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1962 Corn Performance Trials

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1962 Corn Performance Trials

CROP PERFORMANCE TESTING ACTIVITY

AGRICULTURAL EXPERIMENT STATION

SOUTH DAKOTA STATE COLLEGE BROOKINGS

1962 South Dakota Corn Performance Trials

J. J. Bonnemann 1/

Agricultural Experiment Station South Dakota State College Brookings, South Dakota

This pamphlet reports the performance of corn hybrids harvested in 1962. Also included are two year variety averages of yield and moisture content where available. The trials have been conducted under the supervision of the Crop Performance Testing Activity of Statewide Services, Agricultural Experiment Station for the 1961 and 1962 crop seasons.

The purpose of the trials is to supply farmers, ranchers, and others in agri-business, information on the relative performance ability of the various hybrids entered when grown under similar conditions of environment. The crop adaptation areas in which the tests were located are based upon differences in soil type, elevation, temperature, rainfall and other related conditions. Data reported are the acre grain yield, moisture percentage of the ear corn, performance score and stalk lodging where valid data were obtainable.

When evaluating and selecting hybrids for use in this state one should refer to the trials conducted nearest the area in which the hybrid is to be planted.

Location of the 1962 Trials

Field trials were planted in the areas marked (X) in Figure 1. Entries in each test varied from 20 to 36 hybrids. Tables following the text material present the data obtained.

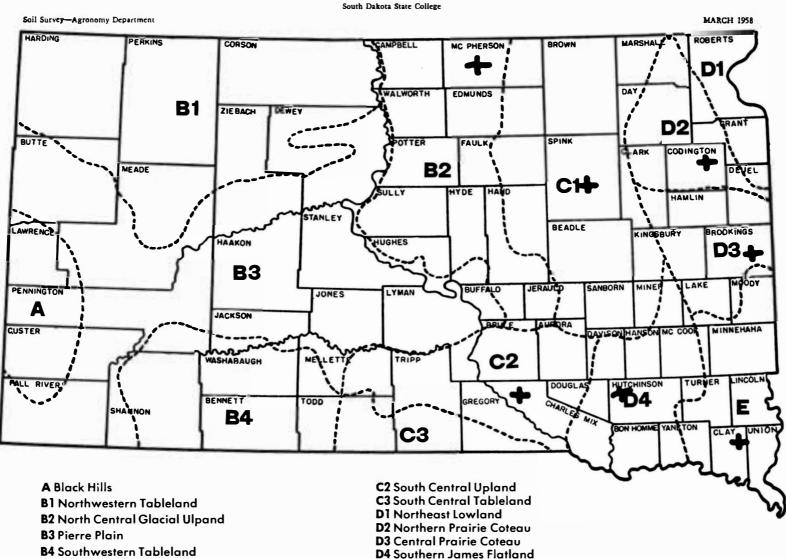
The exact location of these trials, soil types, and dates of planting and harvesting are shown in Table 1. Trial sites located with off-station cooperators were selected with cooperation of the Soil Conservation Service. A site was chosen after soil sampling showed the site to be representative of a soil type prominent in the crop adaptation area.

Weather and Climatic Conditions

Climatic data for the 1962 growing season are presented in Table 2. These data are based upon reports of the Monthly Climatological Data, U. S. Department of Commerce, upon reports of the sub-station superintendents at Watertown and Centerville, and upon additional rainfall data from gauges

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The assistance of D. B. Shank, D. W. Beatty, Substation supervisors and cooperating tarmers is hereby gratefully acknowledged.





E Southeast Prairie Upland

-2-

C1 Northern James Valley

Table 1. Location of the 1962 Corn Performance Trials

District	County	Location	Post Office	Planted	Harvested		
В2	McPherson	North Central Substation	Eureka	May 11	Oct. 18		
cī	Spink	Redfield Devel. Farm	Redfield	May 12			
C_2	Charles Mix	Bruce Bakken, 5 N	Platte	June 13	Oct. 22		
D_2^2	Codington	Northeast Expt. Farm	Watertown	May 26	Oct. 5		
D_3	Brookings	Agronomy Farm	Brookings	May 14	Oct. 17		
D4	Hutchinson	Frank Wermers, 1 1/2 E.	Dimock	May 22	Oct. 23		
E	Clay	Southeast Expt. Farm	Beresford	May 16	Oct. 25		
B2	Williams loar	m					
c_1	Beotia-Harmon	ny silty clay loam					
C_{2}^{-}	(Reliance-like) silty clay loam						
D 2	Kranzberg silt loam						
$\overline{D_3}$	Vienna loam						
D4	Houdek silt loam						
E	Kranzberg si	Kranzberg silty clay loam					

located on the cooperating farms. Average mean temperatures for these offstation locations were taken from reporting stations at Acadamy for Area C_2 and from Parkston, 5E, for Area D_4 .

Generally precipitation was more than adequate during the first three months of the growing season. Actually, rain fell in excessive amounts almost daily from mid-May through mid-June causing delays in planting, especially in Areas C2 and D2.

Temperatures were below normal from May through September at most locations. October temperatures were above normal, with mean temperatures averaging as much as ten degrees above normal at some locations, early in the month. The first hard freeze was unusually late at many locations.

Corn planted before the heavy precipitation began made slow progress because of cool soil temperatures, standing water and many overcast days. Where planting was not possible until early June the absence of early killing frost minimized losses from wet corn and much of the corn was physiologically mature in some areas before a killing frost occurred. Corn in the D2 trial was subjected to a killing frost, 24°F., on September 20 and the result was corn of very high moisture content.

Mail and high winds hit the D4 trial on August 8. Lodging was quite severe and stalk damage was evident. The trial was harvested for yield but one should examine the results with the above facts in mind.

Hybrid Entry Procedure

Hybrids registered with the South Dakota State Department of Agriculture for two years previous to application were eligible for entry in 1962. A nominal fee was charged for each entry in each area except entries included

Table 2. Precipitation and Temperature for the 1962 Corn Growing Season of South Dakota

		Precipitation, inches Depar-				Temperature in degrees F. Depar-		
Location			ture	Total	Month	ture		
a nd		Month	from	depar-	mean	from	Average	
District	Month	Total	normal	ture	temp.	normal	Departure	
Eureka	May	3.61	0.75		56.2	0.1		
	June	3.66	-0.17		63.8	2		
B ₂	July	6.18	3.73		66.4	-6.0		
		1.14			69.4	-1.3		
	Sept.	2.76	1.44		57.0	-3.1		
	Oct.	.41 17.76	-0.68		49.7	2.1		
				3.80			-1.6	
	Last fre	eze 30º	- May 1		First	frost 280	- Oct. 20	
Platte	May				61.6	2.8		
5 N	June 1	3 5.30			66.8	-2.3		
	July	5.70			recor	ds not ta	ken	
c_2		2 2.70			these	two mont	:h s	
	Sept.	1.60			60.9	-3.6		
	-	.50 15.80			52.1	0.1		
	Last fre	-	adamy) 22	o - April 1	5 First	frost(Aca	damy) 28° - 00	
IE Farm	Mav	9.26	6.39		55.7	-0.3		
		4.45			62.8			
			3.62		67.3			
D ₂		1.14			66.9			
22			-0.70		54.4			
		0.90	-0.26		50.0	2.3		
	000.	23.19	-0.20	8.16	30.0	2.5	-1. 95	
	Last fre		- April :		First	frost 24 ⁰	- Sept. 20	
Br o oking s	Mav	4.10	1.31		59.6	2.0		
$1_{\mathbb{E}}$	•	4.76	0.81		64.9			
Б	July		5.14		68.1	-5.1		
D3	Aug.	.93	-2.04		68.3	-2.9		
- 3		2.51	0.48		56.5	-4.8		
	Oct.	.54	- 0.68		50.5	0.9		
		20.13		5.02	30.5	0.7	-2.1	
	Last fre		- May 1		First	frost 29 ⁰	- Sept. 5	
Dimock	Mav 2	2 1.90			63.1			
1 1/2 E		6.35			67.3			
,		11.90			71.5			
D4	-	3.90			71.7			
-4		4.20			60.3			
		2 0.60 28.85			52.6			
•	Last fre		ston 5E)	190 - Apr.	15 First	frost (Pa	rkston 5E) 29 ⁰	

Table 2.- cont.

SE Farm	May	4.34	64 .0	
	June	5.98	67 . 6	
E	July	5.72	71.6	
	Aug.	3.60	71.6	
	Sept.	3.01	59 . 3	
	Oct.	0.76	52. 0	
		23.41		
	Last free	ze 30° - Apr. 19	First frost 27° - Sept. 20	

by Statewide Services. These entries were checks or promising experiment station hybrids. Either closed or open-pedigree hybrids were eligible to be entered only once in each area.

A listing of the entries and the areas in which they were tested is shown in Table 9.

Experimental Procedure

The entries included in each test were planted in five or six replications, depending on available space, soil type and other related factors. One replication was planted for observation by the public and not harvested. Plots of individual hybrid entries were located at random within each replication. The plots were two rows wide. In most trials, plots were two rows wide by ten hills deep. At Eureka they were six hills deep. At Platte the trial was on listed ground and plants were approximately 20 inches apart in the row.

The test plots were hand picked separately and weighed. Samples for moisture determination were taken on three replications of the plots. The samples were oven dried at 102° C. in the laboratory for at least 48 hours, reweighed and moisture percentages determined.

Measurements of Performance

<u>Yield</u>. The yield reported for each hybrid in each test is the average obtained for field weights of all replications, expressed as bushels per acre of No. 2 corn at 15.5 percent moisture. Varieties of equal potential may yield differently due to variations in soil fertility, slope and stand. Mathematical determinations have been made to ascertain whether yield differences are caused by variations in environment or were true varietal differences.

At the bottom of each yield table is given the minimum yield by which two bybrids must differ for the difference to be considered statistically significant at the 5 percent level. In other words, the chances are 95 out of 100 that the difference is real, and resulting from a true hybrid difference, rather than chance or accident. If the trials were found to have statistically significant differences between mean yields an additional test, Dumcan's Multiple Range Test, was run on the means.

In the interpretation of Duncan's Test, those hybrid mean yields adjacent to the same vertical line are not statistically different in yield. For instance, in Table 3, Pioneer 385, DeKalb 59, Cargill 577, Cargill 533 and Cargill 590 are not statistically different in yield from each other. All other varieties below Cargill 590 are significantly lower than Pioneer 385. These statements hold true only for conditions prevalent in the 1962 trial. It must be remembered that results from only one year do not present as true a picture of yield differences as do average results of three or more years at the same location.

Moisture content. The tables present the moisture content of each entry, expressed as percent of moisture in the ear corn at harvest. Moisture content is directly related to corn maturity, and because maturity is of primary consideration in South Dakota, these figures are very important in the evaluation of the various entries.

<u>Performance rating.</u> The two primary results, yield of grain and moisture percentages are used for determination of this rating. Because we realize how important the relationship between these two factors are for sound, dry corn, this rating further aids in determining not only the yielding capabilities of the entries but also how moisture affects the overall determination of the value for the production of sound corn without additional drying or delayed harvest.

Yieldsfor each entry in each test were converted to percentages by comparing them with the average yield of all entries. Similar calculations were made for moisture at harvest time after first subtracting each moisture content from 100 so that the varieties would be ranked according to their ability to produce sound, rather than soft corn.

The performance rankings that appear in the tables were calculated as follows:

Stand. When missing hills occur several things may be indicated: the seed of the entry was unable to produce a good stand under the environmental conditions prevailing for that trial of something destroyed the kernels before germination or destroyed the young plants. Thin stands reduce yields, and because this work is designed primarily to test yield potential of the varieties corrections in yield were made for missing hills according to the formula:

$$CW = \frac{FW (H-0.3M)}{(H-M)}$$

where CW-corrected weight, FW-field weight, H-number of hills planted per plot, and M-number of hills missing. No corrections were attempted for drilled plantings nor for minor stand variations, that is, fewer than three stalks per hill in hilled plantings.

<u>Stalk lodging.</u> Percentages are given in some tables for stalk lodging. All stalks broken over below the ear were recorded as lodged.

Average yield over a period of years. Corn Performance Trials were conducted by Statewide Services on a fee basis beginning in 1961. Comparisions of trials prior to 1961 are not made in this pamphlet.

In some of the trials data are presented for entries which have been entered in the trials for two years.

In any one year an entry may fluctuate in its relative value because of specific environment conditions under which the trial was conducted. Averages for a period of years tend to iron out these environmental variations.

<u>Use of the tables presented.</u> In the major corn producing areas of the mid-west, yield is generally of primary importance; moisture content is a secondary or relative consideration. Conditions in much of South Dakota are quite different from those found in the central corn belt area. Many of the crop-adaptation areas have conditions common to the northern plains; limited frost-free growing periods, limited precipitation, dry, high temperatures, to suggest a few.

Northern plains conditions require corn hybrids that will yield satisfactorily and especially one that produces corn that can be stored without additional costly handling. While the figures are relative, the use of the performance score provides information the same as the individual might derive.

To satisfy one's desire as to which hybrid one might use he should first check those hybrids yielding most satisfactorily. Then he can mark those entries with below average moisture content. Next, compare those marked that are both above-average for yield and below-average for moisture. The results obtained will closely approximate the rating calculated by the performance score.

It is sound practice to plant more than one hybrid. Maturity, yield, quality and standability all merit consideration when buying seed corn. When planting a new hybrid the acreage should be limited until it's adaptability to the environment present on the particular farm is known.

Table 3. Corn Performance Trial, Area $\rm B_2$ North Central Substation, Eureka, 1962

V ar iety	Yield bu/ac	Performance rating	Percent moisture at harvest	Stalk lodging percent	
Pioneer 385	72.6	1	34.9	0	
De Kal b 59	66.1	6	39.9	0	
Cargill 577	66.0	4	37.9	0	- 11
Cargill 533	65.9	2	33.2	0	
Cargill 590	64.9	3	34.0	1	
Pioneer 384 SD 240	63.4 62.7	5 8	34.1 35.2	0	'
SD 250	61.7	10	35.8	0	
DeKalb 56	61.5	7	32.3	0	
SD Exptl 40	59.1	11	32.6	3	1111.
Sokota 255	58.6	13	37.3	0	
Pioneer 388	57 . 9	9	28.4	0	111111
Pioneer 3862	54 . 6	12	28.6	2	
DeKalb 58 SD 220	54.4 54.2	16 14	32.9 31.2	0 2 0	111111
Pioneer 391	53.1	15	29.2	0	, 1111
Agsco 100	50.3	19	34.5	0	
DeKalb 50	50.0	17	30.9	2	
SD 210 Agsco 95	48.3 46.1	18 21	29.2 36.3	1 0	. 1
Pioneer 3891 Average	42.7 57.8	20	24.1 33.0	2	

Yield Differences of less than 8.1 bushels per acre are not significant

Table 4. Corn Performance Trial, Area C₂ Bruce Bakken Farm, Platte, 1962

Variety	Yield bu/ac	Performance rating	Percent moisture at harvest		Statistical significance using Duncan's Multiple Range Test at 5% level
SD Exptl 37 Pioneer 3618 N 2142A (Nebr.) Pioneer 362 Pioneer 376 Cargill 259 SD 400 Sokota 407 DeKalb 251	66.1 64.5 63.7 62.0 61.7 61.4 60.7 57.7	2 3 5 6 1 10 4 14	32.3 32.3 34.9 32.3 23.4 37.5 28.3 34.6 32.6	0 0 2 0 2 0 0 0	
Disco 111-AA Pioneer 3445 Pioneer 368 DeKalb 409 Sokota 255	57.4 57.0 57.0 56.7	13 16 9 12	33.5 35.3 29.4 31.8 22.9	0 0 4 2 2	
DeKalb 414 SD 250 Cargill 256 Pioneer 372 DeKalb 411 SD 270 SD Exptl 26	56.6 55.5 53.3 52.5 51.1 50.7 49.7	17 8 20 19 21 15	36.6 24.3 34.6 31.3 32.9 23.2 25.0	1 2 4 1 1 3 0	111
DeKalb 423 Average	48.9 57.2	22	35.0 31.1	0	

Yield differences of less than 7.3 bushels per acre are not significant.

Table 5. Corn Performance Trial, Area D2, Northeast Research Farm, Watertown, 1961-62

Variety	Yield bu/ac	Performance rating			Statistical significance using Duncan's Multiple Range test at 5% level
SD Exptl 39	54.1	1	40.0	0	1
Cargill 590	53.3	2	43.9	2	
Pioneer 385	52.9	4	48.2	0	1
S D 2 50	48.3	8	44.7	0	8 [6
SD Exptl 26	48.2	7	44.5	0	
Pioneer 388	48.2	5	42.0	1	1
DeKalb 56	48.2	10	45.3	0	10
Pioneer 3862	47.8	9	43.8	1	1
Pioneer 384	47.4	14	46.3	1	10
SD 220	47.0	3	36.8	1	
Pioneer 377A	46.9	18	51.9	1	
SD 240	46.4	13	44.2	3	11 8
Disco 101-A	45.6	19	49.8	2	1 4
DeKalb 46	45.3	12	41.8	0	1 1
Sokota 255	45.1	17	47.4	1	
SD 210	45.0	6	38.4	1	
Pioneer 391	44.8	11	39.7	2	4 4
DeKalb 62	44.7	16	45.6	0	1 1
DeKalb 50	44.1	15	44.0	0	1 1
DeKalb 58	41.4	20	45.0	1	17801
Average	47.2		45.2		

Yield differences of less than 4.1 bushels per acre are not significant.

Entries with	2-year averages,	1961-1962
Pioneer 377A	50.5	48.7
Pioneer 384	56.7	43.9
Pioneer 388	53.4	40.7
Pioneer 391	54.3	37.9
SD 210 SD 220 SD 240	54.2 54.8 52.3	37.6 37.1 42.7
SD 250	54.9	43.5
SD Exptl 26 Average	58.6 54.4	43.2 41.7

Table 6. Corn Performance Trial, Area D3
Agronomy Farm, Brookings, 1961-1962

Variety	Yield bu/ac	Performance rating	Percent moisture at harvest	Stalk lodging, percent	Statistical significance using Duncan's Multiple Range Test at 5 % level
Pioneer 376 DeKalb 251 DeKalb 222 Pioneer 374 Cargill 577 DeKalb 59 Cargill 680 Disco 108-AA Pioneer 362 DeKalb 61 Cargill 590 Sokota 407 Pioneer 377A Pioneer 377A Pioneer 3775 Disco 101-A SD 250 SD Exptl 26 Sokota 255 SD 240 DeKalb 62 SD 400 Pioneer 388 SD 270 Average	92.0 90.9 87.8 87.3 87.2 85.6 85.5 84.7 84.2 84.1 83.9 83.5 82.9 82.0 81.7 78.9 78.5 77.1 76.4 75.3 74.8 74.5 74.4	1 5 4 6 3 7 13 8 17 9 2 11 14 16 15 12 10 19 18 22 23 20 21	33.6 38.1 33.4 34.0 31.5 33.7 36.5 33.0 37.8 32.6 27.3 33.3 33.8 34.9 33.7 28.3 27.1 30.5 28.5 32.9 32.9 30.9 30.9 32.4	0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 2 0 1 0 1	

Yield differences of less than 6.5 bushels per acre are not significant.

Entries with	2-year averages,	1961-1962
Disco 101-A	89.2	31.4
Pioneer 362	90.9	36.5
Pioneer 374	92.3	32.2
Pioneer 376	95.8	32.9
Pioneer 377A	87.5	31.2
SD 240	75.6	28.1
SD 250	83.6	28.3
SD 270	82.3	29.2
SD Exptl 26	81.4	28.0
Average	86.5	30.9

Table 7. Corn Performance Trial, Area D₄, Frank Wermers Farm, Dimock, 1962

Variety	Yield bu/ac	Performance rating	Percent Moisture at harvest	
Pioneer 328	76.4	1	30.3	
Iowa 5063	72.2	2	26.1	
Deralb 440	72.1	3	27.5	
Sokota 645	71.8	4	27.7	
Sokota 625	66.9	10	27.9	
DeKalb 488	66.9	11	28.5	
Pioneer 3618	66.2	5	23.5	
DeKalb 3x3	66.2	6	25.5	
Pioneer 362	65.7	7	25.0	
DeKalb 423	65.1	13	26.6	
Green Acres 446	65.1	16	31.1	
N 2142A (Nebr.)	64.9	8	23.6	
Pioneer 352	64.3	9	23.0	
Pioneer 3445	63.9	12	24.1	
SD 420	62.3	15	25.4	
SD Exptl 27	61.7	14	23.2	
DeKalb 409	60.9	17	24.4	
DeKalb 444	60.4	21	27.1	
SD 604	59.9	20	26.0	
Sokota 619	59.3	19	22.9	
Disco 107-AA	57.9	23	23.6	
Pioneer 376	57.9	18	20.2	
DeKalb 427	56.9	24	27.4	
SD 400	55.8	22	19.5	
Curry's C-59	55.6	25	25.5	
Cargill 259	54.0	26	27.6	
Average	63.5		25.5	

L.S.D. .05 N.S.

Table 8. Corn Performance Trial, Area E, Southeast Research Farm, Beresford, 1961-1962.

Variety	Yield bu/ac	Performance rating	Percent moisture at harvest	Stalk lodging percent	Statistical significance using Duncan's Multiple Range Test at 5% level
DeKalb 3x1	131.3	1	28.1	0	1.
Pioneer 318-A	127.5	2	28.3	0	11.
DeKalb 661	120.3	6	28.0	1	111.
Disco 112-A	120.1	4	25.0	0	1111.
Iowa 5063	119.3	3	24.2	1	11111
Cargill 259	118.6	7	26.8	0	11111
Green Acres 446	118.0	11	29. 5	0	11111
Pioneer 329	117.8	10	29.3	0	111111
Sokota 619	117.4	5	25.2	0	11111
Sokota 645	117.4	8	27.8	0	111111.
Pioneer 328	116.5	12	28.5	0	1111111
DeKalb 3x2	116.1	15	30.4	0	
DeKalb 488	115.3	16	30.3	0	111111111
Disco 115-A	114.5	13	27.4	0	111111111
SD Exptl 38	112.7	9	24.0	0	
Cargill 270	112.5	20	29.0	0	111111111
N 2142A(Nebr.)	112.2	17	28.0	1	111111111
Pioneer 362	111.6	19	27.9	0	111111111
Pride 78A	111.0	27	34.0	1	111111111
Pioneer 3618	110.9	18	26.9	0	
SD Exptl 36	110.4	14	24.3	0	111111111
Green Acres 004	110.2	25	31.4	0	111111111
Pioneer 3445	109.4	23	29.0	0	111111111
SD 622	109.0	21	28.4	2	
Pride 66A	108.7	24	29.7	1	
SD Exptl 27	108.1	22	27.6	2	111111111
SD 604	106.4	26	28.6	1	111111111
Curry's C-62	106.1	28	29.6	ī	
DeKalb 633	105.0	33	34.5	ī	1111111
DeKalb 444	104.7	29	29.2	0	1111111
Cargill 285	103.8	35	33.9	Ö	
SD Exptl 35	102.9	30	29.0	0	11111
SD 620	101.5	34	31.3	0	. [] []
DeKalb 440	100.7	31	29.0	2	111
Sokota 625	100.3	32	29.6	0	* 1
Green Acres 614	98.0	36	31.7	1	100
Average	111.8	30	28.8	•	
Yield differences		than 13 0 h		acro aro r	not gignificant

Yield differences of less than 13.0 bushels per acre are not significant

Entries with 2-ye	ear average	es, 1961-1962
Curry's C-62	92.2	27.8
Disco 112-A	102.4	23.4
Green Acres 004	96.9	29.3
Green Acres 446	100.3	29.3
Pioneer 328	101.5	27.7
Pioneer 329	102.9	27.6
Pioneer 362	99.4	25. 0
SD 604	96.3	25.9
SD 622	98.2	26.9
SD Exptl 27	99.0	24.6
Average	98.9	26.7

Table 9. The entries tested in the 1962 Corn Performance
Trials and the tables in which they appear

Variety	T a ble	Variety	T a ble
Agsco 95	3	N 2142A(Nebr. 202)	4, 7, 8
Agsco 100	3	,	., ., .
-		Pioneer 318-A	8
C ar gill 2 56	4	Pioneer 328	7, 8
Cargill 259	4, 7, 8	Pioneer 329	8
Cargill 270	8	Pioneer 352	7
Cargill 285	8	Pioneer 362	4, 6, 7, 8
Cargill 533	3	Pioneer 368	4
Cargill 577	3, 6	Pioneer 372	4
C ar gill 590	3, 5, 6	Pioneer 374	6
Cargill 680	6	Pioneer 376	4, 6, 7
		Pioneer 377-A	5,6
Curry's C-59	7	Pioneer 384	3, 5
Curry's C-62	8	Pioneer 385	3, 5
		Pioneer 388	3, 5, 6
Disco 101 - A	5,6	Pioneer 391	3, 5
Disco 107 -AA	7	Pioneer 3445	4, 7, 8
Disco 108 -A A	6	Pioneer 3618	4, 7, 8
Disco 111-AA	4	Pioneer 3658	
Disco 112 - A	8	Pioneer 3775	6
Disco 115-A	8	Pioneer 3862	3, 5
		Pioneer 3891	3
DeKalb 46	5		
DeK a 1b 50	3, 5	Pride 66A	8
DeKalb 56	3, 5	Pride 78A	8
DeKalb 58	3, 5		
DeKalb 59	3, 6	Sokota 255	3, 4, 5, 6
DeKalb 61	6	Sokota 407	4, 6
DeKalb 62	5, 6	Sokota 619	7, 8
DeKalb 222	6	Sokota 625	7, 8
DeK al b 2 51	4, 6	Sokota 645	7, 8
DeK al b 409	4, 7		
DeKalb 411	4	SD 210	3, 5
DeKalb 414	4	SD 220	3, 5
DeK al b 4 2 3	4, 7	SD 240	3, 5, 6
DeKalb 427	7	SD 250	3, 4, 5, 6
DeKalb 440	7,8	SD 270	4, 6
DeKalb 444	7,8	SD 400	4,6
DeKalb 488	7,8	SD 420	7
DeK al b 633	8	SD 604	7, 8
DeK al b 661	8	SD 620	8
DeK al b 3x1	8	SD 622	8
DeKalb 3x2	8		
DeK al b 3x3	7	SD Exptl. 26	4, 5, 6
		SD Exptl. 27	7, 8
Green Acres 004	8	SD Exptl. 35	8
Green Acres 446	7, 8	SD Exptl. 36	8
Green Acres 614	8	SD Exptl. 37	4
		SD Exptl. 38	8
Iowa 5063	7,8	SD Exptl. 39	5
		SD Exptl. 40	3