

Capture[®] LFR in Combination with CRW Trait Technologies - 2012 Clay Center, NE

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Background information pertaining to corn rootworm experiments conducted at Clay Center, NE during 2012.

AGRONOMIC:

Row Spacing:	30 inches
Row Orientation:	North-South
Planting Date:	April 26, 2012
Planter:	4-row Kinze planter with finger pickup units
Planting Depth:	2 inches
Previous Crop:	Late planted corn and pumpkins
Soil Information:	Crete silt loam
Herbicides Applied:	Broadcasted: Lexar @ 3 qt/acre, RoundUp WeatherMax @ 24 fl oz/acre and AMS @ 17 lbs/100 gal solution on April 27, 2012. Broadcasted: RoundUp PowerMax @ 26 fl oz/acre and AMS @ 17 lbs/100 gal solution on May 15, 2012 to remove volunteer corn.
Fertilizer Applied:	220 lbs nitrogen applied as liquid 32% N fertilizer on March 28, 2012. 5 GPA of 10-34-0 starter fertilizer applied in furrow prior to planting.

DATA COLLECTION:

- Early Plant Populations: The total number of plants and late emerging plants in the center two harvest rows of each plot was recorded on May 14, 2012. Corn growth stage was V1.
- Pre-Harvest Plant Populations: The total number of plants with harvestable ears in the center two harvest rows of each plot was recorded on September 17, 2012.
- Harvest Evaluations: Plots were machine harvested on September 25, 2012. Percent moisture and lbs of grain were recorded and converted to 56 lbs/bu @ 15.5% moisture to evaluate yield.

ENTOMOLOGICAL DATA:

- Species Present: Western corn rootworm, *Diabrotica virgifera virgifera* LeConte.
- CRW Egg Hatch: Initial hatch approximately on May 8, 2012.
- Dead Plant Counts: The total number of dead plants in the center two harvest rows of each plot due to larval corn rootworm feeding was recorded on June 27, 2012.
- Root Lodged Plants: The total number of root lodged plants in the center two harvest rows of each plot was recorded on June 27 and September 17, 2012.
- Root Injury Ratings: Five plants per plot were dug and rated using the Iowa 0-3 root injury rating scale on July 5, 2012.

EXPERIMENTAL DESIGN:

- Design: Randomized complete block; replicated six times.
- Plot Size: 4 rows x ~ 45 ft long
- Statistical Analyses: PROC MIXED, with mean separation using the differences of least square means (MIXED; p|t|>0.05).

ENVIRONMENTAL:

- Conditions at planting:
- Wind direction and speed: SE @ 7-10 mph
- Soil surface condition: Excellent
- Subsoil moisture: Excellent

SEASONAL RECORD OF RAINFALL: (April 1 – September 30)

<u>Daily</u>	<u>Amount (Inches)</u>	<u>Daily</u>	<u>Amount (Inches)</u>
April 3	0.35	June 16	0.35
April 12	0.20	June 20	0.65
April 15	1.35	June 23	0.85
April 28	0.30	July 9	1.00
May 1	0.25	July 18	0.10
May 3	2.75	July 30	0.95
May 20	0.25	August 2	0.45
May 26	1.10	August 4	0.45
May 30	0.55	August 25	1.10
June 1	0.10	Sept. 13	<u>0.55</u>
June 15	1.40	Total	15.05

<u>Monthly</u>	<u>Total (Inches)</u>	<u>Monthly</u>	<u>Total (Inches)</u>
April	2.20	July	2.05
May	4.90	August	2.00
June	3.35	September	<u>0.55</u>
		Total	15.05

SEASONAL RECORD OF IRRIGATION:

<u>Daily</u>	<u>Amount (Inches)</u>
May 24	0.33
June 14	1.24
July 2	1.55
July 6	1.56
July 20	1.52
July 25	1.53
August 8	1.53
August 17	<u>1.56</u>
Total	10.82

<u>Monthly</u>	<u>Total (Inches)</u>
May	0.33
June	1.24
July	6.16
August	<u>3.09</u>
Total	10.82

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Insect Traits ¹	Insecticide Product ²	Yield ³ (bu/acre) (Sept. 25)	Total No. of Plants w/ Harvestable Ears ³ (Sept. 17)	0-3 Scale Root Injury Ratings ³ (July 5)	Total No. of Dead Plants ³ (June 27)	Total No. of Root Lodged Plants ³ (Sept. 17)	(June 27)	PPA ³ (May 14)	Total No. of Late Emerging Plants ³ (May 14)
AcreMax [®] 1	Capture [®] LFR	220.0 a	128.5 a	0.36 ab	0.3 a	1.0 a	0.8 a	25,661 ab	2.3 a
AcreMax [®] 1	-----	216.3 a	128.2 a	0.41 b	0.0 a	3.7 a	11.0 a	25,695 ab	2.2 a
Herculex [®] XTRA	Capture [®] LFR	207.8 a	121.0 a	0.10 a	0.2 a	0.3 a	0.5 a	24,760 bc	6.0 c
Herculex [®] XTRA	-----	207.0 a	120.5 a	0.18 ab	0.0 a	0.2 a	0.0 a	24,092 c	4.8 bc
Herculex [®] I	-----	162.3 b	101.8 b	2.47 c	16.3 b	82.7 b	112.7 b	25,893 a	2.7 ab
<i>Treatment Probability</i>		<i>0.0003</i>	<i>0.0003</i>	<i><0.0001</i>	<i><0.0001</i>	<i><0.0001</i>	<i><0.0001</i>	<i>0.0028</i>	<i>0.0078</i>

¹The corn hybrids evaluated are from the same DuPont Pioneer genetic family. P1395XR corn hybrid with Herculex[®] XTRA genetic traits; P1395AM1 with AcreMax[®] 1 technology (contains 90% P1395XR corn hybrid with Herculex[®] XTRA genetic traits and 10% P1395HR corn hybrid with Herculex[®] I genetic traits); and P1395HR corn hybrid with Herculex[®] I genetic traits.

²Capture[®] LFR was applied in-furrow at a rate of 0.49 fl oz/1000 row ft in a 5 GPA water solution.

³Means in column followed by the same lowercase letter are not statistically different using the differences of least square means (MIXED; p|t|>0.05).