

2008 Strip-Tillage Variety Trials at Orthman Research Farm

By: Mike Petersen, Agronomist

After a year all along the Central Platte Valley of clouds, more rain upon rain, significantly short on radiation and heat from the sun we finally finished corn harvest the 3rd day of December 2008. Some of the very best varieties available to growers were planted and grown at the Orthman Research Farm with companies like Dekalb, Pioneer, Hoegemeyer, Midwest Seeds, Croplan, NC+, NK and Mycogen all participating with four hybrids each.



We started out with the soil just right in early May, stripped tilled and had precision placed fertilizer with a Trimble RTK guided CNH 275MX tractor and Trimble/Orthman 2-bladed TruTrackerIV guided 1tRIPr for sub-inch accurate placement. In just days following, the same tractor and guidance was mounted with the CNH 1200-12 row planter on an Orthman 905 toolbar to put all 32 varieties in side-by-side plots. These plots were irrigated and fertigated through the pivot equally throughout the season.

The following table depicts the outcome after heavy rains, some drowning out of the young corn with a 7.5 inch rainstorm in one day and cool rainy days until mid-June. Just to the north of these variety trials we lost some of the tillage trials due to flooding and drowning out. Our final harvestable plant stands ranged from 25,900 plants per acre to 29,950 plants per acre after planting 31,500 seeds per acre.

Table 1. Yields from Strip-Till Variety Plots - Orthman Farm 2008
Planted 29500 to 31,200 seeds

Brand	Variety #	% Moisture	Yield	Harvest Population	Notes:
Hoegemeyer	5353	14.6	127.8	24.2K	Lodging15-25%, weed escapes, wind damage2-10%
	5773	15.6	141.0	26.1K	Lodging15-25%, weed escapes, wind damage2-10%
	7013	13.4	152.3	27.3K	Lodging15-25%, weed escapes, wind damage2-10%
	5983	15.6	135.2	27.6K	Flooding from heavy rain,drowned 15-25%
Mycogen	2T789	15.5	115.4	24.3K	Flooding from heavy rain,drowned 15-25%
	2T804	16	153.4	27.9K	Flooding from heavy rain,drowned 15-25%
	2T826	16	132.5	27.2K	Flooding from heavy rain,drowned 15-25%
	2M695	16.8	154.4	28.6K	Flooding from heavy rain,drowned 15-25%
NK	N78	15.9	148.5	26.5K	Flooding from heavy rain,drowned 15-25%
	N71	15.3	127.3	26.5K	Flooding from heavy rain,drowned 15-25%
	N72	16.2	147.2	26.7K	Wind damage(5-15%), lodging 18-30%
	N77	14.9	155.0	27.4K	Wind damage(5-15%), lodging 18-30%
Midwest	76485	15.8	157.2	26.5K	Wind damage(5-15%), lodging 18-30%
	76806	16.2	167.1	27.1K	Wind damage(5-15%), lodging 18-30%
	76996	16.1	158.0	27.0K	Wind damage(5-15%), lodging 18-30%
	83107Q	15.8	137.0	25.9K	Wind damage(5-15%), lodging 18-30%
NC+	4022	15.3	145.8	26.8K	Wind damage(5-15%), lodging 18-30%
	4517	15.5	144.7	27.4K	Wind damage(5-15%), lodging 18-30%
	5882	17.1	190.9	29.5K	Wind damage <10%, no flooding
	5403	15.3	177.5	28.9K	Wind damage <10%, no flooding

Brand	Variety #	% Moisture	Yield	Harvest Population	Notes:
Check -		15.3	176.8	29.5K	Wind damage <10%, no flooding
Dekalb	6342	16.8	178.4	28.6K	Wind damage <10%, no flooding
	6544	16	145.6	28.1K	Wind damage <10%, no flooding
	6479	17.1	150.4	28.9K	Wind damage <10%, no flooding
	6169	16.8	186.7	29.4K	Wind damage <10%, no flooding
DynaGro	57V21	16.2	150.1	28.7K	Wind damage <10%, no flooding
	57V05	16.9	174.3	29.6K	Wind damage <10%, no flooding
	57B94	17.6	166.6	28.9K	Wind damage <10%, no flooding
	57V77	15.4	150.2	27.8K	Wind damage <10%, no flooding
Pioneer	33T57	18.4	171.7	28.9K	Wind damage <10%, no flooding
	33D47	19.8	163.5	28.4K	Wind damage <10%, no flooding
	32B83	16.5	180.1	29.0K	Wind damage <10%, no flooding
	33H29	15.3	177.8	29.0K	Wind damage <10%, no flooding
Croplan	6886	16.4	174.4	29.3K	Wind damage <10%, no flooding
	6831	15.9	182.3	29.7K	Wind damage <10%, no flooding
	6425	15	188.5	29.7K	Wind damage <10%, no flooding
Check-		15.3	183.4	29.8K	Wind damage <10%, no flooding

Discussion of Results:

The growing season of 2008 near Lexington, Nebraska was wet (>29 inches of rain) during the months of May, June, July and August. Sunlight was lacking which caused some very limited corn growing conditions. The heat units were between 300-400 units short of the norm of 2900 at this location. The corn hybrids that were planted were all but one 110-115 relative maturity day length for maturity. With 200-300 Langley units short and only 2500-2600 heat units accumulated, corn tried to catch up in late September to finish and the days are shorter and nights so much more cooler; the corn crop of 2008 for many was just a good thing to be in the bin before Christmas.

With the corn finishing so late in September and early October, we realize the ear was robbing profusely from the stalk and ear shank to finish the kernel fill. Stalks became weakened and when a high wind of sustained 60mph hit the area for a couple of hours, the corn was snapping over up to 40% of the stand in places. Some of the corn was left in the field because the snouts on the corn heads could not get all the ears. Farmers were leaving 5 to 30 bushel/acre on the ground, that is drastic.

As you read the above table you can see Hoegemeyer, Mycogen and part of NK varieties were flooded and sustained some damage from the high winds which was reflected in the yields. They were what they were and that is what we can tell you. With the loss of the stand during the rains earlier and how the overland flow flooded through these plots, the study in that segment was unfortunate and then we had a flush of grassy weeds and that hurt yields also. The median yield was 136 bu/acre across the entries damaged and the corn varieties that did not experience the flooding and weed issues was an average of 170bu/acre. That is a 20% drop off.

If you would like other information from the 2008 Orthman Research Farm – please contact Justin Trout, Mark Griffith or Mike Petersen at 1.308.324.7515