

2002 Pa. Commercial Hybrid Test Reports

PENNSTATE

College of Agricultural Sciences
Agricultural Research and Cooperative Extension

Pennsylvania Commercial Hybrid Corn Tests Report

How to Use This Report

This report provides independent and unbiased information for the selection of commercial hybrids available in Pennsylvania. It is to be used to supplement other sources of information on such as seed industry performance test sheets, independent test reports and on farm performance records when making hybrid selection decisions.

The first factor to consider when using this report is hybrid maturity. The hybrids listed in Tables 1 and 2 are ranked in ascending order by grain moisture with the earliest hybrids (lowest grain moisture) at the top. In Table 2, hybrids are listed alphabetically in no particular order of good indicator of hybrid maturity, those with the lower moisture are generally adapted to the test season environments. Identify hybrids in the list that you know are adapted to your area, and then evaluate new hybrids that have the ability to mature consistently. Selecting hybrids based on a single test result as a hybrid that is late for your area may result in a considerable range among maturity in the hybrids entered in each zone. Once you have identified the appropriate hybrid maturity range, compare the yields of the hybrids that have been evaluated.

Yield performance is variable across locations and is best predicted by using data from multiple locations. The mean yield over all sites is the best guide to hybrid performance. Individual location hybrid means (Table 2) can help in assessing how consistent or stable the hybrid mean across locations. For example, some hybrids may do well at high yielding sites but may not do well at low yielding sites. We (D.R.M.) recommend using data from a single site even if it is close to your farm, to make hybrid selection choices.

Once you have identified some prospective hybrids, come back to the table from the erect plants column as well as any disease rating data that may have been collected. It is also important to check with a seed company representative about other characteristics of the hybrid that may be important for your operation.

Once you have gone through this process, you should be able to select hybrids that have above average performance. This is an important part of profitable corn production since as these reports demonstrate, there is a wide range in the performance of corn hybrids.

Further, we recommend that you evaluate selected hybrids on your farm under your own growing conditions and practices. This is the best way to make a final determination of the proper hybrids for your operation.

Short-season hybrids (Maturity Zone 1) 2002 results

Tests of commercially available corn hybrids are conducted annually at several locations in each of the four maturity zones of Pennsylvania to provide farmers with independent information on extension agents and other interested persons. This information is available to you through this report. This report includes results from the 2002 season.

Table 1 contains the combined results for all locations in each maturity zone. Table 2 contains the yield data generated at each location. We believe that the data on performance averages for each maturity zone are more important to you when making a final decision on your hybrid selection. The data represent a wide variety of soil, weather, and management conditions. A two year summary of results for hybrids tested in both 2001 and 2002 are given in Table 3.

Procedure: This testing program was established in 1962 and is a hybrid test program. It tests a total population of 26,000 plants per acre. The plants were set to 10 plants per row. When the corn was 17 to 18 inches tall, extra plants, primarily doubles and red plants, were removed to reach the final population. Rows were replicated three times at each location. Cooperator and planting and harvesting dates are shown in Table 4.

Plots were harvested with a self-propelled combine equipped with electronic instruments for determining weight, moisture and bushel weight (sooner measured test weight). Yields are reported as bushels per acre, while grain moisture and erect plants are reported as percentages. Bushel weight is reported as pounds per bushel. Shelled grain yields were standardized at 15.5 percent moisture.

Statistical analysis was conducted using the PROC MIXED procedure of SAS. The F test was used to determine if differences between hybrids were significant. The LSD (0.05) was used to determine if differences between hybrids were significant. The F test was used to determine if differences between hybrids were significant. The LSD (0.05) was used to determine if differences between hybrids were significant.

NS - Not Significant

Table 1. Early medium-season (Maturity Zone 2) hybrid performance combined across three locations.

Brand-Hybrid	Grain Moisture (%)	Grain Yield (bu/acre)	Erect Plants (%)	Bushel Weight (lbs)
Garst 8801 IT	18.4	91.4	94.4	54.6
Garst 8888	19.1	78.0	94.3	54.3
Hyltest HT7360 Bt	19.3	78.1	85.0	56.1
New Century NC95	19.5	95.4	97.0	55.2
Doebler's 509X	20.3	95.5	96.5	55.4
Agway AG5206	20.5	98.7	95.5	53.8
NC+ 2399 B	20.5	97.1	94.8	55.1
Dekalb DKC57-40	20.9	89.4	90.8	54.8
New Century NC101	21.2	89.4	97.9	55.8
Agway AG5323	21.3	105.5	95.1	55.4
Doebler's 529X	21.5	83.1	94.2	54.2
NC+ 3451 B	21.5	108.5	99.1	53.4
Dekalb DKC59-08	21.7	87.9	94.4	53.5
Agway AG5519	21.8	98.1	97.2	53.7
Doebler's HC350	21.8	100.8	93.7	53.3
Dekalb DKC58-78	21.9	95.9	98.4	51.9
Agway AG610	22.0	106.5	97.5	54.1
Golden Harvest H-8618Bt	22.1	103.0	89.1	50.1
Hyltest HT4802 Bt	22.1	86.6	96.4	53.5
NK Brand N65-M7	22.2	106.0	93.4	53.4
Golden Harvest H-8906	22.4	111.4	92.5	53.9
Chemgro 7253 RR	22.5	98.9	97.0	53.0
NK Brand N58-D1	23.1	117.3	97.9	54.5
NK Brand N64-L5	23.2	107.5	94.2	53.4
MEAN	21.3	97.2	94.8	54.0
LSD (0.05)	0.5	10.3	3.4	1.4

Table 2. Short season (Maturity Zone 1) hybrid performance combined across six locations.

Brand-Hybrid	Grain Moisture (%)	Grain Yield (bu/acre)	Erect Plants (%)	Bushel Weight (lbs)
Doebler's 241X RR	20.7	92.4	98.0	53.5
Doebler's 288X	21.6	92.7	99.0	54.9
Hyltest HT220 Bt	21.6	122.0	97.0	53.8
Agway AG424	22.2	108.0	94.6	52.8
Dekalb DKC45-28	22.3	112.8	91.8	53.8
Doebler's 298 XP	22.7	124.5	97.6	54.4
Hyltest HT235	22.7	115.5	97.6	50.8
NC+ 1320	23.0	124.4	91.9	51.1
NK Brand N45 A6	23.2	106.9	99.1	50.8
Hyltest HT218	23.2	142.6	97.2	53.3
Dekalb DKC51-43	23.8	127.8	96.3	52.7
Agway AG4587	24.0	115.4	99.3	52.5
Agway AG4623	24.2	121.5	91.1	52.1
Agway AG4717	24.6	123.6	98.9	52.5
Green 2297 H	24.7	127.1	97.7	52.6
Dekalb DKC53-34	25.0	124.0	98.9	51.4
Chemgro 8320 RR	27.6	128.2	98.3	51.5
NK Brand N52 Z7	27.7	124.7	98.2	50.3
MEAN	23.6	120.9	96.5	52.5
LSD (0.05)	0.6	8.2	NS	0.5

NS - Not Significant

Table 3. Two-year average of short season (Maturity Zone 1) hybrids that were entered in both the 2001 and 2002 tests.

Brand-Hybrid	Grain Moisture (%)	Grain Yield (bu/acre)	Erect Plants (%)	Bushel Weight (lbs)
Doebler's 238 X	20.1	109.4	98.7	56.2
Doebler's 296 XP	20.8	128.2	97.0	55.5
Hyltest HT235	21.1	127.5	91.6	52.3
NC+ 1320	21.3	134.3	91.8	52.2
NK Brand N45 A6	22.0	148.2	98.8	51.4
Agway AG4587	22.2	131.6	96.9	53.7
Agway AG4717	22.3	131.8	98.4	53.3
Agway AG4603	22.6	133.3	96.5	52.2
MEAN	21.4	128.2	96.5	53.6

Table 4. Location, cooperative planting date, harvesting date, growing degree days (GDD) for 2002 season, and 30 year average GDD for short season (Maturity Zone 1) hybrid tests.

Location (County)	Cooperator	Planting Date	Harvest Date	GDD (2002)	GDD (30-yr Ave)
Centre	Penn State	May 21	November 14	2858	2247
Clinton	Louisa Potatoes Farm	May 28	November 5	2450	1973
Crawford	Dan Horrick	May 28	November 5	2518	2008
Lycoming	Steve Hall	May 24	October 28	2311	1945
Mecheri	Louisa Potatoes Farm	May 28	November 4	2612	2148
Toga	Moss Fritz	May 24	October 28	2516	1910

GDD data calculated by Zink, Inc. 386 Rooking Ridge Dr. Berwyn, PA 18822. GDD was calculated from the planting date until harvest through October 10 whichever occurred first. 70 year averages are calculated using the same dates.

ENTRIES BY LOCATION

Table 2. Early medium-season (Maturity Zone 2) hybrid performance for individual locations, yield is in bushels per acre, leaf height (LH) ratings are 0.5-5.0 where 0.5 equals little or no disease and 5.0 equals premature death.

Brand Hybrid	Lycoming		Clinton		Centre	
	(Yield)	(LH)	(Yield)	(LH)	(Yield)	(LH)
Agway AG5206	115.6	101.4	79.0	1.1		
Agway AG5323	125.7	118.3	72.6	1.3		
Agway AG5519	107.3	109.8	77.2	1.1		
Agway AG5810	126.4	122.5	67.6	2.0		
Chemgro 7253 RR	118.0	104.9	92.5	1.0		
Dekalb DKC57-40	109.7	92.5	76.7	1.0		
Dekalb DKC58-78	94.3	114.7	78.6	1.1		
Dekalb DKC59-08	103.3	96.5	63.8	1.2		
Doebler's 509X	117.7	95.3	79.5	1.4		
Doebler's 529X	69.9	113.2	86.2	1.4		
Doebler's HC350	126.5	109.5	62.4	0.1		
Garst 8801 IT	95.7	95.7	96.7	0.7		
Garst 8888	86.7	88.5	58.9	2.3		
Golden Harvest H 8618 Bt	144.3	106.7	58.1	1.3		
Golden Harvest H 8906	120.2	126.9	67.1	0.4		
Hyltest HT4802 Bt	93.4	108.2	58.1	1.0		
Hyltest HT7360 Bt	88.0	94.8	51.6	2.9		
NC+ 2399 B	136.5	91.1	63.7	1.0		
NC+ 3451 B	131.4	122.5	71.6	1.4		
New Century NC101	113.6	80.4	74.3	1.3		
New Century NC95	89.1	115.8	61.4	1.0		
NK Brand N58 D1	140.7	116.5	91.6	1.5		
NK Brand N64-L5	134.3	120.0	68.1	0.9		
NK Brand N65-M7	119.9	122.6	75.4	1.0		
MEAN	113.0	107.1	71.4	1.3		
LSD (0.05)	21.4	15.7	16.7	0.6		

(Turn to Page F3)

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