

Ashtabula County Short-Season Corn Variety Test Plots

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Objective

To provide a source of objective information on the relative performance of short-season corn hybrids currently available to Ashtabula County farmers.

Background

Cooperator: Keith Palmer
Nearest town: Andover
Major soil type: Platea silt loam
Planting date: April 27, 2000
Row width: 30 inches
Harvest date: October 13, 2000
Average yield: 149 bu/A
Average moisture: 18.7%
Plot size: 4 rows x 1,150 ft.

Cooperator: Brian Forman
Nearest town: Geneva
Major soil type: Sheffield silt loam
Planting date: May 3, 2000
Row width: 36 inches
Harvest date: October 26, 2000
Average yield: 155 bu/A
Average moisture: 21.4%
Plot size: 4 rows x 775 ft.

Cooperator: Rick Humphries
Nearest town: Orwell
Major soil type: Sheffield silt loam
Planting date: May 1, 2000
Row width: 30 inches
Harvest date: October 23, 2000
Average yield: 116 bu/A
Average moisture: 18.6%
Plot size: 6 rows x 2,175 ft.

Cooperator: Lester Marrison
Nearest town: Jefferson
Major soil type: Sheffield silt loam
Planting date: May 5, 2000
Row width: 36 inches
Harvest date: October 21, 2000
Average yield: 134 bu/A
Average moisture: 19.2%
Plot size: 4 rows x 500 ft.

Cooperator: Bill Hurst
Nearest town: Dorset
Major soil type: Sheffield silt loam
Planting date: May 30, 2000
Row width: 30 inches
Harvest date: November 8, 2000
Average yield: 111 bu/A
Average moisture: 22.8%
Plot size: 12 rows x 725 ft.

Cooperator: Larry Woodard
Nearest town: Cherry Valley
Major soil type: Platea silt loam
Planting date: May 6, 2000
Row width: 34 inches
Harvest date: October 18, 2000
Average yield: 180 bu/A
Average moisture: 21.6%
Plot size: 4 rows x 1,000 ft.

Methods

This research project was designed to study the performance of short-season corn hybrids using six farms within the county as replicates. Hybrids submitted for evaluation were short-season hybrids with total growing degree days (GDD) required to reach physiological maturity to be less than 2,500 GDD. The specific characteristics that were analyzed were: yield, grain moisture at harvest, test weight, and gross return per bushel after corrections were made for drying costs and low test weights.

Hybrids were randomly planted in side-by-side strip plots at each of the six farm locations. Hybrids were planted with a commercial type planter. Fertilizer, herbicides, and insecticides were applied according to recommended cultural practices for obtaining optimum grain yields. If space permitted, each host farm was permitted to put additional varieties in its plot.

Results

Table 1. Hybrid Performance Across Farm Locations¹.

Hybrid/(Maturity)	Yield ² (bu/A)	Population (Plants/A)	Test Weight (lbs/bu)	Moisture (%)	Gross Return ³ (\$/A)
Pioneer 36B08 (102)	158.3 a	25,667	54.2 cd	22.2 ef	255.09
Pioneer 37M34 (99)	150.0 ab	26,250	55.3 bc	21.3 de	245.47
Novartis N45T5 (102)	147.5 ab	25,417	53.3 d	21.7 def	238.3
Croplan 345 (93)	146.8 abc	26,917	56.3 ab	20.8 cd	241.2
Pioneer 38T27 (97)	145.6 abc	25,917	55.3 bc	19.7 bc	242.56
Novartis N27M3 (91)	140.3 bc	26,750	56.8 a	18.1 a	233.79
Croplan 396 (100)	139.3 bc	26,917	51.7 e	22.7 f	218.24
Novartis N21V6 (87)	138.5 bc	26,750	56.5 ab	18.8 ab	231.26
Pioneer 38P05 (94)	138.3 bc	26,083	55.7 ab	19.3 b	231.81
Novartis 3030 Bt (95)	135.5 bc	25,917	55.3 bc	19.3 b	233.59
Croplan Max 007 (95)	132.6 cd	25,833	55.8 ab	19.8 de	220.49
Pioneer 3893 (89)	120.4 d	26,417	55.3 bc	19.9 bc	202.11
Average	141.1	26,242	55.1	20.3	231.68
LSD(0.05)	15	NS	1.26	1.1	

F for yield means = 2.7 and CV (yields) = 9.1%. Indicates relative performance of hybrids not affected by farm location.

Population F<1 and CV (populations) = 7.5%. Indicates the population counts on each farm were consistent across hybrids.

Test Weights F = 10.8 and CV (test weights) = 2.0%.

Moisture F = 13.1 and CV (moisture) = 4.8%.

¹ Means followed by the same letter are not significantly different at P = 0.05.

² Yields adjusted to 15.5% grain moisture.

³ Gross Return equals: \$1.75 per bushel less discounts of 2 cents per point of moisture over 15.5% and 1 (53 lb.), 3 (52 lb.) cents for test weight under 54 lbs.

Summary and Notes

All 12 corn hybrids in the trial yielded higher than the 10-year county average of 106 bushels per acre and the five-year average of 116 bushels per acre. The combined average of 141 bushels per acre was remarkable, given the cool and wet growing season for Ashtabula County, especially in the month of July.

Ashtabula County farms encounter fewer growing degree days than most of the rest of Ohio. The use of short-season hybrids potentially increases gross returns by reducing the cost of drying longer-season corns. Additionally, the shorter-season corn varieties usually can be harvested earlier in the fall when weather conditions are more favorable.

For additional information, contact:

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