Evaluation of Blue and Red Food-Grade Corns

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Objective

To compare the agronomic performance of blue corn hybrids, blue open pollinated corn, and red open pollinated corn with conventional (yellow dent) corn.

Background

Cooperator:	OARDC Western Branch	Cooperator:	OARDC NW Branch
Nearest Town:	South Charleston	Nearest Town:	Hoytville
Major Soil Type:	Kokomo Silt Loam	Major Soil Type:	Hoytville Silty Clay
Previous Crop:	Soybean	Previous Crop:	Soybean
Planting Date:	5/16/02	Planting Date:	5/29/02
Harvest Date:	10/17/02	Harvest Date:	10/27/02
Row Width:	30 inches	Row Width:	30 inches
Plot Length:	25 feet	Plot Length:	25 feet
Fertilizer (lbs):	220-40-40	Fertilizer (lbs):	220-40-40
Soil Test:	pH 5.9; P 122; K 364	Soil Test:	pH 5.2; P 106; K 647

Methods

Three blue corn hybrids, one open pollinated blue corn, one open pollinated red corn, and one yellow dent conventional corn were planted in a randomized complete block design with three replications. The plots were planted at two Ohio locations, OARDC Western Branch in west-central Ohio and OARDC Northwest Branch in northwestern Ohio. The plots were four rows 25 feet long, with the center two rows harvested. The blue and red corns were planted at 26,000 seeds per acre, and the conventional yellow dent corn was planted at 30,000 seeds per acre.

Results

Table 1. Agronomic Performance at Hoytville, Ohio, 2002.[a]

Brand/Hybrid	Yield (bu/A)	Moisture (%)	Final Stand (plants/A)	Lodging (%)	Emerg. (%)	Silking (days after Jan. 1)
Lfy2304B (Blue Hybrid)	39.6 b	21.0 a	26,167 cd	18.3 b	93.0 a	219 b
Blue Hybrid	41.7 b	21.2 a	28,500 b	19.0 b	95.3 a	218 b
Red (P)	15.1 c	15.4 b	18,333 e	79.0 a	66.3 c	224 a
Hopi Fedco Blue (OP)	24.6 c	14.8 b	25,700 d	59.3 a	88.7 b	218 b
Lfy2361B (Blue Hybrid)	40.4 b	20.8 a	27,333 bc	19.0 b	95.0 a	219 b
Pioneer 34B23 (Yellow Check)	82.7 a	20.9 a	31,833 a	12.7 b	94.7 a	217 b

LSD (0.05)	11.5	3	1,321	37.5	3.3	2

[a] Means in same column followed by same letter are not significantly different.

Table 2. Agronomic Performance at South Charleston, Ohio, 2002.[a]

Brand/Hybrid	Yield (bu/A)	Moisture (%)	Final Stand (plants/A)	Lodging (%)	Emerg. (%)	Silking (days after Jan. 1)
Lfy2304B (Blue Hybrid)	99.0 b	19.2 a	26,333 bc	33.0 c	94.3 ab	206 a
Blue Hybrid	89.5 b	19.9 a	24,167 cd	21.7 cd	81.3 cd	207 a
Red (OP)	25.8 c	20.6 a	12,433 e	70.0 b	43.7 e	207 a
Hopi Fedco Blue (OP)	47.6 c	14.4 b	22,367 d	98.0 a	75.7 d	206 a
Lfy2361B (Blue Hybrid)	111.8 b	17.1 b	29,633 a	40.0 c	97.3 a	206 a
Pioneer 34B23 (Yellow Check)	197.3 a	18.0 b	28,267 ab	6.0 d	85.7 bc	203 b
LSD (0.05)	22.7	2.2	3,202	18.8	9.4	1

[a] Means in same column followed by same letter are not significantly different.

Summary

Dry weather at the Northwestern Branch severely reduced yields of all corn in the area. The yields of all of the blue and red corns were significantly lower than the yellow dent check. Lodging among the blue and red corns was higher than the yellow dent check, with the open pollinated corns having the most severe lodging.

Producers who are interested in growing specialty color corns should seek out a buyer before the growing season begins to determine if a specific hybrid (or variety) should be grown and to determine what premiums are being paid to determine if the premiums will offset the lower yields. Using these results, a producer can expect a significant yield loss for these specialty corns.

Specialty color corns need to be grown a minimum of 600' away from normal yellow dent corn to minimize any cross pollination which may result in off-color grain.

For additional information, contact:

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