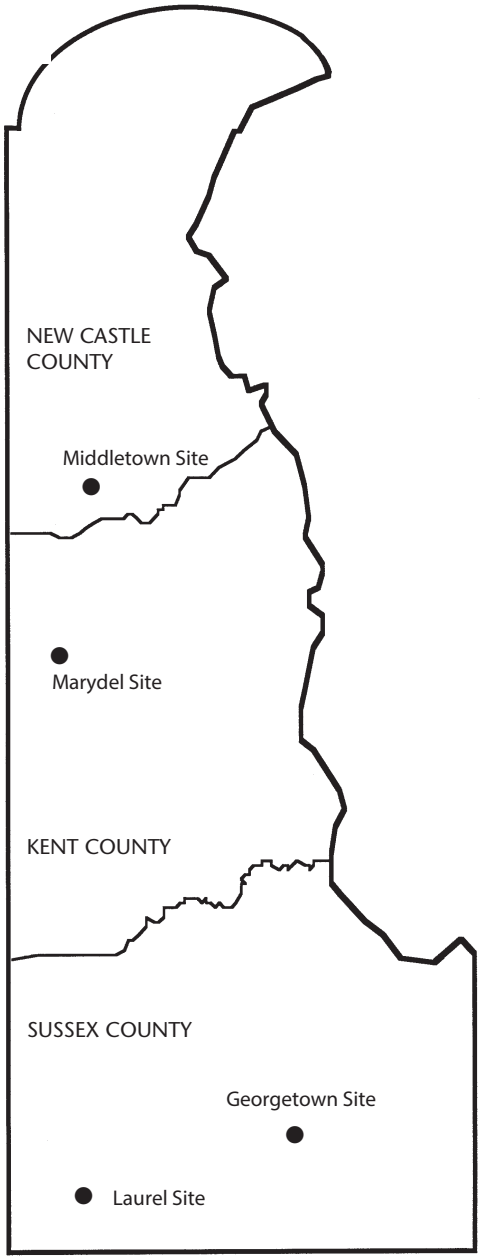
COOPERATIVE BULLETIN

DELAWARE HYBRID FIELD CORN PERFORMANCE TRIALS

2018

University of Delaware
College of Agriculture and Natural Resources
Agricultural Experiment Station
Cooperative Extension
Newark, DE 19716-2170

Test plot locations



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DELAWARE HYBRID FIELD CORN PERFORMANCE TRIALS – 2018

The 2018 Delaware hybrid field corn trials were conducted jointly by the University of Delaware's Agricultural Experiment Station and the Delaware Cooperative Extension Service, College of Agriculture and Natural Resources. Forty hybrids were evaluated at four locations: Emerson Farms at Middletown, DE (dryland), Thomas Family Farms at Marydel, DE (center pivot irrigation), Plum Creek Farms, LLC at Laurel, DE (center pivot irrigation) and Davis Farms at Georgetown, DE (center pivot irrigation). Hybrids were divided into three relative maturity groups; early 101-110 (15 entries), early-medium 111-114 (20 entries) and medium 115-120 days (5 entries). The hybrids tested are being sold for commercial planting or are on a clear track for commercial planting (e.g. within one or two years of access to farmers). Plans and rules for entering these trials are available upon request.

Methodology

A randomized, complete block design with four replications was used in all tests. Four-row plots (experimental units) were planted with a Monosem air planter. The center two rows of each plot were harvested with a small plot combine. Tillage and cultural practices are noted in Table 1. Temperature and rainfall information is taken at or nearest test locations from DEOS (http://www.deos.udel.edu) and summarized in Tables 2 and 3, respectively. The weather data for Davis Farm, Georgetown was taken from DE-REC station, for Thomas Family Farms, Marydel from Dover, DE-SFS station, for Plum Creek Farms, LLC, Laurel from Laurel, DE-Airport station and for Emerson Farms, Middletown from Townsend, DE-REC station. Data were analyzed by analysis of variance and hybrids were ranked by yield in each test.

Traits Measured

- Yield was recorded in bushels per acre on the basis of 56 lb/bu and adjusted to 15.5% moisture.
- Percent moisture is the actual percentage of grain moisture at harvest determined by a grain analysis computer (HarvestMaster Classic GrainGage from Juniper Systems).
- Yield/Moisture (Y/M) is the yield in bu/A (adjusted to 15.5% moisture) divided by the grain harvest moisture.
- Test weight is measured in pounds per bushel determined by a grain analysis computer (HarvestMaster Classic GrainGage from Juniper Systems).
- Final population is the plant population extrapolated from plot data for each hybrid to an acre scale taken at flowering time.
- Percent stalk lodging is the percentage of plants that were broken below the ear.
- Percent root lodging is the percentage of plants that had lodged more than 30^{o}.

C.V. and L.S.D.

The coefficient of variation, or C.V., is a measurement of the amount of uncontrollable variability due to differences in the soil, weather, fertility, etc. A coefficient of variation below 15% is considered good. Please note that the C.V. is expected to be higher at dryland locations.

The least significant difference, or L.S.D., (computed at a 5% level of probability) is a tool to determine if two average values are

significantly different. The difference between two hybrids must exceed the L.S.D. value to be considered significantly different from one another. Example for yield: L.S.D. = 25 bu/A, hybrid X = 120 bu/A, hybrid Y = 150 bu/A. The difference between X and Y (30 bu/A) exceeds the L.S.D. (25 bu/A). Therefore, hybrid X has a significantly lower yield performance than hybrid Y.

Note

When reviewing the enclosed data, it is important to note moisture percentages when comparing hybrids within the same maturity group. Comparisons should not be made between hybrids of different maturity groups since these are separate tests. These results are based on one year's data only and should be considered as preliminary results. Hybrid performance may vary from location to location and from year to year because of differences in rainfall, temperature, soil type, soil fertility, diseases, insects, and a variety of other factors. Growers will obtain the best estimate of individual hybrid performance by looking at performance data over several years and across locations. We have provided a column for each maturity group with the average performance of hybrids over all locations.

HOW TO BEST USE CORN HYBRID PERFORMANCE TRIAL INFORMATION

Information presented in this summary may be useful in selecting corn hybrids for production in Delaware. To maximize the usefulness of this information, follow these suggestions:

1. Select the test location that best represents your production location(s). Generally, corn hybrids are widely adapted across Delaware but certain soil or climatic conditions, cultural practices, or insect/disease problems may limit the choice of an entry.
2. Multiple-year average (means) across the greatest number of years are the best predictors of performance. Refer to previous test reports for information to evaluate corn hybrids which are of interest to you. Comparison between your selected hybrid and the grand mean for that maturity group will be helpful in identifying superior hybrids. When evaluating test results across years or locations, we recommend that you give preference to trials with coefficients of variation less than 15%. Growers should also consider the cultural practices used for each trial.
3. Check the grand mean for the long-term averages and compare with your own production experience. If your yields have been consistently below these grand mean levels, you should evaluate each part of your management system for potential areas of improvement.
4. Using long-term averages, select the hybrid or hybrids with which you are best acquainted or are currently using on your farm. Use these hybrids as “bench marks” when comparing new hybrids. Identify those hybrids which have over years produced yields higher than your selected bench mark hybrid. Consider hybrids with high yields and lower grain moisture (high Y/M numbers). Hybrids with high stalk and root lodging percentages should be avoided.
5. Beginning with the 2014 growing season, we are including one or more corn hybrids to act as **‘Check’** hybrids for producers. We have tried to select check hybrids which will represent the newest and best genetics coming out of commercial programs.

Summary of Results

The 2018 growing season was characterized by wet and cool weather conditions during planting and the early growing season followed by drought during the flowering period. In 2018, the Delaware corn hybrid performance yield tests averaged 190, 207 and 213 bu/A compared to the 2017 yield which averaged 232, 242 and 249 bu/A across the three irrigated locations for the early, early-medium and medium maturity groups, respectively. In the dryland location, average yields in 2018 were 163 and 160 bu/A for the early-medium and medium maturity groups, respectively. The corresponding average yields in 2017 was 200 and 204 bu/A. The reduced yield across all the maturity groups in the irrigated and dryland is thought to be due to a combination of the heavy precipitation and cool weather conditions in May and the water stress conditions that occurred in late June to early July. Grain yield averaged across locations and maturity groups in 2018 was 18% less than in 2017 (2018 Middletown dryland early maturity group was not included). As a reference point, Delaware grain corn yield was expected to average 156 bu/A in 2018 compared to 189 bu/A in 2017 (Delaware Agriculture Statistics Service).

In April, rainfall totals were 3.55, 3.74, 3.33, and 5.38 inches for Townsend (the closest recorded location to, Emerson Farms Middletown), Dover (the closest recorded location to, Thomas Family Farms, Marydel), Laurel Airport (the closest recorded location to, Plum Creek Farms, LLC, Laurel), and Georgetown (Davis Farms), respectively, while the average temperature in April was 50.1, 51.3, 51.6 and 51.7 °F for the locations, respectively. A 50 °F soil temperature is considered the minimum temperature for corn growth, so with lows well below this critical temperature and the daily average just above it, corn germination would have been delayed and corn growth would have been limited if planted prior to May.

Growers experienced cool temperatures during May, and over the month the average temperature for Townsend, Dover, Laurel and Georgetown was 67.4, 68.2, 68.5 and 68. 4 °F respectively (Table 2; temperature data for Laurel from Laurel airport). Low nighttime temperatures fell into the low thirties, forties and fifties during the last two weeks in April and into the forties and fifties during most of the first 10 days of May. Corn heat units do not increase after a maximum temperature of 86 °F is reached. May had 11, 13, 15 and 14 days with daily high temperatures greater than 80 °F and three, six, three and five days reached a high temperature greater than 86 °F at Townsend, Dover, Laurel and Georgetown, respectively. In June, Townsend, Dover, Laurel and Georgetown had 17, 17, 21 and 21 days with daily high temperatures greater than 80 °F and had eight, seven, eight and eight days greater than 86 °F, respectively. In July, Townsend, Dover, Laurel and Georgetown had 28, 28, 27 and 27 days with daily high temperature greater than 80°F, respectively, and 14, 14,12 and 15 days with daily high temperature greater than 86 °F. In August, Townsend, Dover, Laurel and Georgetown had 17, 22, 18 and 21 days with daily high temperature greater than 86 °F, respectively. Overall, 2018 temperatures for the months of June through August were moderate for corn production.

Townsend, Dover and Georgetown received a total of 7.16, 6.91 and 10.23 inches of rainfall in May (Table 3). This excessive rain in early May flooded low spots and delayed plantings, and farmers in low drained fields were forced to replant. In Townsend, Dover and Georgetown June rainfall totaled was 3.07, 5.43 and 6.82 inches, respectively; July rainfall totaled 4.90, 6.17 and 3.74 inches, respectively, and August rainfall totaled 5.41, 5.62 and 2.06 inches, respectively. The Georgetown location that had received 10.23 inches of rainfall in May had impacted the stand in the low drained area. In Laurel, DE-Airport station (the closest recorded location to Plum Creek Farms, LLC, Laurel) had received 5.68, 4.36 and 8.74 inches of rainfall in May, June and July, respectively. The Townsend (the closest recorded

location to Emerson Farms, Middletown) no-till location that had received 7.16 inches of rainfall in May and the low temperatures recorded have been marginally impacted germination since the soil there is a silt loam with a much higher water holding capacity than the soils at the other testing locations. In June, at the three locations there was a lengthy period (June 12-30) without a significant drop of rain. During this period, less than 0.58 inches of rainfall was received. The Townsend (Middletown dryland) location received only 0.58 and 0.37 inches of rainfall from June 12-30 and July 1-20, respectively. This dryland location did not get a drop of rainfall from June 25 to July 14. This extended period of drought occurred during the flowering period, which was particularly coincident with flowering of the early maturity group. However, the Townsend location received over an inch of rainfall in July 21 and 27 which helped offset the impact on medium and medium-late maturity groups. This location received a total of 0.66 inches of rainfall from August 14-30. Overall, 2018 rainfall for the month of June through July 20 was below average and had severely affected the non-irrigated location. The days without a drop of rain at Dover was from June 12-19 and June 25-30 and at Georgetown from June14-21 and June 25-30. In July, the longest period without a half inch of rainfall was 16 days at Dover and 20 days at Georgetown.

Yields at the Middletown location (Emerson Farms, New Castle County; dryland, no-till) averaged 163 and 160 bu/A for the early-medium and medium maturity groups, respectively, compared to the check means of 160 and 167 bu/A, respectively (Tables 4, and 5). The early maturity group was discarded due to the impact from drought. There were significant differences among hybrids in grain moisture and test weight for the early-medium maturity group. In the medium maturity group, there was significant difference among hybrids in yield, grain moisture, yield over moisture, test weight and root lodging.

Yields at the Marydel location (Thomas Family Farms, Kent County; irrigated) averaged 225, 234 and 244 bu/A for the early, early-medium, and medium maturity groups, respectively, compared to the check means of 222, 231 and 244 bu/A, respectively (Tables 6, 7, and 8). There were significant differences among hybrids for yield, grain moisture, yield/moisture, test weight, plant population and root lodging across the early and early-medium maturity groups. There was also significant difference in stalk lodging for the early-medium maturity group. In the medium maturity group, there was a significant difference among hybrids in grain moisture, test weight and plant population.

Yields at the Laurel location (Plum Creek Farms, LLC, Sussex County; irrigated) were low due to excessive and prolonged wet condition during the early growing stage and yields averaged 174, 202 and 207 bu/A for the early, early-medium and medium maturity groups, respectively, compared to the check means of 181, 202 and 202 bu/A, respectively (Tables 9, 10, and 11). There were significant differences among hybrids for yield, grain moisture, yield/moisture, test weight and stalk lodging across the early and early-medium maturity groups. There was also significant difference in plant population among hybrids in the early maturity group. In the medium maturity group, there was significant difference in grain moisture, yield over moisture, test weight and plant population. There was no root lodging across all maturity groups at this testing location.

Yields were lower than expected at the Georgetown location (Davis Farms, Sussex County; irrigated) due to excessive and prolonged wet condition during the early growing stage with an average yield of 171, 184 and 187 bu/A, for the early, early-medium and medium maturity groups, respectively, compared to the check means of 169, 185 and 177 bu/A, respectively (Tables 12, 13 and 14). There were significant differences among hybrids in yield, grain moisture, yield over moisture and test weight across all maturity groups. There was no root lodging across all the maturity groups at this location.

The grain yield rankings of hybrids across locations are provided in each table. A pooled yield average and yield ranks are also provided for each hybrid. There are a few hybrids that had high yield rankings across locations. We encourage growers to give strong consideration to hybrids with high average performance across locations and years and to use such hybrids as benchmarks for future hybrid decisions. However, growers should recognize that the relative performance of some hybrids might differ across environments. Careful hybrid selection should help stabilize yield performance in Delaware.

TABLE 1. EXPERIMENTAL DETAILS AND CULTURAL PRACTICES.

	Emerson Farms – Middletown (Dryland)	Thomas Family Farms – Marydel (Irrigated)	Plum Creek Farms, LLC – Laurel (Irrigated)	Davis Farms, Georgetown (Irrigated)
Number of entries	40	40	40	40
Number of maturities	3	3	3	3
Target Population plants/A	28,000	33,000	33,000	33,000
Row length	17.4’	17.4’	17.4’	17.4’
Number of rows harvested	Center two rows	Center two rows	Center two rows	Center two rows
Number of replications	4	4	4	4
Planting date	May 8	May 1	April 30	May 2
Harvest date	October 2	October 1	September 17	September 20
Soil type	Matapeake silt loam	Sandy loam	Sandy loam	Rosedale loamy sand
Soil pH	6.2	6.1	5.8	5.8
Previous crop	Soybean	Soybean	Sweet corn	Corn
Cover crop	None	None	None	Rye
Tillage practices	No till	Ripped, field cultivator	No till	Disked, ripped, field cultivator
Cultivation	None	None	None	None
Fertilization	20 gallons/A of 20-10-0-1s (N-P_2O_5-K_2O-s) starter 2”x2” (43 lb N & 36 lb P). At V4 –V5 stage side-dressed with 50 gallons/A of 27-0-0-6s (145 lb N).	3 tons/A of chicken manure, 60 lbs/A pot ash. 20 gallons/A of 20-10-0-1s (N-P_2O_5-K_2O) starter 2”x2” (43 lb N & 36 lb P). At V4-V5 stage side-dressed with 60 gallons/A of 27-0-0-6s solution (174 lb N).	20 gallons/A of 20-10-0-1s (N-P_2O_5-K_2O) starter 2”x2” (43 lb N & 36 lb P). At V4 –V5 stage side-dressed with 60 gallons/A of 30% UAN in 4 applications (195 lb N)	20 gallons/A of 20-10-0-1s (N-P_2O_5-K_2O) starter 2”x2” (43 lb N & 36 lb P). At V4 –V5 stage side-dressed with 60 gallons/A of 27-0-0-6s & 40 gallons/A of 27-0-0-1s. two applications (290 lb N).
Herbicide	Lexar 3.5 qt/A, simazine 1 qt/A and liberty 40 oz/A	Lexar 3.5 qt/A and simazine 1 qt/A	Gramaxone 1 qt/A, simazine 2 qt/A and navigator 8 oz/A.	Lexar 3 qt/A and simazine 1 qt/A as pre-emergence and Atrazine 1 qt/A and Impact 1 oz/A in 30% UAN 2% v/v and herbimax 1%v/v post-emergence
Insecticide	Sniper LFR 5 floz/A at planting	Sniper LFR 5 floz/A at planting	Sniper LFR 5 floz/A at planting	Sniper LFR 5 floz/A at planting
Irrigation	None	Center pivot	Center pivot	Center pivot

TABLE 2. DAILY TEMPERATURE AT OR NEAREST TEST LOCATIONS FOR THE 2018 DELAWARE CORN HYBRID VARIETY PERFORMANCE TRIALS DURING MAY AND JUNE.

Date of Month	May						June					
	Georgetown		Dover		Townsend		Georgetown		Dover		Townsend	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	78.0	40.8	79.2	39.1	76.1	35.8	85.7	70.0	86.0	70.6	83.6	69.4
2	88.6	54.3	89.2	52.1	85.0	45.8	81.9	70.2	82.7	69.3	85.7	68.0
3	87.3	64.7	91.3	64.3	88.5	66.0	70.9	58.2	72.6	55.2	72.0	53.9
4	86.9	67.3	90.0	68.3	86.7	68.2	74.4	55.2	74.2	54.0	73.4	52.7
5	76.3	58.3	74.6	60.2	74.7	61.3	80.3	55.9	79.4	54.3	79.9	53.4
6	67.7	56.7	65.5	57.4	66.3	56.6	70.7	59.8	71.4	56.5	72.1	56.0
7	71.6	53.6	73.5	54.7	74.4	53.4	75.0	58.2	73.3	57.8	74.9	56.5
8	68.9	48.2	71.2	50.1	76.1	48.8	82.1	56.7	82.8	57.7	81.6	58.7
9	72.3	49.4	74.7	45.3	77.6	46.1	82.9	65.4	81.1	64.4	83.9	63.3
10	83.0	45.7	83.4	49.2	80.8	47.5	76.9	65.6	73.2	61.2	76.0	61.1
11	82.2	60.1	80.9	58.1	78.3	58.4	65.7	56.3	65.2	53.9	64.5	54.3
12	89.8	58.8	87.4	60.2	81.9	56.5	73.0	54.2	71.7	50.9	72.8	49.0
13	63.7	56.0	64.4	57.2	62.7	56.7	82.2	62.5	81.7	64.2	81.4	64.6
14	79.0	55.6	77.0	56.9	75.8	55.6	83.7	69.3	83.5	68.2	84.7	68.5
15	84.6	65.2	86.8	65.4	85.5	64.6	80.4	62.8	80.0	59.7	79.6	59.3
16	74.2	62.0	70.5	64.1	70.2	64.3	84.3	55.9	84.2	56.1	84.5	54.9
17	69.9	59.6	65.1	60.6	67.0	59.8	88.4	63.0	88.3	61.9	90.2	61.3
18	65.6	54.1	66.6	53.1	68.1	51.1	90.8	68.7	91.6	66.5	92.1	65.5
19	78.1	55.4	72.1	53.6	70.8	51.0	90.8	76.0	86.4	71.8	86.3	69.8
20	83.5	70.1	85.7	68.5	84.1	66.8	88.7	70.4	85.7	65.9	87.0	62.9
21	75.0	60.0	78.9	62.4	78.8	61.2	82.7	69.1	79.5	69.8	80.1	69.6
22	79.6	59.6	71.2	58.9	69.9	58.0	71.3	66.2	71.0	65.0	70.7	61.9
23	81.3	65.8	80.1	62.4	78.4	60.7	84.8	67.5	78.8	67.0	77.1	65.3
24	82.2	60.4	84.1	59.0	82.4	55.8	91.0	70.8	88.1	67.5	88.9	68.9
25	82.6	57.8	85.4	60.8	83.1	58.1	83.4	67.5	82.0	62.3	82.0	61.6
26	88.1	69.2	89.8	70.3	88.0	70.8	79.3	62.7	79.8	60.4	79.3	56.6
27	85.0	58.8	82.9	60.0	81.3	58.7	81.6	64.7	80.4	64.3	78.3	62.4
28	65.7	57.3	68.0	57.8	68.8	56.7	90.3	73.0	87.9	72.4	89.0	73.0
29	79.8	62.2	76.7	63.3	75.2	63.9	90.7	70.9	89.9	68.2	90.5	68.4
30	75.1	65.0	75.9	65.2	76.5	64.6	93.4	67.4	93.2	66.9	93.2	66.9
31	83.2	65.1	79.7	65.2	79.7	64.2						
AVG.	**78.3**	**58.6**	**78.1**	**58.8**	**77.2**	**57.6**	**81.9**	**64.5**	**80.9**	**62.8**	**81.2**	**61.9**

TABLE 2. DAILY TEMPERATURE AT OR NEAREST TEST LOCATIONS FOR THE 2018 DELAWARE CORN HYBRID VARIETY PERFORMANCE TRIALS DURING JULY AND AUGUST (continued).

Date of Month	July						August					
	Georgetown		Dover		Townsend		Georgetown		Dover		Townsend	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	95.1	69.1	94.4	69.9	95.5	69.9	86.7	74.6	87.7	75.1	87.2	73.2
2	96.9	72.9	96.0	72.4	96.3	69.8	88.9	75.1	89.8	74.1	88.9	72.4
3	93.9	75.6	93.7	75.9	94.4	75.7	85.5	73.4	87.2	72.5	86.1	72.4
4	88.1	71.5	88.5	72.0	90.1	71.7	85.9	72.9	86.5	72.7	85.2	72.9
5	89.1	72.7	90.3	72.1	92.0	75.2	92.2	69.2	93.0	70.7	91.0	70.3
6	85.4	75.3	85.0	73.5	84.9	73.0	92.4	69.5	91.3	71.6	91.0	71.1
7	75.4	60.0	76.5	61.8	78.8	58.8	91.0	71.3	91.6	73.2	90.5	74.6
8	77.6	55.1	81.1	54.7	82.4	53.0	91.4	72.8	90.6	70.9	89.1	70.1
9	84.6	52.0	87.8	54.8	86.5	54.1	88.9	73.6	87.6	71.5	86.4	70.2
10	91.6	59.3	92.1	60.9	92.2	61.2	90.7	69.1	89.4	69.7	87.6	68.6
11	90.7	70.7	89.9	69.5	89.7	71.6	87.7	69.8	89.6	69.2	88.1	68.8
12	81.1	67.1	83.3	68.3	85.6	65.9	88.1	68.4	86.5	67.5	85.3	67.5
13	82.3	62.4	83.9	63.5	85.9	62.9	86.2	71.8	86.1	68.8	84.8	66.5
14	86.6	57.2	87.6	58.8	88.7	60.4	84.5	67.6	83.5	66.5	81.7	66.3
15	88.3	67.9	85.3	69.2	83.2	70.4	87.9	69.0	87.2	69.6	86.5	67.8
16	91.7	73.2	94.8	69.4	95.3	69.6	90.3	68.1	90.0	70.5	88.3	70.1
17	92.4	72.2	93.4	71.0	93.6	72.2	92.5	71.4	91.6	73.8	90.7	72.5
18	86.1	70.7	86.0	66.0	86.0	65.9	90.4	76.7	87.9	71.5	85.8	72.6
19	85.5	66.4	86.1	60.7	86.1	60.1	84.1	71.6	77.1	68.0	74.8	66.8
20	82.7	60.2	82.4	60.2	83.6	59.4	78.2	71.3	77.4	67.3	76.1	66.9
21	75.1	65.1	74.7	64.6	72.8	61.5	82.0	69.2	81.5	71.8	80.9	69.4
22	86.0	69.1	84.3	67.3	83.5	66.3	84.8	72.4	83.1	69.7	81.7	67.9
23	84.8	76.4	85.1	72.1	84.8	75.0	78.3	60.5	78.2	60.9	77.9	60.9
24	83.7	74.1	85.6	75.0	84.9	72.2	84.8	56.0	84.2	56.8	83.4	55.8
25	81.3	72.4	83.4	70.9	82.1	71.2	82.6	55.9	81.6	57.9	81.6	56.3
26	86.7	71.9	87.4	72.0	86.4	71.2	86.8	59.7	86.1	61.4	84.3	63.4
27	90.4	71.2	89.0	70.3	89.7	68.5	91.1	69.3	89.9	71.2	88.2	67.8
28	86.1	70.2	85.6	69.2	84.7	68.2	94.8	73.5	93.4	74.2	91.5	72.1
29	84.8	68.0	84.8	65.1	83.5	64.5	95.5	77.1	94.5	76.3	92.7	74.7
30	73.1	67.3	76.4	64.9	76.2	63.6	92.1	75.2	90.0	75.1	88.7	72.7
31	82.1	68.7	81.0	69.5	81.4	65.6	86.9	71.2	79.8	72.5	79.5	70.5
AVG.	**85.8**	**67.9**	**86.3**	**67.3**	**86.5**	**66.7**	**87.8**	**69.9**	**86.9**	**69.8**	**85.7**	**68.8**

TABLE 3. DAILY RAINFALL (INCHES) AT OR NEAREST TEST LOCATIONS FOR THE 2018 DELAWARE CORN HYBRID VARIETY PERFORMANCE TRIALS

Date of Month	May			June			July			August		
	Georgetown	Dover	Townsend	Georgetown	Dover	Townsend	Georgetown	Dover	Townsend	Georgetown	Dover	Townsend
1	0.00	0.00	0.00	0.09	0.10	0.00	0.00	0.00	0.00	0.00	0.12	0.83
2	0.00	0.00	0.00	0.00	0.07	0.06	0.00	0.00	0.00	0.10	0.32	0.13
3	0.00	0.00	0.00	0.96	1.47	0.64	0.00	0.00	0.00	0.03	0.14	0.08
4	0.00	0.01	0.00	0.04	0.04	0.02	0.00	0.00	0.00	0.14	0.00	0.08
5	0.01	0.01	0.00	0.00	0.06	0.07	0.00	0.00	0.00	0.01	0.00	0.00
6	0.01	0.02	0.04	0.00	0.00	0.00	0.00	0.04	0.00	0.03	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
9	0.00	0.00	0.00	4.20	2.31	0.53	0.00	0.00	0.00	0.00	0.16	0.59
10	0.00	0.00	0.06	0.79	0.81	0.38	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.16	0.24	0.79	0.00	0.00	0.00	0.29	0.76	0.96
12	1.41	0.85	1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.01
13	0.69	0.21	0.18	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.86
14	1.41	0.07	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
15	0.26	0.95	1.31	0.00	0.00	0.00	0.00	0.04	0.13	0.00	0.00	0.00
16	0.40	0.36	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.11	0.72	0.81	0.00	0.00	0.00	0.00	0.97	0.24	0.00	0.00	0.00
18	2.96	0.77	1.07	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.52	0.00
19	1.19	1.14	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.07	0.08
20	0.01	0.16	0.50	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.05	0.01
21	0.00	0.00	0.00	0.00	0.00	0.05	1.89	1.89	1.74	0.61	0.07	0.04
22	0.48	0.25	0.24	0.52	0.23	0.43	0.03	0.04	0.57	0.01	0.33	0.53
23	0.00	0.00	0.00	0.02	0.01	0.01	0.05	0.4.0	0.10	0.00	0.00	0.00
24	0.00	0.00	0.00	0.01	0.01	0.01	0.37	0.65	0.31	0.00	0.01	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.88	1.89	0.66	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
27	1.16	1.19	0.38	0.00	0.00	0.00	0.00	0.14	1.14	0.00	0.00	0.00
28	0.10	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.02	0.05	0.01	0.00	0.00	0.00	0.43	0.01	0.01	0.00	0.00	0.00
31	0.01	0.15	0.17				0.04	0.10	0.00	0.66	2.47	0.84
Total	**10.23**	**6.91**	**7.16**	**6.82**	**5.43**	**3.07**	**3.74**	**6.17**	**4.90**	**2.06**	**5.62**	**5.41**

DELAWARE FIELD CORN PERFORMANCE TRIALS HYBRID ENTRIES

Brand	Hybrid	Trait	Relative maturity	Maturity group
Augusta	A4860	3220GT	110	Early
Augusta	A4858	3010GT	108	Early
Phoenix	5352 A4	Agrisure 3111 Artesian	109	Early
NK	NK0886-3000	ECB	108	Early
NK	N0968-3110	ECB, Broadlep	109	Early
ARMOR	X8103	PRO2	103	Early
AgVenture	AV7808YHB	Optimum Intrasect	108	Early
ARMOR	0805	PRO2	105	Early
ARMOR	X8105B	PRO2	105	Early
ARMOR	0887	PRO2	108	Early
Doebler's PA Hybrids	4417AM	HX1/YGCB/LL/RR2	104	Early
Doebler's PA Hybrids	4919AM	HX1/YGCB/LL/RR2	109	Early
Doebler's PA Hybrids	5018AM	HX1/YGCB/LL/RR2	110	Early
Local Seed	LC0877 VT2P	VT Double Pro	108	Early
AgVenture	AV5799AM	HX1/YGCB/LL/RR2	99	Early
DeKalb	**DKC62-20RIB (Check)**	GENSS	112	Early
Dyna-Gro	**D44VC36 (Check)**	VT Double Pro	104	Early
Augusta	A4463	VT2Pro	113	Early-Medium
Augusta	A4465	3110GT	115	Early-Medium
Augusta	A1166	VT2Pro	116	Early-Medium
Augusta	A1564	3010GT	114	Early-Medium
MorCorn	4319	VT2P	113	Early-Medium
MorCorn	4457	VT2P	114	Early-Medium
NK	NK1354-3110	Broadlep, ECB	113	Early-Medium
ARMOR	1118	PRO2	111	Early-Medium
ARMOR	A1227	PRO2	112	Early-Medium
ARMOR	A1447	PRO2	114	Early-Medium
Doebler's PA Hybrids	5018AM	HX1/YGCB/LL/RR2	110	Early-Medium
Doebler's PA Hybrids	5319AM	HX1/YGCB/LL/RR2	113	Early-Medium
Doebler's PA Hybrids	5518AM	HX1/YGCB/LL/RR2	115	Early-Medium
Local Seed	LC1289VT2P	VT Double Pro	112	Early-Medium
Local Seed	LC1487	Conventional	114	Early-Medium
AgVenture	AV7307AM	HX1/YGCB/LL/RR2	107	Early-Medium

AgVenture	AV7408AM	HX1/YGCB/LL/RR2	107	Early-Medium
AgVenture	AV7910AM	HX1/YGCB/LL/RR2	110	Early-Medium
AgVenture	AV8413R	AQUAmax, RR2	113	Early-Medium
AgVenture	AV8714VYHR	VYHR/AVBL/YGCB/HX1/LL/RR2	114	Early-Medium
DeKalb	**DKC62-20RIB (Check)**	GENSS	112	Early-Medium
Dyna-Gro	**D52VC91 (Check)**	VT Double Pro	112	Early-Medium
Augusta	A5065	3111GT	115	Medium
Phoenix	6507A3	Agrisure 3000GT	115	Medium
Doebler's PA Hybrids	5518AM	HX1/YGCB/LL/RR2	115	Medium
Doebler's PA Hybrids	5818AM	HX1/YGCB/LL/RR2	118	Medium
Local Seed	LC1577 VT2P	VT Double Pro	116	Medium
DeKalb	**DKC65-71RIB (Check)**	GENDGVT2P	115	Medium
Dyna-Gro	**D58VC65 (Check)**	VT Double Pro	118	Medium

SEED COMPANY CONTACT INFORMATION

Company	**Address**	**Phone**	**Web**
AgVenture	7300 NW 62nd Ave Johnston, IA 50131	515-535-0800	www.agventure.com
Armor Seed	2532 Alexander Drive, Suite B Jonebord, AR 72401	662-719-3157	www.armorseed.com
Augusta Seed	PO Box 899, Verona, VA 24482	540-886-6055	www.augustaseed.com
Doebler's PA Hybrids	1000 Commerce Pk Dr #106, Williamsport, PA	570-980-3906	www.doeblers.com
East Coast Seed	17741 Davis Rd Geogetown, DE 19947	302-856-7018	www.eastcoastseed.com
Local Seed	39 Seeds Lane Jersey Shore, PA 17740	570-753-5503	www.localseed.com
MorCorn	4725 Windward Concourse Suite 410 Alpharetta, GA 31047	478-957-9865	www.morecorn.com
Phoenix	201 E. John Carpenter Fwy, Suite 660 Irving, TX 75062	855-210-0569	www.phoenixcorn.com
Syngenta	4013 Faimount Pike, Signal Mountain, TN 37377	717-951-2730	www.syngenta-us.com

HYBRID GENETIC TRAITS AND DESCRIPTION

Trait name	Description
AcreMax	Refuge in the bag hybrid
AcreMax Above	Herculex® XTRA (HXX) Insect Protection and YieldGard® Corn Borer (YGCB) for above-ground protection
Agrisure Artesian	Water optimization technology
Agrisure®3000GT	Triple stack trait (Corn borer+corn rootworm + Inbred tolerance to glyphosate & glufosinate)
Agrisure Viptera 3111	Broad spectrum of lepidopteran corn pests (earworm, black cutworm, fall armyworm & Western bean cutworm
AM	Optimum AcreMax
BVR	Roundup Ready + Corn borer + Root worm
CB	Corn Borer
CL	Clearfield
GENSS	Above & below ground insect control (European corn borer & corn rootworm + tolerance to Roundup® & Liberty
GENVT3P	Genuity triple pro (corn earworm + European & Southern corn borers and fall armyworm + corn rootworm)
GENDGVT2P	Genuity® DroughtGard® with VT Double Pro
Genuity VT2pro RIB	Double-stacked (corn earworm + fall armyworm)
Genuity SmartStax RIB	Above & below ground insect control (Earworm + Fall armyworm + Northern corn rootworm + western bean cutworm + European corn borer)
GT/CB/LL	Triple stack trait (Glyphosate-resistant + corn borer + LibertyLink® herbicide)
HX	Herculex
HXT	Herculex XTRA
LL	Liberty Link
PL	YieldGuard Plus
PLRR	YieldGuard Plus + Roundup Ready
PRO2	Double-stacked corn (earworm and other ear-feeding insects)
RB	Roundup Ready + Corn borer
R	Roundup Ready Corn 2
RHXT	Roundup Ready + Liberty Link + Herculex XTRA
RR2/YGCB	Roundup Ready 2 + YieldGuard + Corn borer
RRRW	Roundup Ready + Root worm
SmartStax & GENSS	8 traits stacked - 6 for insect resistance (Bt) & 2 for herbicide (Roundup & Liberty)
Viptera 3111	Multi-pest control
VT2P RIB	Contains dual models of action (corn earworm, European & Southwestern corn borers & fall army warm)
VT3	YieldGard VT Triple (corn borer + root worm + glyphosate herbicide tolerance)
VYHR	Optimum Leptra
XRR	Roundup Ready
13V	YieldGuard + Corn borer + Root worm + Roundup Ready
3110GT	Glyphosate and glufosinate tolerance herbicides in addition to having protection from Western, Northern, Southern and Mexican rootworm and European and Southwestern corn borer.

Table 4. Dryland Corn Hybrid Performance Summary
Emerson Farms (New Castle County) Middletown, Delaware

Planted 5/8/2018 & Harvested October 2, Early-Medium Hybrids										Performance Ranking for				Pooled sites	
Brand	Hybrid	Yield Bu/A	% Moisture	Yield/ Moisture	Test Weight	Final Pop	% Stalk Lodging	% Root Lodging	% Relative Yield to Check Avg.	Middletown Dry land	Laurel Irrigated	Georgetown Irrigated	Marydel Irrigated	Yield Avg. Bu/A	Rank
Local Seed	LC1487	181.5	20.4	9.0	51.5	26250.0	1.0	1.0	113.2	1	15	11	4	201.6	6
AgVenture	AV8714VYHR	179.4	21.6	8.3	51.6	27250.0	2.8	0.0	111.9	2	4	16	8	201.8	5
ARMOR	A1447	175.8	21.5	8.2	53.5	25750.0	0.0	1.0	109.6	3	11	2	14	204.2	3
ARMOR	1118	172.0	21.2	8.2	54.1	27750.0	0.0	0.0	107.3	4	20	1	9	201.3	7
Doebler's PA Hybrids	5319AM	169.9	21.6	7.9	52.6	27250.0	1.0	1.0	106.0	5	13	18	10	194.5	12
Local Seed	LC1289VT2P	169.9	22.0	7.8	52.8	27000.0	1.0	1.0	106.0	6	3	7	20	199.1	9
DeKalb	DKC62-20RIB (**Check**)	169.5	22.9	7.5	51.4	27250.0	0.9	0.0	105.7	7	7	5	12	200.3	8
Augusta	A4465	166.5	22.6	7.5	52.4	27000.0	0.0	1.0	103.9	8	18	21	19	184.1	21
ARMOR	A1227	165.5	22.1	7.5	52.5	27750.0	1.8	0.9	103.2	9	10	10	21	194.2	14
AgVenture	AV7307AM	165.2	20.5	8.1	53.4	24500.0	0.0	1.1	103.1	10	17	17	18	190.6	16
Doebler's PA Hybrids	5518AM	163.6	22.5	7.3	51.8	25250.0	1.0	0.0	102.0	11	6	19	7	196.4	10
MorCorn	4319	163.5	24.0	6.9	52.1	25750.0	0.0	0.0	102.0	12	8	3	3	204.1	4
AgVenture	AV7408AM	163.1	20.1	8.1	53.6	27500.0	0.9	0.9	101.7	13	2	8	1	206.8	2
MorCorn	4457	162.0	22.1	7.3	53.4	26500.0	0.9	0.0	101.0	14	14	6	13	195.1	11
NK	NK1354-3110	160.2	21.2	7.6	53.3	26250.0	0.0	0.0	99.9	15	19	13	16	189.2	18
Augusta	A4463	157.1	21.0	7.5	53.2	27500.0	0.0	0.0	98.0	16	21	9	5	192.5	15
AgVenture	AV7910AM	156.8	20.6	7.7	51.8	26500.0	1.0	1.9	97.8	17	12	22	11	185.9	20
Augusta	A1166	154.8	23.3	6.7	50.3	27000.0	9.8	1.8	96.6	18	9	15	6	194.4	13
Doebler's PA Hybrids	5018AM	153.0	20.0	7.7	53.8	26500.0	1.9	3.9	95.4	19	1	4	2	208.5	1
Dyna-Gro	D52VC91 (**Check)**	151.2	23.3	6.5	52.4	25250.0	0.0	1.1	94.3	20	16	14	17	188.7	19
Augusta	A1564	151.1	20.0	7.6	50.2	27000.0	1.0	2.8	94.3	21	5	20	15	190.6	17
AgVenture	AV8413R	134.1	18.2	7.4	49.7	27500.0	1.8	0.0	83.6	22	22	12	22	179.0	22
	Check Avg.	160.3	23.1	7.0	51.9	26250.0	0.5	0.5							
	Test Avg.	163.0	21.5	7.6	52.3	26647.7	1.2	0.9							
	LSD (0.05)	NS	1.5	NS	1.5	NS	NS	NS							
	% C.V.	8.5	2.2	9.6	0.9	2.6	141.4	127.5							
	Check Avg. + LSD (0.05)	196.3													
NS = not statistically significant at a 5% probability level															

Table 5. Dryland Corn Hybrid Performance Summary
Emerson Farms (New Castle County) Middletown, Delaware

Planted 5/8/2018 & Harvested October 2, Medium Hybrids										Performance Ranking for				Pooled sites	
Brand	Hybrid	Yield Bu/A[1]	% Moisture	Yield/ Moisture	Test Weight	Final Pop	% Stalk Lodging	% Root Lodging	% Relative Yield to Check Avg.	Middletown Dry land	Laurel Irrigated	Georgetown Irrigated	Marydel Irrigated	Yield Avg. Bu/A	Rank
Dyna-Gro	**D58VC65 (Check)**	**175.6**	23.3	7.5	52.8	26375.0	1.8	1.4	105.2	1	3	5	1	204.4	2
Local Seed	**LC1577 VT2P**	**174.9**	22.3	7.9	53.2	26375.0	1.0	0.9	104.8	2	7	2	7	200.7	4
Doebler's PA Hybrids	**5518AM**	**168.0**	21.5	7.8	52.2	25625.0	2.9	1.5	100.7	3	2	3	2	203.6	3
Phoenix	**6507A3**	**163.4**	24.0	6.9	50.8	27875.0	2.3	5.4	97.9	4	1	1	5	208.0	1
DeKalb	**DKC65-71RIB (Check)**	**158.3**	22.4	7.1	52.4	26375.0	3.3	0.0	94.8	5	6	7	6	190.5	7
Doebler's PA Hybrids	5818AM	139.3	24.2	5.8	52.5	26500.0	1.4	5.7	83.5	6	4	6	3	193.5	5
Augusta	A5065	138.8	24.4	5.7	52.0	26750.0	2.8	5.6	83.1	7	5	4	4	193.4	6
	Check Avg.	166.9	22.8	7.3	52.6	26375.0	206.0	0.7							
	Test Avg.	159.7	23.1	6.9	52.3	26553.6	2.2	2.9							
	LSD (0.05)	22.4	0.8	1.0	0.8	NS	NS	4.3							
	% C.V.	9.4	2.2	9.4	0.9	3.1	88.6	89.2							
	Check Avg. + LSD (0.05)	189.3													
[1]The bold text and darker shading indicate that the yield of the hybrids is not statistically different from the top yielding hybrid															
NS = not statistically significant at a 5% probability level															

Table 6. Irrigated Corn Hybrid Performance Summary
Thomas Family Farms (Kent County) Marydel, Delaware

Planted 5/1/2018 & Harvested October 1, Early Hybrids										Performance Ranking for			Pooled sites	
Brand	**Hybrid**	**Yield Bu/A[1]**	**% Moisture**	**Yield/ Moisture**	**Test Weight**	**Final Pop**	**% Stalk Lodging**	**% Root Lodging**	**% Relative Yield to Check Avg.**	**Marydel Irrigated**	**Georgetown Irrigated**	**Laurel Irrigated**	**Yield Avg. Bu/A**	**Rank**
Doebler's PA Hybrids	**5018AM**	**250.4**	19.4	12.9	56.6	32875.0	0.0	0.0	112.7	1	4	2	210.2	2
AgVenture	**AV7808YHB**	**250.0**	19.8	12.7	55.1	32375.0	0.0	0.0	112.5	2	6	1	211.1	1
Local Seed	LC0877 VT2P	236.6	18.2	13.0	55.9	32500.0	1.9	0.8	106.5	3	14	8	191.3	9
DeKalb	DKC62-20RIB (**Check**)	235.9	20.2	11.7	56.5	32375.0	0.8	0.0	106.1	4	7	3	204.1	3
ARMOR	A0887	232.3	19.0	12.2	55.9	32375.0	3.5	0.4	104.5	5	2	10	194.5	7
NK	N0968-3110	230.6	18.4	12.6	54.7	32250.0	0.4	0.0	103.8	6	11	6	194.9	6
Doebler's PA Hybrids	4919AM	228.8	19.0	12.0	55.9	31000.0	0.0	0.0	103.0	7	5	4	198.3	4
Phoenix	5352 A4	227.5	20.6	11.0	55.5	32375.0	1.2	0.8	102.4	8	10	5	196.1	5
ARMOR	X8105B	227.1	18.3	12.4	57.1	32250.0	0.0	0.0	102.2	9	9	7	192.1	8
NK	NK0886-3010	222.6	19.0	11.8	57.1	30000.0	3.0	5.0	100.2	10	8	14	184.2	11
Augusta	A4860	222.5	19.3	11.6	55.5	32750.0	0.7	2.2	100.1	11	12	11	186.5	10
Doebler's PA Hybrids	4417AM	218.6	19.6	11.2	58.2	32125.0	0.8	1.6	98.4	12	1	17	183.4	13
AgVenture	AV5799AM	216.7	16.7	13.0	55.8	32125.0	1.2	0.4	97.5	13	17	16	169.3	17
Augusta	A4858	213.7	19.4	11.1	56.9	32000.0	2.3	23.2	96.2	14	13	9	184.1	12
ARMOR	0508	210.9	17.7	12.0	58.2	31625.0	0.8	0.0	94.9	15	16	12	173.6	16
Dyna-Gro	D44VC36 (**Check**)	208.5	17.7	11.8	57.8	32375.0	1.5	1.1	93.8	16	15	13	176.8	15
ARMOR	X8103	196.0	18.4	10.7	57.2	30500.0	0.0	0.0	88.2	17	3	15	178.3	14
	Check Avg.	222.2	19.0	11.7	57.2	32375.0	1.1	0.6						
	Test Avg.	225.2	18.9	12	56.5	31992.7	1.1	2.1						
	LSD (0.05)	12.7	0.9	1.0	0.8	1002.6	NS	8.2						
	% C.V.	3.8	3.1	5.6	0.8	1.9	131.4	92.1						
	Check Avg. + LSD (0.05)	234.9												

[1]The bold text and darker shading indicate that the yield of the hybrids is not statistically different from the top yielding hybrid

NS = not statistically significant at a 5% probability level

Table 7. Irrigated Corn Hybrid Performance Summary
Thomas Family Farms (Kent County) Marydel, Delaware

Planted 5/1/2018 & Harvested October 1, Early-Medium Hybrids										Performance Ranking for				Pooled sites	
Brand	Hybrid	Yield Bu/A[1]	% Moisture	Yield/ Moisture	Test Weight	Final Pop	% Stalk Lodging	% Root Lodging	% Relative Yield to Check Avg.	Marydel Irrigated	Georgetown Irrigated	Laurel Irrigated	Middletown Dry land	Yield Avg. Bu/A	Rank
AgVenture	**AV7408AM**	**250.6**	19.1	13.1	56.0	32375.0	0.4	0.0	108.6	1	8	2	13	206.8	2
Doebler's PA Hybrids	**5018AM**	**249.5**	19.0	13.1	56.0	32250.0	0.8	0.0	108.1	2	4	1	19	208.5	1
MorCorn	**4319**	**243.6**	20.9	11.7	56.1	30750.0	0.0	0.0	105.6	3	3	8	12	204.1	4
Local Seed	**LC1487**	**243.3**	20.2	12.0	53.7	32125.0	0.4	2.8	105.4	4	11	15	1	201.6	6
Augusta	**A4463**	**242.2**	20.4	11.9	56.8	32750.0	0.0	0.0	104.9	5	9	21	16	192.5	15
Augusta	A1166	238.8	20.1	11.9	54.0	32375.0	0.0	0.0	103.5	6	15	9	18	194.4	13
Doebler's PA Hybrids	5518AM	236.2	20.9	11.3	56.1	30250.0	0.0	0.4	102.3	7	19	6	11	196.4	10
AgVenture	AV8714VYHR	235.5	20.6	11.4	55.0	31875.0	0.4	0.0	102.0	8	16	4	2	201.8	5
ARMOR	1118	234.4	20.3	11.6	57.5	32375.0	0.4	0.0	101.6	9	1	20	4	201.3	7
Doebler's PA Hybrids	5319AM	234.3	20.8	11.3	57.5	32125.0	0.4	0.4	101.5	10	18	13	5	194.5	12
AgVenture	AV7910AM	234.2	20.6	11.4	55.6	32750.0	0.4	0.4	101.5	11	22	12	17	185.9	20
DeKalb	DKC62-20RIB (**Check**)	233.3	20.4	11.5	56.7	31875.0	0.4	0.0	101.1	12	5	7	7	200.3	8
MorCorn	4457	232.7	21.1	11.0	57.4	31250.0	0.4	0.0	100.8	13	6	14	14	195.1	11
ARMOR	A1447	231.9	20.9	11.1	57.4	31625.0	0.4	0.0	100.5	14	2	11	3	204.2	3
Augusta	A1564	229.2	18.0	12.8	51.9	32125.0	0.4	0.8	99.3	15	20	5	21	190.6	17
NK	NK1354-3110	228.9	20.3	11.3	55.2	30875.0	1.3	0.4	99.2	16	13	19	15	189.2	18
Dyna-Gro	**D52VC91 (Check)**	228.4	20.9	10.9	57.6	31125.0	0.0	0.0	99.0	17	14	16	20	188.7	19
AgVenture	AV7307AM	228.2	20.4	11.2	56.5	30250.0	1.7	0.0	98.9	18	17	17	10	190.6	16
Augusta	A4465	224.3	20.4	11.0	54.2	30875.0	0.0	0.4	97.2	19	21	18	8	184.1	21
Local Seed	LC1289VT2P	224.0	20.4	11.0	54.8	32375.0	0.0	0.0	97.1	20	7	3	6	199.1	9
ARMOR	A1227	222.6	20.2	11.0	54.6	32500.0	3.1	0.8	96.4	21	10	10	9	194.2	14
AgVenture	AV8413R	220.0	19.7	11.2	55.2	32500.0	0.8	0.4	95.3	22	12	22	22	179.0	22
	Check Avg.	230.8	20.6	11.2	57.2	31500.0	0.2	0.0							
	Test Avg.	233.9	20.2	11.6	55.7	31789.8	0.5	0.3							
	LSD (0.05)	10.7	0.5	0.7	0.6	1181.0	1.3	1.1							
	% C.V.	3.1	1.4	4.0	0.7	2.3	173.6	187.3							
	Check Avg. + LSD (0.05)	241.5													
[1]The bold text and darker shading indicate that the yield of the hybrids is not statistically different from the top yielding hybrid															
NS = not statistically significant at a 5% probability level															

Table 8. Irrigated Corn Hybrid Performance Summary
Thomas Family Farms (Kent County) Marydel, Delaware

Planted 5/1/2018 & Harvested October 1, Medium Hybrids										Performance Ranking for				Pooled sites	
Brand	**Hybrid**	**Yield Bu/A**	**% Moisture**	**Yield/ Moisture**	**Test Weight**	**Final Pop**	**% Stalk Lodging**	**% Root Lodging**	**% Relative Yield to Check Avg.**	**Marydel Irrigated**	**Georgetown Irrigated**	**Laurel Irrigated**	**Middletown Dry land**	**Yield Avg. Bu/A**	**Rank**
Dyna-Gro	D58VC65 **(Check)**	253.2	21.2	12.0	56.3	32250.0	0.0	0.0	103.8	1	5	3	1	204.4	2
Doebler's PA Hybrids	5518AM	251.5	20.9	12.1	56.3	31000.0	1.2	0.0	103.2	2	3	2	3	203.6	3
Doebler's PA Hybrids	5818AM	250.7	21.4	11.7	54.3	32000.0	2.3	0.4	102.8	3	6	4	6	193.5	5
Augusta	A5065	245.9	21.4	11.5	55.1	31000.0	0.0	0.8	100.8	4	4	5	7	193.4	6
Phoenix	6507A3	237.2	20.4	11.7	54.3	31875.0	1.6	7.5	97.3	5	1	1	4	208.0	1
DeKalb	DKC65-71RIB **(Check)**	234.4	19.8	12.6	54.5	32500.0	0.0	0.0	96.1	6	7	6	5	190.5	7
Local Seed	LC1577 VT2P	233.6	20.9	11.2	56.1	30375.0	0.0	0.0	95.8	7	2	7	2	200.7	4
	Check Avg.	243.8	20.5	12.3	55.4	32375.0	0.0	0.0							
	Test Avg.	243.8	20.9	11.8	55.3	31571.4	0.7	1.2							
	LSD (0.05)	NS	0.6	NS	0.7	1117.4	NS	NS							
	% C.V.	3.8	1.7	5.6	0.7	2.2	133.5	182.1							
	Check Avg. + LSD (0.05)	260.1													
NS = not statistically significant at a 5% probability level															

Table 9. Irrigated Corn Hybrid Performance Summary
Plum Creek Farms, LLC (Sussex County) Laurel, Delaware

Planted 4/30/2018 & Harvested September 17, Early Hybrids										Performance Ranking for			Pooled sites	
Brand	Hybrid	Yield Bu/A[1]	% Moisture	Yield/ Moisture	Test Weight	Final Pop	% Stalk Lodging	% Root Lodging	% Relative Yield to Check Avg.	Laurel Irrigated	Georgetown Irrigated	Marydel Irrigated	Yield Avg. Bu/A	Rank
AgVenture	**AV7808YHB**	**209.2**	22.1	9.5	55.7	31000.0	0.4	0.0	115.8	1	6	2	211.1	1
Doebler's PA Hybrids	**5018AM**	**204.0**	20.7	9.9	55.3	31625.0	0.9	0.0	113.0	2	4	1	210.2	2
DeKalb	**DKC62-20RIB (Check)**	**203.0**	21.5	9.4	56.8	31875.0	0.4	0.0	112.4	3	7	4	204.1	3
Doebler's PA Hybrids	4919AM	191.1	20.1	9.5	56.4	31625.0	1.6	0.0	105.8	4	5	7	198.3	4
Phoenix	5352 A4	189.7	21.5	8.8	54.9	32375.0	1.9	0.0	105.1	5	10	8	196.1	5
NK	N0968-3110	183.4	17.5	10.5	54.0	32750.0	0.0	0.0	101.6	6	11	6	194.9	6
ARMOR	X8105B	177.5	20.1	8.8	57.8	32250.0	0.0	0.0	98.3	7	9	9	192.1	8
Local Seed	LC0877 VT2P	172.4	19.7	8.8	55.8	32500.0	2.7	0.0	95.4	8	14	3	191.3	9
Augusta	A4858	171.8	17.4	9.9	57.6	32125.0	12.6	0.0	95.1	9	13	14	184.1	12
ARMOR	A0887	167.0	19.0	8.8	56.2	31375.0	0.8	0.0	92.5	10	2	5	194.5	7
Augusta	A4860	167.0	18.1	9.3	56.9	32625.0	20.0	0.0	92.5	11	12	11	186.5	10
ARMOR	0508	162.2	18.7	8.7	57.9	30500.0	1.6	0.0	89.8	12	16	15	173.6	16
Dyna-Gro	D44VC36 (**Check**)	158.2	18.6	8.6	57.0	31750.0	2.7	0.0	87.6	13	15	16	176.8	15
NK	NK0886-3010	157.4	17.3	9.1	57.0	30166.5	7.2	0.0	87.1	14	8	10	184.2	11
ARMOR	X8103	156.2	18.3	8.6	57.4	30000.0	1.2	0.0	86.5	15	3	17	178.3	14
AgVenture	AV5799AM	144.6	17.5	8.3	56.9	30250.0	18.9	0.0	80.1	16	17	13	169.3	17
Doebler's PA Hybrids	4417AM	143.3	18.5	7.7	56.9	32500.0	13.2	0.0	79.3	17	1	12	183.4	13
	Check Avg.	180.6	20.0	9.0	56.9	31812.5	1.6							
	Test Avg.	174.0	19.2	9.1	56.5	31605.4	5.1							
	LSD (0.05)	17.0	1.2	0.9	0.8	1520.1	7.9							
	% C.V.	6.4	4.1	6.1	0.9	2.9	118.9							
	Check Avg. + LSD (0.05)	197.6												

[1]The bold text and darker shading indicate that the yield of the hybrids is not statistically different from the top yielding hybrid

NS = not statistically significant at a 5% probability level

Table 10. Irrigated Corn Hybrid Performance Summary
Plum Creek Farms, LLC (Sussex County) Laurel, Delaware

Planted 4/30/2018 & Harvested September 17, Early-Medium Hybrids										Performance Ranking for				Pooled sites	
Brand	Hybrid	Yield Bu/A[1]	% Moisture	Yield/ Moisture	Test Weight	Final Pop	% Stalk Lodging	% Root Lodging	% Relative Yield to Check Avg.	Laurel Irrigated	Georgetown Irrigated	Marydel Irrigated	Middletown Dry land	Yield Avg. Bu/A	Rank
Doebler's PA Hybrids	**5018AM**	**231.7**	21.0	11.0	54.6	32500.0	0.0	0.0	114.7	1	4	2	19	208.5	1
AgVenture	**AV7408AM**	**224.7**	21.1	10.6	54.5	32375.0	0.0	0.0	111.3	2	8	1	13	206.8	2
Local Seed	LC1289VT2P	213.9	23.1	9.3	54.0	31875.0	0.0	0.0	105.9	3	7	20	6	199.1	9
AgVenture	AV8714VYHR	213.7	23.1	9.3	54.9	31250.0	0.0	0.0	105.8	4	16	8	2	201.8	5
Augusta	A1564	213.3	20.1	10.6	51.6	31500.0	0.4	0.0	105.6	5	20	15	21	190.6	17
Doebler's PA Hybrids	5518AM	210.3	22.9	9.2	53.9	31500.0	0.0	0.0	104.2	6	19	7	11	196.4	10
DeKalb	DKC62-20RIB (**Check**)	208.6	22.6	9.2	55.9	32750.0	0.0	0.0	103.3	7	5	12	7	200.3	8
MorCorn	4319	207.6	23.8	8.7	55.2	30500.0	0.0	0.0	102.8	8	3	3	12	204.1	4
Augusta	A1166	205.0	22.1	9.3	54.1	31000.0	0.0	0.0	101.5	9	15	6	18	194.4	13
ARMOR	A1227	201.9	22.1	9.1	54.9	31750.0	0.0	0.0	100.0	10	10	21	9	194.2	14
ARMOR	A1447	201.4	24.0	8.5	56.2	31125.0	0.4	0.0	99.7	11	2	14	3	204.2	3
AgVenture	AV7910AM	197.9	21.9	9.1	54.8	32250.0	0.0	0.0	98.0	12	22	11	17	185.9	20
Doebler's PA Hybrids	5319AM	197.7	21.1	9.4	57.5	31375.0	4.8	0.0	97.9	13	18	10	5	194.5	12
MorCorn	4457	196.8	23.2	8.5	56.1	30500.0	0.0	0.0	97.5	14	6	13	14	195.1	11
Local Seed	LC1487	195.4	20.1	9.7	53.2	32625.0	0.0	0.0	96.8	15	11	4	1	201.6	6
Dyna-Gro	D52VC91 (**Check**)	195.2	22.4	8.8	57.8	31750.0	0.8	0.0	96.7	16	14	17	20	188.7	19
AgVenture	AV7307AM	192.2	21.3	9.0	56.3	30500.0	3.6	0.0	95.2	17	17	18	10	190.6	16
Augusta	A4465	190.4	22.6	8.4	53.7	30875.0	0.4	0.0	94.3	18	21	19	8	184.1	21
NK	NK1354-3110	187.0	19.9	9.4	54.5	30625.0	1.6	0.0	92.6	19	13	16	15	189.2	18
ARMOR	1118	186.3	20.3	9.2	56.7	31250.0	0.0	0.0	92.3	20	1	9	4	201.3	7
Augusta	A4463	183.5	20.0	9.2	56.7	31500.0	0.8	0.0	90.9	21	9	5	16	192.5	15
AgVenture	AV8413R	180.5	18.9	9.6	54.8	31750.0	2.8	0.0	89.4	22	12	22	22	179.0	22
	Check Avg.	201.9	22.5	9.0	56.8	32250.0	0.4								
	Test Avg.	201.6	27.7	9.3	55.1	31505.0	0.7								
	LSD (0.05)	16.2	0.9	0.9	0.7	NS	2.5								
	% C.V.	5.4	2.4	6.5	0.8	2.8	150.6								
	Check Avg. + LSD (0.05)	218.1													

[1]The bold text and darker shading indicate that the yield of the hybrids is not statistically different from the top yielding hybrid

NS = not statistically significant at a 5% probability level

Table 11. Irrigated Corn Hybrid Performance Summary
Plum Creek Farms, LLC (Sussex County) Laurel, Delaware

Planted 4/30/2018 & Harvested September 17, Medium Hybrids										Performance Ranking for				Pooled sites	
Brand	**Hybrid**	**Yield Bu/A**	**% Moisture**	**Yield/ Moisture**	**Test Weight**	**Final Pop**	**% Stalk Lodging**	**% Root Lodging**	**% Relative Yield to Check Avg.**	**Laurel Irrigated**	**Georgetown Irrigated**	**Marydel Irrigated**	**Middletown Dry land**	**Yield Avg. Bu/A**	**Rank**
Phoenix	6507A3	228.1	20.9	10.9	51.7	32625.0	2.0	0.0	112.8	1	1	5	4	208.0	1
Doebler's PA Hybrids	5518AM	206.8	23.0	9.0	53.7	30750.0	0.8	0.0	102.2	2	3	2	3	203.6	3
Dyna-Gro	D58VC65 (**Check**)	206.2	25.1	8.2	54.6	31625.0	0.0	0.0	101.9	3	5	1	1	204.4	2
Doebler's PA Hybrids	5818AM	204.3	24.9	8.2	54.4	32125.0	0.0	0.0	101.0	4	6	3	6	193.5	5
Augusta	A5065	204.0	24.6	8.3	55.1	30375.0	0.0	0.0	100.8	5	4	4	7	193.4	6
DeKalb	DKC65-71RIB (**Check**)	198.4	22.4	8.9	54.0	32000.0	0.0	0.0	98.1	6	7	6	5	190.5	7
Local Seed	LC1577 VT2P	197.4	23.8	8.3	56.3	31750.0	0.4	0.0	97.6	7	2	7	2	200.7	4
	Check Avg.	202.3	23.7	8.6	54.3	31812.5	0.0								
	Test Avg.	206.5	23.5	8.8	54.2	31607.1	0.5								
	LSD (0.05)	NS	0.7	1.0	0.7	1076.3	NS								
	% C.V.	6.5	1.8	7.3	0.9	2.2	184.4								
	Check Avg. + LSD (0.05)	223.6													
NS = not statistically significant at a 5% probability level															

Table 12. Irrigated Corn Hybrid Performance Summary
Davis Farms (Sussex County) Georgetown, Delaware

Planted 5/2/2018 & Harvested September 20, Early Hybrids										Performance Ranking for			Pooled sites	
Brand	Hybrid	Yield Bu/A[1]	% Moisture	Yield/ Moisture	Test Weight	Final Pop	% Stalk Lodging	% Root Lodging	% Relative Yield to Check Avg.	Georgetown Irrigated	Laurel Irrigated	Marydel Irrigated	Yield Avg. Bu/A	Rank
Doebler's PA Hybrids	**4417AM**	**188.3**	20.7	9.1	56.8	28375.0	0.0	0.0	111.7	1	17	12	183.4	13
ARMOR	**A0887**	**184.2**	19.8	9.3	56.4	29125.0	0.8	0.0	109.3	2	10	5	194.5	7
ARMOR	**X8103**	**182.7**	20.1	9.1	56.2	29500.0	0.5	0.0	108.4	3	15	17	178.3	14
Doebler's PA Hybrids	**5018AM**	**176.3**	20.2	8.7	56.3	31500.0	0.0	0.0	104.6	4	2	1	210.2	2
Doebler's PA Hybrids	**4919AM**	**174.9**	19.8	8.8	56.4	29375.0	0.0	0.0	103.8	5	4	7	198.3	4
AgVenture	**AV7808YHB**	**174.1**	21.0	8.3	54.3	29125.0	0.5	0.0	103.3	6	1	2	211.1	1
DeKalb	**DKC62-20RIB (Check)**	**173.5**	20.8	8.3	55.4	28875.0	0.0	0.0	103.0	7	3	4	204.1	3
NK	**NK0886-3010**	**172.8**	20.0	8.6	56.2	28875.0	0.5	0.0	102.6	8	14	10	184.2	11
ARMOR	X8105B	171.6	19.7	8.7	56.8	32625.0	0.0	0.0	101.8	9	7	9	192.1	8
Phoenix	5352 A4	**171.2**	21.8	7.9	54.1	30250.0	0.4	0.0	101.6	10	5	8	196.1	5
NK	N0968-3110	170.6	19.3	8.8	52.3	31625.0	0.0	0.0	101.2	11	6	6	194.9	6
Augusta	A4860	**170.0**	20.1	8.5	53.2	30375.0	0.0	0.0	100.9	12	11	11	186.5	10
Augusta	A4858	**166.9**	18.9	8.9	56.0	32250.0	0.0	0.0	99.0	13	9	14	184.1	12
Local Seed	LC0877 VT2P	164.9	18.7	8.9	56.3	31500.0	0.0	0.0	97.9	14	8	3	191.3	9
Dyna-Gro	D44VC36 (**Check**)	163.6	18.0	9.1	57.5	30250.0	0.8	0.0	97.1	15	13	16	176.8	15
ARMOR	0508	147.7	18.7	7.9	57.0	31000.0	0.4	0.0	87.6	16	12	15	173.6	16
AgVenture	AV5799AM	146.5	19.7	7.4	56.4	31500.0	0.0	0.0	87.0	17	16	13	169.3	17
	Check Avg.	168.5	19.4	8.7	56.5	29562.5	0.4							
	Test Avg.	170.6	19.8	8.6	55.7	30360.3	0.2							
	LSD (0.05)	16.1	1.2	0.8	1.6	NS	NS							
	% C.V.	5.3	3.2	5.3	1.9	6.3	187.9							
	Check Avg. + LSD (0.05)	184.6												

[1]The bold text and darker shading indicate that the yield of the hybrids is not statistically different from the top yielding hybrid

NS = not statistically significant at a 5% probability level

Table 13. Irrigated Corn Hybrid Performance Summary
Davis Farms (Sussex County) Georgetown, Delaware

Planted 5/2/2018 & Harvested September 20, Early-Medium Hybrids										Performance Ranking for				Pooled sites	
Brand	Hybrid	Yield Bu/A[1]	% Moisture	Yield/ Moisture	Test Weight	Final Pop	% Stalk Lodging	% Root Lodging	% Relative Yield to Check Avg.	Georgetown Irrigated	Laurel Irrigated	Marydel Irrigated	Middletown Dry land	Yield Avg. Bu/A	Rank
ARMOR	**1118**	**212.7**	21.2	10.0	56.4	31125.0	0.0	0.0	115.0	1	20	9	4	201.3	7
ARMOR	**A1447**	**207.8**	22.6	9.2	56.2	27500.0	0.5	0.0	112.4	2	11	14	3	204.2	3
MorCorn	**4319**	**201.8**	22.5	9.0	54.2	30125.0	0.4	0.0	109.2	3	8	3	12	204.1	4
Doebler's PA Hybrids	**5018AM**	**199.8**	20.7	9.7	54.6	29750.0	0.0	0.0	108.1	4	1	2	19	208.5	1
DeKalb	DKC62-20RIB (**Check**)	189.9	21.0	9.0	55.1	31250.0	0.0	0.0	102.7	5	7	12	7	200.3	8
MorCorn	4457	189.2	22.9	8.3	56.0	29750.0	0.0	0.0	102.3	6	14	13	14	195.1	11
Local Seed	LC1289VT2P	188.7	23.0	8.2	54.0	30750.0	0.0	0.0	102.1	7	3	20	6	199.1	9
AgVenture	AV7408AM	188.7	20.0	9.4	54.3	30750.0	0.0	0.0	102.1	8	2	1	13	206.8	2
Augusta	A4463	187.3	19.7	9.5	57.1	31125.0	0.0	0.0	101.3	9	21	5	16	192.5	15
ARMOR	A1227	186.7	22.0	8.5	54.4	31375.0	0.0	0.0	101.0	10	10	21	9	194.2	14
Local Seed	LC1487	186.3	20.7	9.1	53.3	31750.0	0.0	0.0	100.7	11	15	4	1	201.6	6
AgVenture	AV8413R	181.5	20.2	9.0	54.0	30000.0	1.4	0.0	98.2	12	22	22	22	179.0	22
NK	NK1354-3110	180.7	19.9	9.1	53.5	29500.0	0.0	0.0	97.7	13	19	16	15	189.2	18
Dyna-Gro	D52VC91 **(Check)**	179.9	23.5	7.7	57.2	30625.0	0.0	0.0	97.3	14	16	17	20	188.7	19
Augusta	A1166	178.8	21.3	8.4	55.5	30875.0	0.0	0.0	96.7	15	9	6	18	194.4	13
AgVenture	AV8714VYHR	178.8	22.8	7.9	55.2	30750.0	0.0	0.0	96.7	16	4	8	2	201.8	5
AgVenture	AV7307AM	176.7	20.8	8.5	55.4	29375.0	0.0	0.0	95.6	17	17	18	10	190.6	16
Doebler's PA Hybrids	5319AM	176.1	21.5	8.2	56.5	28375.0	0.0	0.0	95.2	18	13	10	5	194.5	12
Doebler's PA Hybrids	5518AM	175.4	21.7	8.1	54.2	29875.0	0.9	0.0	94.9	19	6	7	11	196.4	10
Augusta	A1564	168.7	18.5	9.2	50.8	31750.0	0.0	0.0	91.2	20	5	15	21	190.6	17
Augusta	A4465	155.1	19.8	7.9	53.7	28750.0	0.5	0.0	83.9	21	18	19	8	184.1	21
AgVenture	AV7910AM	154.7	19.6	7.9	56.2	28625.0	0.4	0.0	83.7	22	12	11	17	185.9	20
	Check Avg.	184.9	22.2	8.4	56.1	30937.5	0.0								
	Test Avg.	183.9	21.2	8.7	54.9	30170.5	0.2								
	LSD (0.05)	17.5	1.0	0.9	1.3	NS	NS								
	% C.V.	5.7	2.7	6.4	1.6	8.1	185.9								
	Check Avg. + LSD (0.05)	190.6													

[1]The bold text and darker shading indicate that the yield of the hybrids is not statistically different from the top yielding hybrid

NS = not statistically significant at a 5% probability level

Table 14. Irrigated Corn Hybrid Performance Summary
Davis Farms (Sussex County) Georgetown, Delaware

Planted 5/2/2018 & Harvested September 20, Medium Hybrids										Performance Ranking for				Pooled sites	
Brand	Hybrid	Yield Bu/A[1]	% Moisture	Yield/ Moisture	Test Weight	Final Pop	% Stalk Lodging	% Root Lodging	% Relative Yield to Check Avg.	Georgetown Irrigated	Laurel Irrigated	Marydel Irrigated	Middletown Dry land	Yield Avg. Bu/A	Rank
Phoenix	**6507A3**	**203.2**	21.9	9.3	51.3	30750.0	0.0	0.0	115.0	1	1	5	4	208.0	1
Local Seed	**LC1577 VT2P**	**197.1**	24.6	8.0	54.8	30250.0	0.0	0.0	111.5	2	7	7	2	200.7	4
Doebler's PA Hybrids	**5518AM**	**188.0**	22.5	8.4	53.3	27125.0	0.0	0.0	106.4	3	2	2	3	203.6	3
Augusta	A5065	185.1	24.6	7.5	54.3	27500.0	0.0	0.0	104.7	4	5	4	7	193.4	6
Dyna-Gro	D58VC65 **(Check)**	182.5	25.1	7.3	54.0	29125.0	0.5	0.0	103.3	5	3	1	1	204.4	2
Doebler's PA Hybrids	5818AM	179.8	25.1	7.2	53.9	28750.0	0.0	0.0	101.8	6	4	3	6	193.5	5
DeKalb	DKC65-71RIB **(Check)**	170.8	20.9	8.2	53.7	29125.0	0.4	0.0	96.6	7	6	6	5	190.5	7
	Check Avg.	176.7	23.0	7.7	53.8	29125.0	0.4								
	Test Avg.	186.6	23.5	8	53.6	28946.4	0.1								
	LSD (0.05)	17.9	1	1	0.8	NS	NS								
	% C.V.	5.7	2.5	7.1	0.9	9.7	200								
	Check Avg. + LSD (0.05)	194.6													
[1]The bold text and darker shading indicate that the yield of the hybrids is not statistically different from the top yielding hybrid															
NS = not statistically significant at a 5% probability level															