

# EVALUATION OF PLANTING TIME INSECTICIDE FORMULATIONS AND SEED TREATMENTS FOR LARVAL CORN ROOTWORM CONTROL, 2017

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Background information pertaining to above experiments conducted near Harvard, NE, 2017

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## AGRONOMIC:

Row Spacing:	30 inches
Row Orientation:	North-South
Planting Date:	April 20, 2017
Planter:	2-row JD 7100 Maximerge planter with finger pickup units
Hybrid (Traits):	Munson 7400VT2P
Planting Depth:	2½ inches
Target Seeding Rate:	32,100 seeds per acre
Previous Crop:	Late planted corn and pumpkins
Soil Information:	<i>Soil type:</i> Crete silt loam <i>Soil Drainage:</i> Good <i>Soil Texture:</i> % Sand: 15, % Silt: 56, % Clay: 29 <i>Soil pH:</i> 6.5 <i>% Organic Matter:</i> 3.0 <i>Sum of Cations:</i> 18.5 me/100g <i>Tillage type:</i> Reduced, planted into established ridge/row.
Insecticide Applications:	<u>Liquid Products-</u> Liquid formulations were directed into the open seed furrow in front of the press wheels via a 5 GPA rate of water solution at planting.  <u>Granular Products-</u> Insecticide granules were applied via the SmartBox application system and directed into the open seed furrow in front of the press wheels.  <u>Seed Treatments-</u> Seed-applied insecticides were applied commercially.
Herbicides Applied:	<i>Broadcasted:</i> Acuron @ 2.0 Qt/A and RoundUp PowerMax @ 40 fl oz/A on May 5, 2017. RoundUp PowerMax @ 26 fl oz/A and Atrazine 4L @ 1.5 Qt/A on May 30, 2017. RoundUp PowerMax @ 26 fl oz/A on June 12, 2017 to control volunteer corn.

Fertilizer Applied: 100 lbs 11-52-0 fertilizer broadcast on February 9, 2017.  
200 lbs nitrogen/A applied in the form of anhydrous ammonia April 2017.

### **EXPERIMENTAL DESIGN:**

Design: Randomized complete block; replicated four times  
Plot Size: 4 rows x 68-76 ft length

### **ENVIRONMENTAL:**

Conditions at planting:

Soil Temperature @ 4": 52° F @ 12PM

Wind direction and speed: NE @ 7-10 mph

Soil surface condition: Excellent

Subsoil moisture: Excellent

### **DATA COLLECTION:**

Plant Populations: The total number of corn plants in the center two rows of each plot was recorded on June 1, 2017 and converted to plants per acre (PPA).

Extended Leaf Heights: The extended leaf height (inches) of twenty random plants from the center two rows in each plot was recorded on June 20, 2017.

Harvest Evaluations: Plots were machine harvested on October 17, 2017. Pounds of grain and % moisture levels were recorded and converted to bushels per acre at 56 lbs/bu and 15.5% moisture.

### **ENTOMOLOGICAL DATA:**

Species present: Natural infestation of western corn rootworm, *Diabrotica virgifera virgifera* LeConte.

Egg Hatch: Initial egg hatch confirmed on May 31, 2017.

Days From Planting To:  
Initial Rootworm Egg Hatch 41 days

Adult Emergence: Initial adult emergence witnessed on June 28, 2017.

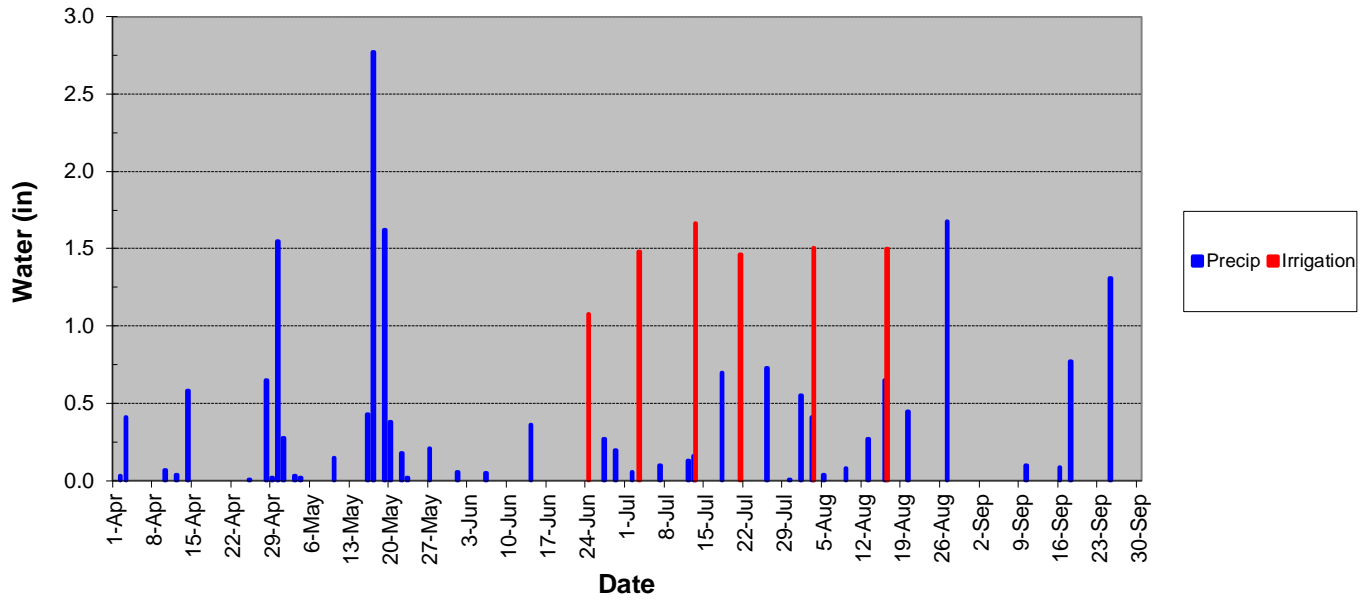
Root Lodging, Dead Plant,  
& Broken Plant Evaluations: The total number of root lodged and dead plants due to larval corn rootworm feeding in the center two rows of each plot was recorded on June 30, 2017.

Root Injury Ratings: Five plants per plot (3 from row 1 and 2 from row 4) were dug and rated using the Iowa 0-3 root injury rating scale on July 11, 2017.

## Apr. 1 - Sept. 30 Growing Season Rainfall & Irrigation

SCAL HOBO Weather Station

(18.71 in. rain - 94% of normal and 8.69 in. irrigation)



Month	HOBO Weather Station		
	2017 Rainfall	30-yr Norm	%Norm
April	3.39	2.53	134
May	6.09	4.41	138
June	0.94	3.90	24
July	1.89	3.60	53
Aug	4.13	3.20	129
Sept	2.27	2.36	96
<b>Total&gt;&gt;</b>	<b>18.71</b>	<b>20.00</b>	<b>93.6</b>

**EVALUATION OF PLANTING TIME INSECTICIDE FORMULATIONS AND SEED TREATMENTS  
FOR LARVAL CORN ROOTWORM CONTROL, 2017**

<b>Insecticide Product</b>	<b>Rate of Product (/acre)</b>	<b>Rate of Poncho ST (mg/k)</b>	<b>Yield<sup>1</sup> (bu/acre)</b>	<b>Iowa 0-3 Root Ratings<sup>1</sup></b>	<b>% Root Lodging<sup>1</sup></b>	<b>Total No. of Dead Plants<sup>2</sup></b>	<b>Extended Leaf Height<sup>2</sup> (inches)</b>	<b>PPA<sup>2</sup></b>
-----	-----	1.25	222.8 a	1.83 b	49.6 bc	0.3	36.5	32,885
V-10395	12 fl oz	----	221.8 a	1.86 b	23.8 ab	0.0	37.6	32,292
V-10395	8 fl oz	----	214.2 ab	2.14 bc	27.3 ab	0.3	37.1	32,777
Force 3G	5 oz/1000 ft	----	208.9 ab	0.87 a	3.4 a	0.0	36.7	31,964
Aztec 4.67G	3 oz/1000 ft	----	208.8 ab	0.75 a	11.4 a	1.3	35.6	32,538
-----	-----	0.50	205.0 ab	2.57 cd	70.5 cd	0.5	36.6	32,373
Capture LFR	16 fl oz	----	196.0 bc	2.19 bcd	78.7 d	0.3	36.3	32,265
Untreated Check	-----	----	178.6 c	2.62 d	88.4 d	0.8	35.6	31,738
<i>Treatment Probability</i>			<i>0.0145</i>	<i>&lt;0.0001</i>	<i>&lt;0.0001</i>	<i>0.4149</i>	<i>0.2383</i>	<i>0.2859</i>

<sup>1</sup>Means in column followed by the same lowercase letter are not statistically different using the differences of least square means (MIXED; p|t|>0.05).

<sup>2</sup>Means in column are not statistically different using the differences of least square means (MIXED; p|t|>0.05).