u>	9	8
I224	14	14	16	30	26	16	25	<u>9</u>	<u>4/</u>	14
A	8	19	16	13	22	4	12	8	<u>14</u>	<u>3/</u>
Mean	11.2	17.4	17.2	20.7	22.2	11.9	16.8	13.2	18.2	12.9

Table 2.--MIDSEASON YELLOW INBRED LINES AND SINGLE CROSSES: Urbana, 1947
(Means of four replications)

Parent lines	Hy	WF9	38-11	L317	B10	R61	07A	W86	H9	H10
Acre Yield, Bushels										
Hy	<u>34.5</u> /*	60.2	69.0	59.5	63.5	62.3	59.4	52.2	47.1	79.3
WF9	60.2	<u>22.2</u> /	71.0	64.5	66.6	64.3	60.3	63.5	57.1	69.4
38-11	69.0	71.0	<u>25.2</u> /	68.7	69.3	76.4	72.1	63.2	55.3	68.7
L317	59.5	64.5	68.7	<u>8.4</u> /	64.2	<u>36.8</u> **	63.3	62.0	62.1	68.1
B10	63.5	66.6	69.3	64.2	<u>14.1</u> /	72.6	75.9	--	60.6	80.2
R61	62.3	64.6	76.4	<u>36.8</u> **	72.6	<u>25.9</u> /	63.2	64.1	53.6	69.4
07A	59.4	60.3	72.1	<u>63.3</u>	75.9	<u>63.2</u>	<u>19.6</u> /	66.7	45.7	70.5
W86	52.2	63.5	63.2	62.0	--	64.1	<u>66.7</u>	<u>8.2</u> /	46.8	71.9
H9	47.1	57.1	55.3	62.1	60.6	53.6	45.7	<u>46.8</u>	<u>5.1</u> /	69.8
H10	79.3	69.4	68.7	68.1	80.2	69.4	70.5	71.9	<u>69.8</u>	<u>13.6</u> /
Mean	61.4	64.1	68.2	64.0	69.1	65.7	64.1	61.3	55.3	71.9
*Yield of inbred line Hy. Figures thus set off in this and similar tables pertain to the performance of the respective inbred lines themselves.										
**Not included in mean because L317 and R61 are related. A difference of less than 9.0 bushels between any two single-cross yields is not significant.										
Days to Half-Silk										
Hy	<u>70</u> /	64	67	67	68	66	67	64	65	65
WF9	64	<u>71</u> /	65	70	66	65	66	66	64	67
38-11	67	65	<u>74</u> /	67	69	66	70	66	64	69
L317	67	70	67	<u>76</u> /	69	<u>70</u> /	70	65	67	69
B10	68	66	69	69	<u>76</u> /	69	70	--	68	70
R61	66	65	66	<u>70</u> /	69	<u>73</u> /	67	64	66	65
07A	67	66	70	70	70	67	<u>76</u> /	66	67	69
W86	64	66	66	65	--	64	<u>66</u>	<u>72</u> /	63	65
H9	65	64	64	67	68	66	67	<u>63</u>	<u>73</u> /	69
H10	65	67	69	69	70	65	69	65	69	<u>77</u> /
Mean	66	66	67	68	69	66	68	65	66	68
Moisture in Grain at Harvest, Percent										
Hy	<u>25.4</u> /	24.6	25.3	32.0	26.7	28.4	31.6	29.2	28.7	30.7
WF9	<u>24.6</u>	<u>29.8</u> /	23.8	32.4	27.3	27.3	30.4	29.2	28.6	23.4
38-11	25.3	23.8	<u>24.3</u> /	25.4	27.0	25.6	31.6	21.4	28.4	27.2
L317	32.0	32.4	25.4	<u>32.9</u> /	26.2	<u>32.2</u> /	35.1	24.5	33.1	31.5
B10	26.7	27.3	27.0	26.2	<u>38.8</u> /	29.2	33.8	--	32.4	26.8
R61	28.4	27.3	25.6	<u>32.2</u> /	29.2	<u>33.7</u> /	34.3	24.9	31.2	27.4
07A	31.6	30.4	31.6	35.1	33.8	34.3	<u>39.9</u> /	26.0	36.9	30.1
W86	29.2	29.2	21.4	24.5	--	24.9	26.0	<u>20.9</u> /	25.4	21.8
H9	28.7	28.6	28.4	33.1	32.4	31.2	36.9	25.4	<u>40.5</u> /	33.8
H10	30.7	23.4	27.2	31.5	26.8	27.4	30.1	21.8	<u>33.8</u>	<u>29.3</u> /
Mean	28.6	27.4	26.2	30.0	28.7	28.5	32.2	25.3	30.9	28.1

Table 2 (cont.)

Parent lines	Hy	WF9	38-11	L317	B10	R61	O7A	W86	H9	H10
Shelling Percentage										
Hy	<u>76.6/</u>	79.8	78.6	78.6	76.3	81.0	76.7	80.4	74.8	82.8
WF9	79.8	<u>69.7/</u>	74.3	79.2	74.4	77.8	76.7	75.6	75.1	79.5
38-11	78.6	<u>74.3</u>	<u>66.5/</u>	77.4	73.2	78.4	75.8	76.8	74.4	78.1
L317	78.6	79.2	<u>77.4</u>	<u>49.2/</u>	73.0	<u>73.4/</u>	78.3	78.0	76.0	80.5
B10	76.3	74.4	73.2	<u>73.0</u>	<u>60.0/</u>	<u>75.4</u>	76.8	--	72.8	79.1
R61	81.0	77.8	78.4	<u>73.4/</u>	<u>75.4</u>	<u>70.6/</u>	77.3	78.8	79.0	80.0
O7A	76.7	76.7	75.8	<u>78.3</u>	76.8	<u>77.3</u>	<u>63.5/</u>	79.6	73.6	75.4
W86	80.4	75.6	76.8	78.0	--	78.8	<u>79.6</u>	<u>71.3/</u>	76.0	82.1
H9	74.8	75.1	74.4	76.0	72.8	79.0	73.6	<u>76.0</u>	<u>60.7/</u>	79.2
H10	82.8	79.5	78.1	80.5	79.1	80.0	75.4	82.1	<u>79.2</u>	<u>65.9/</u>
Mean	78.8	76.9	76.3	77.6	75.1	78.5	76.7	78.4	75.7	79.6
Erect Plants at Harvest, Percent										
Hy	<u>63/</u>	66	33	8	71	66	26	89	83	78
WF9	<u>66</u>	<u>45/</u>	96	26	75	20	22	96	69	89
38-11	33	96	<u>83/</u>	24	88	72	81	95	85	79
L317	8	26	<u>24</u>	<u>5/</u>	10	<u>10/</u>	0	16	3	33
B10	71	75	88	<u>10</u>	<u>45/</u>	<u>50</u>	58	--	72	78
R61	66	20	72	<u>10/</u>	<u>50</u>	<u>38/</u>	5	70	63	73
O7A	26	22	81	0	58	5	<u>3/</u>	61	47	86
W86	89	96	95	16	--	70	<u>61</u>	<u>86/</u>	97	91
H9	83	69	85	3	72	63	47	<u>97</u>	<u>65/</u>	66
H10	78	89	79	33	78	73	86	91	<u>66</u>	<u>40/</u>
Mean	58	62	73	15	63	52	43	77	65	75
Root-Lodged Plants at Harvest, Percent										
Hy	<u>7/</u>	16	40	92	22	31	73	5	15	20
WF9	<u>16</u>	<u>38/</u>	3	69	23	80	77	4	30	10
38-11	40	3	<u>10/</u>	53	8	22	17	3	5	16
L317	92	69	<u>53</u>	<u>91/</u>	71	<u>86/</u>	100	84	72	56
B10	22	23	8	<u>71</u>	<u>37/</u>	<u>46</u>	42	--	26	13
R61	31	80	22	<u>86/</u>	<u>46</u>	<u>33/</u>	79	27	33	25
O7A	73	77	17	100	42	<u>79</u>	<u>97/</u>	<u>33</u>	51	14
W86	5	4	3	84	--	27	<u>33</u>	<u>14/</u>	3	7
H9	15	30	5	72	26	33	51	3	<u>30/</u>	33
H10	20	10	16	56	13	25	14	7	<u>33</u>	<u>23/</u>
Mean	35	35	19	75	31	43	54	21	30	22

Table 2 (cont.)

Parent lines	Hy	WF9	38-11	L317	B10	R61	07A	W86	H9	H10
Percent Perfect Stand										
Hy	89/	98	95	88	97	90	94	90	84	94
WF9	98	94/	95	88	88	90	97	80	86	93
38-11	95	95	93/	92	93	95	91	99	92	96
L317	88	88	92	88/	85	94/	89	90	81	90
B10	97	88	93	85	85/	90	97	--	84	94
R61	90	90	95	94/	90	90/	95	80	81	71
07A	94	97	91	89	97	95	82/	99	95	92
W86	90	80	99	90	--	80	99	91/	83	96
H9	84	86	92	81	84	81	95	83	85/	72
H10	94	93	96	90	94	71	92	96	72	78/
Mean	92	91	94	88	91	86	94	90	84	89
Plant Height, Feet										
Hy	5.9/	8.0	8.5	7.9	8.2	8.1	8.1	8.5	8.5	8.9
WF9	8.0	5.4/	7.8	7.9	7.9	7.6	8.1	7.8	7.8	7.9
38-11	8.5	7.8	6.4/	8.6	8.0	8.0	8.1	8.0	8.0	8.1
L317	7.9	7.9	8.6	5.8/	8.2	7.2/	7.9	8.0	8.1	8.5
B10	8.2	7.9	8.0	8.2	5.6/	7.9	8.0	--	7.6	8.2
R61	8.1	7.6	8.0	7.2/	7.9	5.6/	7.5	8.0	7.9	8.0
07A	8.1	8.1	8.1	7.9	8.0	7.5	5.4/	7.8	7.5	7.9
W86	8.5	7.8	8.0	8.0	--	8.0	7.8	5.4/	8.0	8.3
H9	8.5	7.8	8.0	8.1	7.6	7.9	7.5	8.0	4.8/	8.0
H10	8.9	7.9	8.1	8.5	8.2	8.0	7.9	8.3	8.0	6.2/
Mean	8.3	7.9	8.1	8.1	8.0	7.9	7.9	8.0	7.9	8.2
Ear Height, Inches										
Hy	24/	32	40	40	38	38	40	38	36	41
WF9	32	30/	34	40	32	34	35	31	29	38
38-11	40	34	26/	44	38	38	38	32	34	41
L317	40	40	44	34/	43	38/	44	36	40	42
B10	38	32	38	43	21/	38	37	--	36	40
R61	38	34	38	38/	38	27/	39	35	36	39
07A	40	35	38	44	37	39	25/	33	37	36
W86	38	31	32	36	--	35	33	20/	32	41
H9	36	29	34	40	36	36	37	32	21/	37
H10	41	38	41	42	40	39	36	41	37	29/
Mean	38	34	38	41	38	37	38	35	35	39

Table 2 (cont.)

Parent lines	Hy	WF9	38-11	L317	B10	R61	07A	W86	H9	H10
Ears per Hundredweight, Number										
Hy	<u>377/</u>	214	170	151	160	160	168	194	208	161
WF9	214	<u>420/</u>	180	189	160	162	172	170	195	188
38-11	170	180	<u>426/</u>	178	169	167	146	230	178	194
L317	151	189	178	<u>634/</u>	176	<u>253/</u>	144	191	144	185
B10	160	160	169	176	<u>527/</u>	148	154	--	160	174
R61	160	162	167	<u>253/</u>	148	<u>363/</u>	160	174	134	161
07A	168	172	146	144	154	160	<u>340/</u>	190	160	176
W86	194	170	230	191	--	174	190	<u>578/</u>	193	208
H9	208	195	178	144	160	134	160	193	<u>500/</u>	146
H10	161	188	194	185	174	161	176	208	146	<u>583/</u>
Mean	176	181	179	170	163	158	163	194	169	177
Smutted Plants, Percent										
Hy	<u>0/</u>	0	1	0	1	0	1	0	0	0
WF9	0	<u>0/</u>	2	0	0	0	0	0	5	1
38-11	1	2	<u>1/</u>	1	0	0	0	1	1	1
L317	0	0	1	<u>3/</u>	1	<u>0/</u>	0	0	2	0
B10	1	0	0	1	<u>0/</u>	0	0	--	1	1
R61	0	0	0	<u>0/</u>	0	<u>0/</u>	0	0	0	0
07A	1	0	0	0	0	0	<u>0/</u>	0	0	0
W86	0	0	1	0	--	0	0	<u>0/</u>	1	1
H9	0	5	1	2	1	0	0	1	<u>6/</u>	1
H10	0	1	1	0	1	0	0	1	1	<u>0/</u>
Mean	.3	.9	.8	.5	.5	0	.1	.4	1.2	.6
Suckers per Hundred Plants										
Hy	<u>0/</u>	2	2	5	0	3	6	3	2	0
WF9	2	<u>2/</u>	4	0	2	0	3	5	4	1
38-11	2	4	<u>1/</u>	1	2	1	3	1	2	1
L317	5	0	1	<u>2/</u>	6	<u>6/</u>	4	5	5	3
B10	0	2	2	6	<u>4/</u>	2	2	--	6	1
R61	3	0	1	<u>6/</u>	2	<u>0/</u>	0	7	3	5
07A	6	3	3	4	2	0	<u>2/</u>	3	4	1
W86	3	5	1	5	--	7	3	<u>3/</u>	2	2
H9	2	4	2	5	6	3	4	2	<u>4/</u>	0
H10	0	1	1	3	1	5	1	2	0	<u>6/</u>
Mean	2.6	2.3	1.9	3.6	2.6	2.6	2.9	3.5	3.1	1.6

Table 3.--LATE YELLOW INBRED LINES AND SINGLE CROSSES: - Urbana, 1947
(Means of four replications)

Parent lines	K4	Mo4	T8	CI.27	Ky36-11	38-11	R40	K155	K201C	Kys
Acre Yield, Bushels										
K4	<u>27.8</u> /*	94.4	89.3	74.1	91.4	83.3	56.8	76.8	101.6	82.5
Mo4	94.4	<u>22.6</u> /	85.1	99.0	105.9	101.9	92.8	87.4	91.9	82.8
T8	89.3	<u>85.1</u>	<u>37.8</u> /	79.9	83.3	97.1	66.4	88.6	82.7	85.7
CI.27	74.1	99.0	79.9	<u>11.8</u> /	84.0	80.6	74.5	70.1	83.7	64.8
Ky36-11	91.4	105.9	83.3	<u>84.0</u>	<u>4.2</u> /	97.1	92.7	92.9	94.2	87.9
38-11	83.3	101.9	97.1	80.6	97.1	<u>34.6</u> /	54.2	84.2	91.9	88.9
R40	56.8	92.8	66.4	74.5	92.7	54.2	<u>19.6</u> /	52.2	80.1	58.8
K155	76.8	87.4	88.6	70.1	92.9	84.2	<u>52.2</u>	<u>11.2</u> /	90.9	86.2
K201C	101.6	91.9	82.7	83.7	94.2	91.9	80.1	90.9	<u>25.1</u> /	94.4
Kys	82.5	82.8	85.7	64.8	87.9	88.9	58.8	86.2	94.4	<u>25.5</u> /
Mean	83.4	93.5	84.2	79.0	92.2	86.6	69.8	81.0	90.2	81.3

*Yield of inbred line K4. Figures thus set off in this and similar tables pertain to the performance of the respective inbred lines themselves.

A difference of less than 13.9 bushels between any two single-cross yields is not significant.

Days to Half-Silk										
K4	<u>95</u> /	88	87	85	88	85	87	89	87	90
Mo4	88	<u>95</u> /	85	83	86	84	87	85	88	88
T8	87	<u>85</u>	<u>91</u> /	83	85	83	85	85	85	87
CI.27	85	83	83	<u>92</u> /	85	83	85	84	85	85
Ky36-11	88	86	85	85	<u>93</u> /	87	87	87	87	86
38-11	85	84	83	83	87	<u>90</u> /	85	84	84	87
R40	87	87	85	85	87	<u>85</u>	<u>92</u> /	88	88	89
K155	89	85	85	84	87	84	88	<u>93</u> /	85	87
K201C	87	88	85	85	87	84	88	85	<u>92</u> /	89
Kys	90	88	87	85	86	87	89	87	<u>89</u>	<u>92</u> /
Mean	87	86	85	84	86	85	87	86	86	88

Moisture in Grain at Harvest, Percent										
K4	<u>28.2</u> /	28.0	26.6	24.9	30.6	20.8	30.0	24.2	27.3	27.8
Mo4	28.0	<u>38.8</u> /	27.1	25.0	28.2	23.0	27.0	24.9	30.1	28.1
T8	26.6	<u>27.1</u>	<u>23.9</u> /	24.4	26.0	21.6	28.2	23.6	25.2	25.3
CI.27	24.9	25.0	24.4	<u>28.0</u> /	24.0	19.0	29.2	22.8	27.2	28.9
Ky36-11	30.6	28.2	26.0	24.0	<u>29.5</u> /	24.9	24.6	24.2	28.3	27.4
38-11	20.8	23.0	21.6	19.0	24.9	<u>18.9</u> /	21.6	20.0	22.8	20.2
R40	30.0	27.0	28.2	29.2	24.6	21.6	<u>27.7</u> /	24.4	28.9	27.4
K155	24.2	24.9	23.6	22.8	24.2	20.0	<u>24.4</u>	<u>25.4</u> /	24.7	21.6
K201C	27.3	30.1	25.2	27.2	28.3	22.8	28.9	24.7	<u>42.0</u> /	24.6
Kys	27.8	28.1	25.3	28.9	27.4	20.2	27.4	21.6	<u>24.6</u>	<u>25.2</u> /
Mean	26.7	26.8	25.3	25.0	26.5	21.5	26.8	23.4	26.6	25.7

Table 3 (cont.)

Parent lines	K4	Mo4	T8	CI.27	Ky36-11	38-11	R40	K155	K201C	Kys
Shelling Percentage										
K4	<u>71.8/</u>	80.2	80.8	81.6	80.8	80.4	77.9	76.7	81.1	78.5
Mo4	80.2	<u>70.7/</u>	80.6	83.6	82.0	80.1	80.7	81.4	81.6	79.8
T8	80.8	80.6	<u>77.9/</u>	79.4	78.0	78.8	77.2	79.4	77.8	81.2
CI.27	81.6	83.6	79.4	<u>55.6/</u>	81.8	83.2	77.0	82.5	81.6	82.0
Ky36-11	80.8	82.0	78.0	81.8	<u>52.9/</u>	78.4	78.5	80.8	78.9	79.2
38-11	80.4	80.1	78.8	83.2	<u>78.4</u>	<u>77.9/</u>	76.4	80.5	76.8	81.0
R40	77.9	80.7	77.2	77.0	78.5	<u>76.4</u>	<u>68.9/</u>	76.0	77.7	75.3
K155	76.7	81.4	79.4	82.5	80.8	80.5	76.0	<u>67.1/</u>	79.6	80.0
K201C	81.1	81.6	77.8	81.6	78.9	76.8	77.7	<u>79.6</u>	<u>72.0/</u>	79.9
Kys	78.5	79.8	81.2	82.0	79.2	81.0	75.3	80.0	<u>79.9</u>	<u>69.3/</u>
Mean	79.8	81.1	79.2	81.4	79.8	79.5	77.4	79.7	79.4	79.7
Erect Plants at Harvest, Percent										
K4	<u>47/</u>	36	69	14	75	78	95	94	79	48
Mo4	<u>36</u>	<u>47/</u>	45	34	79	78	61	25	50	20
T8	69	<u>45</u>	<u>46/</u>	30	95	93	82	76	74	61
CI.27	14	34	30	<u>57/</u>	68	53	59	13	43	17
Ky36-11	75	79	95	68	<u>96/</u>	84	97	80	96	71
38-11	78	78	93	53	<u>84</u>	<u>98/</u>	98	96	92	73
R40	95	61	82	59	97	<u>98</u>	<u>99/</u>	80	97	86
K155	94	25	76	13	80	96	80	<u>91/</u>	70	70
K201C	79	50	74	43	96	92	97	70	<u>89/</u>	79
Kys	48	20	61	17	71	73	86	70	<u>79</u>	<u>63/</u>
Mean	65	48	69	37	83	83	84	67	76	58
Root-Lodged Plants at Harvest, Percent										
K4	<u>6/</u>	46	21	27	8	4	3	4	16	20
Mo4	<u>46</u>	<u>51/</u>	53	38	12	5	23	53	40	32
T8	21	53	<u>21/</u>	45	5	5	18	19	22	33
CI.27	27	38	<u>45</u>	<u>42/</u>	1	8	19	22	36	2
Ky36-11	8	12	5	<u>1</u>	<u>0/</u>	0	0	1	2	0
38-11	4	5	5	8	<u>0</u>	<u>0/</u>	0	3	3	0
R40	3	23	18	19	0	<u>0</u>	<u>0/</u>	8	2	0
K155	4	53	19	22	1	3	8	<u>7/</u>	28	9
K201C	16	40	22	36	2	3	2	<u>28</u>	<u>11/</u>	5
Kys	20	32	33	2	0	0	0	9	5	<u>0/</u>
Mean	17	34	25	22	3	3	8	16	17	11

Table 3 (cont.)

Parent lines	K4	Mo4	T8	CI.27	Ky36-11	38-11	R40	K155	K201C	Kys
Percent Perfect Stand										
K4	67/	97	99	97	97	92	99	95	95	100
Mo4	97	45/	98	99	94	97	98	97	94	99
T8	99	98	23/	97	96	100	98	98	93	95
CI.27	97	99	97	97/	81	98	97	96	92	96
Ky36-11	97	94	96	81	38/	95	96	88	88	96
38-11	92	97	100	98	95	29/	100	89	96	96
R40	99	98	98	97	96	100	27/	97	96	98
K155	95	97	98	96	88	89	97	72/	97	95
K201C	95	94	93	92	88	96	96	97	63/	91
Kys	100	99	95	96	96	96	98	95	91	81/
Mean	97	97	97	95	92	96	98	95	94	96
Plant Height, Feet										
K4	6.3/	9.3	8.9	9.0	9.1	8.8	8.6	9.0	8.9	9.1
Mo4	9.3	6.3/	9.1	9.0	9.4	8.5	8.9	9.0	8.5	9.2
T8	8.9	9.1	6.2/	8.8	9.4	8.8	8.4	8.8	8.5	8.9
CI.27	9.0	9.0	8.8	6.5/	8.9	9.1	8.6	8.5	8.6	9.0
Ky36-11	9.1	9.4	9.4	8.9	4.3/	9.0	8.9	9.1	9.0	9.0
38-11	8.8	8.5	8.8	9.1	9.0	6.0/	8.0	8.4	8.6	8.9
R40	8.6	8.9	8.4	8.6	8.9	8.0	5.5/	8.5	8.4	7.8
K155	9.0	9.0	8.8	8.5	9.1	8.4	8.5	6.3/	8.8	9.0
K201C	8.9	8.5	8.5	8.6	9.0	8.6	8.4	8.8	6.2/	8.8
Kys	9.1	9.2	8.9	9.0	9.0	8.9	7.8	9.0	8.8	5.8/
Mean	9.0	9.0	8.8	8.8	9.1	8.7	8.5	8.8	8.7	8.9
Ear Height, Inches										
K4	30/	52	51	49	50	45	42	49	46	46
Mo4	52	31/	50	46	50	44	44	48	47	48
T8	51	50	31/	46	50	47	42	49	47	48
CI.27	49	46	46	27/	48	48	42	45	48	48
Ky36-11	50	50	50	48	19/	44	44	51	46	48
38-11	45	44	47	48	44	28/	40	42	46	46
R40	42	44	42	42	44	40	21/	44	46	37
K155	49	48	49	45	51	42	44	27/	46	49
K201C	46	47	47	48	46	46	46	46	26/	50
Kys	46	48	48	48	48	46	37	49	50	29/
Mean	48	48	48	47	48	45	42	47	47	47

Table 3 (cont.)

Parent lines	K4	Mo4	T8	CI.27	Ky36-11	38-11	R40	K155	K201C	Kys
Ears per Hundredweight, Number										
K4	504/	142	156	194	142	167	198	174	138	155
Mo4	142	254/	159	152	125	140	139	151	132	165
T8	156	159	327/	173	159	157	177	159	146	164
CI.27	194	152	173	735/	147	201	170	208	159	209
Ky36-11	142	125	159	147	778/	144	144	140	127	154
38-11	167	140	157	201	144	416/	228	173	148	174
R40	198	139	177	170	144	228	456/	200	143	216
K155	174	151	159	208	140	173	200	598/	140	168
K201C	138	132	146	159	127	148	143	140	276/	140
Kys	155	165	164	209	154	174	216	168	140	420/
Mean	163	145	161	179	142	170	179	168	141	172
Ears per Plant, Number										
K4	1.42/	.95	.95	.96	.97	.95	.83	.94	1.01	.92
Mo4	.95	.88/	.95	.97	.96	.97	.90	.97	.92	.95
T8	.95	.95	.90/	.96	.96	.99	.86	.96	.90	.99
CI.27	.96	.97	.96	.90/	.93	.97	.96	.96	.97	.97
Ky36-11	.97	.96	.96	.93	.76/	.99	.94	.96	.96	.97
38-11	.95	.97	.99	.97	.99	.93/	.85	1.01	.96	.99
R40	.83	.90	.86	.96	.94	.85	.74/	.75	.87	.94
K155	.94	.97	.96	.96	.96	1.01	.75	.71/	.88	.98
K201C	1.01	.92	.90	.97	.96	.96	.87	.88	.98/	.97
Kys	.92	.95	.99	.97	.97	.99	.94	.98	.97	1.00/
Mean	.94	.95	.95	.96	.96	.96	.88	.93	.94	.96
Smutted Plants, Percent										
K4	0/	0	0	3	0	1	0	1	0	0
Mo4	0	2/	1	2	4	2	3	1	1	0
T8	0	1	0/	1	1	2	0	1	1	0
CI.27	3	2	1	1/	0	2	4	2	1	1
Ky36-11	0	4	1	0	31/	1	3	2	1	1
38-11	1	2	2	2	1	1/	4	4	2	0
R40	0	3	0	4	3	4	9/	4	4	1
K155	1	1	1	2	2	4	4	4/	4	0
K201C	0	1	1	1	1	2	4	4	2/	2
Kys	0	0	0	1	1	0	1	0	2	0/
Mean	.6	1.6	.8	1.8	1.4	2.0	2.6	2.1	1.8	.6

Table 4.--LATE YELLOW SINGLE CROSSES: Brownstown, 1947
(Means of four replications)

Parent lines	K4	Mo4	T8	CI.27	Ky36-11	38-11	R40	K155	K201C	Kys
Acre Yield, Bushels										
K4	--	78.7	62.2	72.5	64.8	70.2	59.9	58.7	80.8	61.8
Mo4	78.7	--	56.8	74.2	82.3	75.7	71.8	66.2	71.2	62.3
T8	62.2	56.8	--	63.9	64.1	67.5	64.7	68.2	68.2	71.9
CI.27	72.5	74.2	63.9	--	75.4	63.0	65.0	69.8	64.8	74.7
Ky36-11	64.8	82.3	64.1	75.4	--	--	--	72.2	--	66.7
38-11	70.2	75.7	67.5	63.0	--	--	59.4	66.0	67.3	67.7
R40	59.9	71.8	64.7	65.0	--	59.4	--	74.1	67.8	31.7
K155	58.7	66.2	68.2	69.8	72.2	66.0	74.1	--	72.2	68.3
K201C	80.8	71.2	68.2	64.8	--	67.3	67.8	72.2	--	--
Kys	61.8	62.3	71.9	74.7	66.7	67.7	31.7	68.3	--	--
Mean	67.7	71.0	65.3	69.2	70.9	67.1	61.8	68.4	70.3	63.1

A difference of less than 7.8 bushels between any two single-cross yields is not significant.

Moisture in Grain at Harvest, Percent										
K4	--	28.5	26.4	26.8	34.6	22.0	32.3	26.6	26.1	28.5
Mo4	28.5	--	29.7	30.2	30.6	24.5	33.4	29.2	29.4	32.0
T8	26.4	29.7	--	25.1	29.0	22.7	30.4	23.0	25.4	25.7
CI.27	26.8	30.2	25.1	--	29.2	22.8	35.0	24.2	26.8	26.0
Ky36-11	34.6	30.6	29.0	29.2	--	--	--	25.8	--	33.8
38-11	22.0	24.5	22.7	22.8	--	--	22.0	21.2	22.5	23.0
R40	32.3	33.4	30.4	35.0	--	22.0	--	26.3	32.6	39.8
K155	26.6	29.2	23.0	24.2	25.8	21.2	26.3	--	26.9	30.2
K201C	26.1	29.4	25.4	26.8	--	22.5	32.6	26.9	--	--
Kys	28.5	32.0	25.7	26.0	33.8	23.0	39.8	30.2	--	--
Mean	28.0	29.7	26.4	27.3	30.5	22.6	31.5	25.9	27.1	29.9

Shelling Percentage										
K4	--	78.8	79.6	81.2	80.5	80.0	75.5	76.1	81.2	75.9
Mo4	78.8	--	77.5	79.3	77.0	77.1	76.5	74.1	77.4	79.7
T8	79.6	77.5	--	76.1	78.9	78.5	76.6	77.6	80.1	80.7
CI.27	81.2	79.3	76.1	--	81.6	78.8	75.6	77.9	80.9	79.7
Ky36-11	80.5	77.0	78.9	81.6	--	--	--	77.9	--	75.8
38-11	80.0	77.1	78.5	78.8	--	--	73.9	75.7	75.4	79.0
R40	75.5	76.5	76.6	75.6	--	73.9	--	74.7	78.3	65.6
K155	76.1	74.1	77.6	77.9	77.9	75.7	74.7	--	79.5	78.6
K201C	81.2	77.4	80.1	80.9	--	75.4	78.3	79.5	--	--
Kys	75.9	79.7	80.7	79.7	75.8	79.0	65.6	78.6	--	--
Mean	78.7	77.5	78.4	79.0	78.6	77.3	74.6	76.9	79.0	76.9

Table 4 (cont.)

Plant lines	K4	Mo4	T8	CI.27	Ky36-11	38-11	R40	K155	K201C	Kys
Erect Plants at Harvest, Percent										
K4	--	79	69	80	100	92	99	100	89	92
Mo4	79	--	55	58	100	94	90	46	92	53
T8	69	55	--	71	99	95	71	89	87	86
CI.27	80	58	71	--	98	96	94	73	71	61
Ky36-11	100	100	99	98	--	--	--	100	--	92
38-11	92	94	95	96	--	--	100	97	100	97
R40	99	90	71	94	--	100	--	100	96	92
K155	100	46	89	73	100	97	100	--	95	100
K201C	89	92	87	71	--	100	96	95	--	--
Kys	92	53	86	61	92	97	92	100	--	--
Mean	89	74	80	78	98	96	93	89	90	84
Root-Lodged Plants at Harvest, Percent										
K4	--	16	28	19	0	0	0	0	10	3
Mo4	16	--	32	37	0	3	4	40	8	34
T8	28	32	--	26	0	5	0	5	4	3
CI.27	19	37	26	--	1	3	0	27	25	35
Ky36-11	0	0	0	1	--	--	--	0	--	0
38-11	0	3	5	3	--	--	0	0	0	0
R40	0	4	0	0	--	0	--	0	0	0
K155	0	40	5	27	0	0	0	--	5	0
K201C	10	8	4	25	--	0	0	5	--	--
Kys	3	34	3	35	0	0	0	0	--	--
Mean	8	19	11	19	0	1	1	9	7	9
Percent Perfect Stand										
K4	--	99	99	98	92	89	100	94	100	92
Mo4	99	--	98	98	98	99	98	88	96	96
T8	99	98	--	96	100	101	99	99	99	99
CI.27	98	98	96	--	95	96	90	96	96	98
Ky36-11	92	98	100	95	--	--	--	100	--	100
38-11	89	99	101	96	--	--	100	99	94	94
R40	100	98	99	90	--	100	--	99	99	98
K155	94	88	99	96	100	99	99	--	96	99
K201C	100	96	99	96	--	94	99	96	--	--
Kys	92	96	99	98	100	94	98	99	--	--
Mean	96	97	99	96	98	97	98	97	97	97

Table 4 (cont.)

Parent lines	K4	Mo4	T8	CI.27	Ky36-11	38-11	R40	K155	K201C	Kys
Plant Height, Feet										
K4	--	9.5	8.4	9.1	9.2	9.0	8.8	9.0	8.9	9.5
Mo4	9.5	--	8.4	8.9	9.4	8.6	8.6	8.9	8.2	9.1
T8	8.4	8.4	--	8.8	8.2	8.1	8.0	8.4	7.9	8.8
CI.27	9.1	8.9	8.8	--	9.0	8.8	8.5	8.6	8.8	9.0
Ky36-11	9.2	9.4	8.2	9.0	--	--	--	9.0	--	8.9
38-11	9.0	8.6	8.1	8.8	--	--	8.0	8.2	8.0	8.9
R40	8.8	8.6	8.0	8.5	--	8.0	--	8.8	8.1	7.1
K155	9.0	8.9	8.4	8.6	9.0	8.2	8.8	--	8.9	9.1
K201C	8.9	8.2	7.9	8.8	--	8.0	8.1	8.9	--	--
Kys	9.5	9.1	8.8	9.0	8.9	8.9	7.1	9.1	--	--
Mean	9.0	8.8	8.3	8.8	9.0	8.5	8.2	8.8	8.4	8.8
Ear Height, Inches										
K4	--	47	44	44	44	43	41	43	43	47
Mo4	47	--	44	40	44	42	41	41	42	46
T8	44	44	--	42	44	41	40	43	42	48
CI.27	44	40	42	--	43	44	41	39	40	46
Ky36-11	44	44	44	43	--	--	--	43	--	46
38-11	43	42	41	44	--	--	38	38	40	44
R40	41	41	40	41	--	38	--	44	39	38
K155	43	41	43	39	43	38	44	--	44	47
K201C	43	42	42	40	--	40	39	44	--	--
Kys	47	46	48	46	46	44	38	47	--	--
Mean	44	43	43	42	44	41	40	42	41	45
Suckers, Percent										
K4	--	4	5	5	0	7	10	8	5	7
Mo4	4	--	5	3	5	5	5	13	5	1
T8	5	5	--	0	2	5	0	3	6	4
CI.27	5	3	0	--	4	3	0	6	10	3
Ky36-11	0	5	2	4	--	--	--	5	--	2
38-11	7	5	5	3	--	--	2	5	7	5
R40	10	5	0	0	--	2	--	1	1	1
K155	8	13	3	6	5	5	1	--	10	3
K201C	5	5	6	10	--	7	1	10	--	--
Kys	7	1	4	3	2	5	1	3	--	--
Mean	5.7	5.1	3.3	3.8	3.0	4.9	2.5	6.0	6.3	3.3

Table 5.--LATE WHITE INBRED LINES AND SINGLE CROSSES: Urbana (Inbreds) and Brownstown (Single Crosses) 1947 (Means of four replications)

Parent lines	R30	H21	33-16	K63	K64	Ky27	Ky39	Ky49	Mo2RF	CI.61
Acre Yield, Bushels										
R30	<u>14.0</u> /*	73.2	68.2	68.0	69.5	65.2	71.6	72.0	68.9	64.0
H21	73.2	<u>6.5</u>	68.4	70.1	81.0	78.5	72.5	76.6	78.3	70.8
33-16	68.2	68.4	<u>16.4</u>	68.4	68.4	65.5	65.1	61.2	35.9	54.9
K63	68.0	70.1	68.4	<u>9.8</u>	68.1	76.5	64.6	69.1	74.2	64.3
K64	69.5	81.0	68.4	68.1	<u>11.5</u>	73.6	67.0	71.8	68.8	68.2
Ky27	65.2	78.5	65.5	76.5	<u>73.6</u>	<u>29.1</u>	71.7	72.4	71.0	76.7
Ky39	71.6	72.5	65.1	64.6	67.0	<u>71.7</u>	<u>16.7</u>	70.7	68.1	67.4
Ky49	72.0	76.6	61.2	69.1	71.8	72.4	<u>70.7</u>	<u>6.7</u>	70.7	64.8
Mo2RF	68.9	78.3	35.9	74.2	68.8	71.0	68.1	<u>70.7</u>	<u>31.5</u>	69.0
CI.61	64.0	70.8	54.9	64.3	68.2	76.7	67.4	64.8	69.0	<u>1.8</u>
Mean	69.0	74.4	61.8	69.3	70.7	72.3	68.7	69.9	67.2	66.7

*Yield of inbred line R30. Figures thus set off in this and similar tables pertain to the performance of the respective inbred lines themselves. Inbred lines tested at Urbana; single crosses tested at Brownstown.

A difference of less than 7.8 bushels between any two single-cross yields is not significant.

Moisture in Grain at Harvest, Percent										
R30	<u>45.0</u>	30.2	26.4	25.2	23.9	23.5	22.7	29.4	26.3	27.2
H21	30.2	<u>38.6</u>	23.9	28.2	23.2	25.8	20.6	26.8	23.6	23.9
33-16	26.4	23.9	<u>26.9</u>	23.2	24.4	20.6	23.5	21.1	19.4	19.9
K63	25.2	28.2	23.2	<u>41.0</u>	25.4	23.5	26.9	26.1	22.7	26.3
K64	23.9	23.2	24.4	25.4	<u>44.0</u>	22.0	23.8	26.9	26.8	24.6
Ky27	23.5	25.8	20.6	23.5	22.0	<u>32.1</u>	22.7	21.9	22.5	22.8
Ky39	22.7	20.6	23.5	26.9	23.8	22.7	<u>34.4</u>	24.8	22.7	20.7
Ky49	29.4	26.8	21.1	26.1	26.9	21.9	24.8	<u>41.0</u>	22.3	24.8
Mo2RF	26.3	23.6	19.4	22.7	26.8	22.5	22.7	22.3	<u>33.2</u>	22.7
CI.61	27.2	23.9	19.9	26.3	24.6	22.8	20.7	24.8	22.7	<u>42.0</u>
Mean	26.1	25.1	22.5	25.3	24.6	22.8	23.2	24.9	23.2	23.7

Shelling Percentage										
R30	<u>53.3</u>	82.0	81.4	70.4	79.4	83.2	79.6	77.0	78.3	76.8
H21	82.0	<u>68.7</u>	81.6	74.1	80.7	82.8	80.2	78.7	78.4	75.9
33-16	81.4	81.6	<u>67.8</u>	73.1	80.6	84.6	82.0	78.9	77.6	78.6
K63	70.4	74.1	73.1	<u>49.3</u>	73.3	74.4	71.4	69.4	72.7	69.8
K64	79.4	80.7	80.6	73.3	<u>61.0</u>	83.9	82.0	77.2	79.5	78.6
Ky27	83.2	82.8	84.6	74.4	<u>83.9</u>	<u>76.3</u>	85.9	79.6	80.6	81.4
Ky39	79.6	80.2	82.0	71.4	82.0	<u>85.9</u>	<u>63.8</u>	74.7	77.9	77.4
Ky49	77.0	78.7	78.9	69.4	77.2	79.6	74.7	<u>49.8</u>	77.0	74.6
Mo2RF	78.3	78.4	77.6	72.7	79.5	80.6	77.9	77.0	<u>66.1</u>	75.8
CI.61	76.8	75.9	78.6	65.8	78.6	81.4	77.4	74.6	75.8	<u>33.8</u>
Mean	78.7	79.4	79.8	71.6	79.5	81.8	79.0	76.3	77.5	76.1

Table 5 (cont.)

Parent lines	R30	H21	33-16	K63	K64	Ky27	Ky39	Ky49	Mo2RF	CI,61
Erect Plants at Harvest, Percent										
R30	<u>16/</u>	87	81	32	71	78	49	60	73	81
H21	<u>87</u>	<u>42/</u>	93	63	97	90	54	82	98	86
33-16	81	93	<u>46/</u>	67	94	77	82	78	89	89
K63	32	63	<u>67</u>	<u>34/</u>	76	64	42	48	73	52
K64	71	97	94	<u>76</u>	<u>83/</u>	96	53	72	91	95
Ky27	78	90	77	64	<u>96</u>	<u>2/</u>	43	63	81	96
Ky39	49	54	82	42	53	<u>43</u>	<u>1/</u>	34	64	51
Ky49	60	82	78	48	72	63	<u>34</u>	<u>0/</u>	44	93
Mo2RF	73	98	89	73	91	81	64	<u>44</u>	<u>20/</u>	84
CI,61	81	86	89	52	95	96	51	93	<u>84</u>	<u>48/</u>
Mean	68	83	83	57	83	76	52	64	77	81
Root-Lodged Plants at Harvest, Percent										
R30	<u>71/</u>	12	15	34	25	0	36	34	14	19
H21	<u>12</u>	<u>53/</u>	3	21	3	0	1	1	2	13
33-16	15	3	<u>48/</u>	14	2	3	8	0	3	10
K63	34	21	<u>14</u>	<u>57/</u>	21	6	38	29	10	44
K64	25	3	2	21	<u>21/</u>	4	47	26	8	5
Ky27	0	0	3	6	<u>4</u>	<u>42/</u>	15	4	3	4
Ky39	36	1	8	38	47	<u>15</u>	<u>88/</u>	34	35	46
Ky49	34	1	0	29	26	4	<u>34</u>	<u>98/</u>	22	5
Mo2RF	14	2	3	10	8	3	35	22	<u>75/</u>	15
CI,61	19	13	10	44	5	4	46	5	15	<u>51/</u>
Mean	21	6	6	24	16	4	29	17	12	18
Percent Perfect Stand										
R30	<u>91/</u>	96	100	96	96	100	98	99	95	98
H21	96	<u>55/</u>	98	101	96	99	100	98	102	96
33-16	100	98	<u>85/</u>	96	100	94	96	92	98	91
K63	96	101	96	<u>83/</u>	95	99	99	99	98	99
K64	96	96	100	95	<u>88/</u>	99	95	100	98	98
Ky27	100	99	94	99	99	<u>22/</u>	100	95	96	98
Ky39	98	100	96	99	95	100	<u>96/</u>	100	100	98
Ky49	99	98	92	99	100	95	100	<u>98/</u>	96	101
Mo2RF	95	102	98	98	98	96	100	96	<u>93/</u>	99
CI,61	98	96	91	99	98	98	98	101	99	<u>68/</u>
Mean	98	98	96	98	97	98	98	98	98	98

Table 5 (cont.)

Parent lines	R30	H21	33-61	K63	K64	Ky27	Ky39	Ky49	Mo2RF	CI.61
Plant Height, Feet										
R30	6.0/	8.0	7.5	7.5	8.1	7.4	8.8	8.2	7.9	8.5
H21	8.0	6.8/	8.2	8.5	9.0	8.5	9.0	8.8	8.6	8.8
33-16	7.5	8.2	6.8/	8.1	8.5	7.9	8.5	8.5	7.2	8.2
K63	7.5	8.5	8.1	7.0/	8.8	8.6	9.1	8.6	8.9	8.9
K64	8.1	9.0	8.5	8.8	6.0/	8.1	9.0	9.2	9.0	9.0
Ky27	7.4	8.5	7.9	8.6	8.1	6.3/	8.9	8.5	8.4	8.4
Ky39	8.8	9.0	8.5	9.1	9.0	8.9	6.8/	9.1	9.0	9.2
Ky49	8.2	8.8	8.5	8.6	9.2	8.5	9.1	7.0/	8.8	9.0
Mo2RF	7.9	8.6	7.2	8.9	9.0	8.4	9.0	8.8	7.0/	8.8
CI.61	8.5	8.8	8.2	8.9	9.0	8.4	9.2	9.0	8.8	6.7/
Mean	8.0	8.6	8.1	8.6	8.7	8.3	9.0	8.7	8.5	8.8
Ear Height, Inches										
R30	25/	39	36	42	42	34	46	41	42	41
H21	39	27/	39	43	46	42	46	39	42	42
33-16	36	39	35/	40	41	40	42	38	35	42
K63	42	43	40	35/	48	44	48	42	47	46
K64	42	46	41	48	24/	40	48	43	42	48
Ky27	34	42	40	44	40	26/	46	39	42	46
Ky39	46	46	42	48	48	46	32/	44	47	50
Ky49	41	39	38	42	43	39	44	36/	42	44
Mo2RF	42	42	35	47	42	42	47	42	31/	44
CI.61	41	42	42	46	48	46	50	44	44	33/
Mean	40	42	39	44	44	41	46	41	43	45
Suckers per Hundred Plants										
R30	0/	8	8	3	8	5	9	5	1	1
H21	8	0/	3	0	1	3	4	4	2	0
33-16	8	3	0/	1	4	1	3	7	0	11
K63	3	0	1	1/	8	5	6	0	4	4
K64	8	1	4	8	0/	1	0	0	4	1
Ky27	5	3	1	5	1	2/	2	4	1	4
Ky39	9	4	3	6	0	2	0/	0	1	3
Ky49	5	4	7	0	0	4	0	0/	9	0
Mo2RF	1	2	0	4	4	1	1	9	0/	1
CI.61	1	0	11	4	1	4	3	0	1	0/
Mean	5.3	2.8	4.2	3.4	3.0	2.9	3.1	3.2	2.6	2.8

Table 6.--LATE WHITE SINGLE CROSSES: Three-Year Average, 1945-1947
 Urbana, 1945; Urbana and Bluffs, 1946; Brownstown, 1947

Parent lines	H21	K64	R30	Ky27	CI.61	33-16
Acre Yield, Bushels						
H21	--	102.1	102.8	100.6	103.9	97.2
K64	102.1	--	97.0	--	93.0	97.7
R30	102.8	97.0	--	--	--	91.3
Ky27	100.6	--	--	--	95.5	89.0
CI.61	103.9	93.0	--	95.5	--	73.9
33-16	97.2	97.7	91.3	89.0	73.9	--
Mean	101.3	97.4	97.0	95.0	91.6	89.8
Moisture in Grain at Harvest, Percent						
H21	--	25.2	26.2	23.3	23.0	21.9
K64	25.2	--	24.7	--	27.1	23.5
R30	26.2	24.7	--	--	--	23.0
Ky27	23.3	--	--	--	21.8	20.5
CI.61	23.0	27.1	--	21.8	--	21.4
33-16	21.9	23.5	23.0	20.5	21.4	--
Mean	23.9	25.1	24.6	21.9	23.3	22.1
Shelling Percentage						
H21	--	82.9	82.7	83.6	78.6	82.5
K64	82.9	--	81.1	--	76.9	82.9
R30	82.7	81.1	--	--	--	83.1
Ky27	83.6	--	--	--	81.8	85.5
CI.61	78.6	76.9	--	81.8	--	75.5
33-16	82.5	82.9	83.1	85.5	75.5	--
Mean	82.1	81.0	82.3	83.6	78.2	81.9
Erect Plants at Harvest, Percent						
H21	--	85	73	85	81	74
K64	85	--	66	--	80	76
R30	73	66	--	--	--	79
Ky27	85	--	--	--	91	72
CI.61	81	80	--	91	--	74
33-16	74	76	79	72	74	--
Mean	80	77	73	83	82	75

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