

Corn Response to Fungicide and Preharvest Desiccant, Carrington, 2008

Greg Endres and Joel Ransom

The conventional-till field trial was established at the NDSU Carrington Research Extension Center on a Heimdal Emrick loam soil with soybean as the previous crop. Experimental design was a randomized complete block with split plot arrangement [main plot=hybrids (2) and subplots=fungicide (2 trts) and desiccant (2 trts)] with four replications. Spring soil analysis indicated 8 ppm (med.) phosphorus, 164 ppm (high) potassium, 0.75 ppm (med.) zinc, 3.0% organic matter, and 6.2 pH. Pioneer '39D97' [79-day relative maturity (RM)] and DeKalb '38-92' (88-day RM) were planted at about 24,000 seeds/A in 8-row plots with 30 ft. depth and 30-inch row spacing on May 12. Best management practices were used for corn production. Headline at 6 fl oz/A + Preference (NIS) at 0.25% v/v was applied on August 8 with a tractor-mounted CO₂ sprayer with 015F110 flat-fan nozzles delivering 15 gal/A at 40-45 psi with 73° F, 71% relative humidity (RH), and 10 mph wind to both hybrids at VT (tassel) to R1 (silk) stages. Gramoxone Inteon (paraquat) at 32 fl oz/A + Preference (NIS) at 0.25% v/v was applied on October 2 with 57° F, 70% RH, and 7 mph wind to the 79-day RM hybrid and on October 14 with 44° F, 76% RH, and 12 mph wind to the 88-day RM hybrid at R6 (physiological maturity) stage. Visual evaluation of ear leaf disease measured as percent severity (average of 10 leaves/plot) was taken on October 2. The trial was harvested with a plot combine on November 4.

Seed yield and moisture were less with the early-maturing hybrid while test weight was greater compared to the late hybrid (table). Although ear leaf disease was low, the fungicide reduced disease and improved yield by 10.1 bushels compared to the untreated check. Seed yield tended to be greater and moisture content less with use of the desiccant compared to the untreated check. No statistically significant differences were present with factor interactions, with the exception of fungicide and no desiccant having lower disease (1.6%) compared to no fungicide and no desiccant (3.5%).



Corn response to preharvest desiccant, October, 2008.

Table. Corn response to fungicide and preharvest desiccant.

Treatment	Corn					
Name	Ear Leaf Disease	Seed Yield	Test Weight	Seed Moisture	Seed Protein	Seed Starch
	% severity	bu/A	lb/bu	————— % —————		
<u>Hybrid:</u>						
Pioneer 39D97 (79 day RM)	2.4	123.5	58.3	17.9	10.9	68.6
DeKalb 38-92 (88 day RM)	2.7	144.0	53.2	23.1	10.5	68.3
LSD (0.05)	NS	6.7	0.9	1.0	NS	NS
<u>Fungicide:</u>						
Headline	1.6	138.8	55.9	20.6	10.6	68.6
untreated check	3.5	128.7	55.6	20.4	10.8	68.3
LSD (0.05)	0.5	6.7	NS	NS	NS	NS
<u>Desiccant:</u>						
paraquat	x	136.8	55.6	20.1	10.6	68.4
untreated check	x	130.7	55.9	21.0	10.8	68.5
LSD (0.05)	x	NS	NS	NS	NS	NS
mean	2.5	133.3	55.8	20.5	10.7	0.5
CV (%)	34.1	9.4	2.1	7.2	5.3	0.8