

EVALUATION OF LIQUID AND GRANULAR INSECTICIDE FORMULATIONS AT PLANTING FOR LARVAL CORN ROOTWORM CONTROL, 2017B

UNL – South Central Agricultural Laboratory

Terry A DeVries, University of Nebraska, South Central Ag Lab

Robert J Wright, Dept. Of Entomology, University of Nebraska-Lincoln, Lincoln NE 68583-0816, rwright2@unl.edu

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

AGRONOMIC:

Row Spacing:	30 inches
Row Orientation:	North-South
Planting Date:	May 8, 2017
Planter:	2-row John Deere 7100 Maximerge planter with finger pickup units
Hybrid (Traits):	Dekalb DKC60-69RIB (VT2PRIB)
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.
Herbicides Applied:	<i>Broadcasted:</i> Acuron @ 2.0 Qt/A and RoundUp PowerMax @ 40 fl oz/A on May 12, 2017. RoundUp PowerMax @ 26 fl oz/A and Atrazine 4L @ 1.5 Qt/A on June 5, 2017.
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 8, 2017.

EXPERIMENTAL DESIGN:

Design: Randomized complete block; replicated four times
Plot Size: 4 rows x 69-72 ft length

ENVIRONMENTAL:

Conditions at planting:

Wind direction and speed: SSW @ 11-14 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 22, 2017.

Harvest Evaluations: Plots were machine harvested on October 18, 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 corn rootworm egg hatch confirmed on May 31, 2017.

Days From Planting To:
Initial Rootworm Egg Hatch 23 days

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

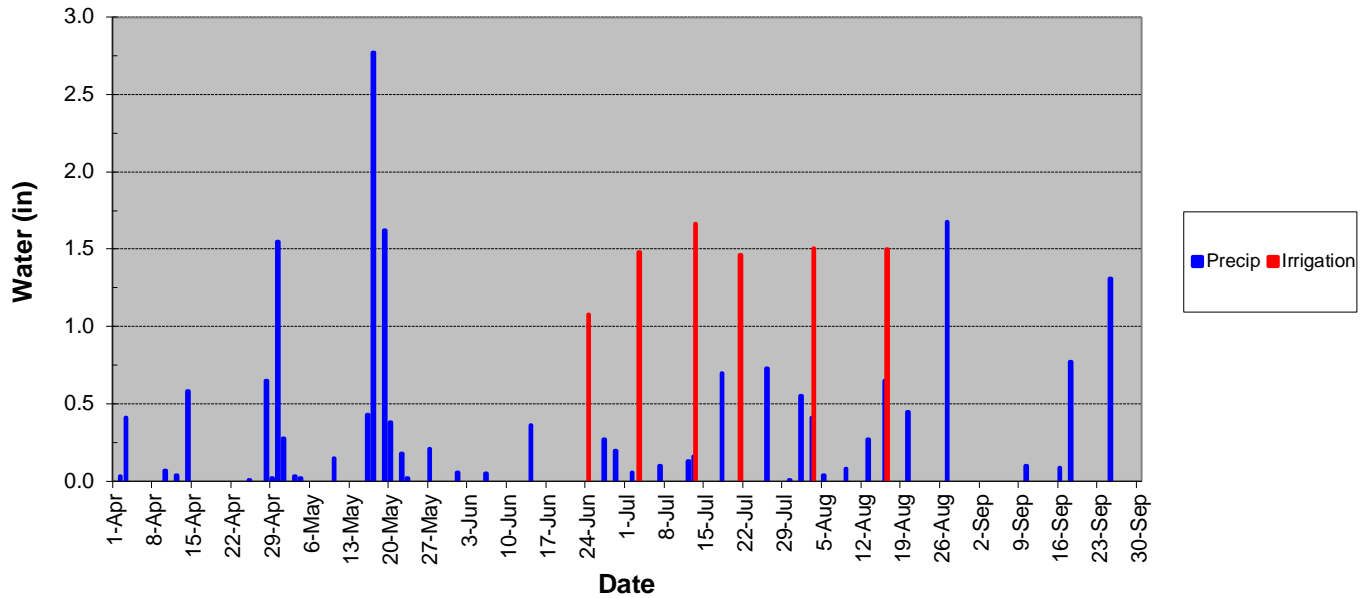
Root Lodging & Dead Plant Evaluations: The total number of root lodged and dead plants due to larval corn rootworm feeding in the center two rows of each plot was recorded on July 5, 2017. No dead plants were recorded at time of evaluation.

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 12, 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)



HOBO Weather Station			
Month	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
Total>>	18.71	20.00	93.6

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Insecticide Product	Rate of Product	Yield² (bu/acre)	Iowa 0-3 Root Ratings²	% Root Lodging¹	Extended Leaf Height² (inches)	PPA²
Capture LFR	8.5 fl oz/acre	256.9	0.84	0.4 a	34.6	32,123
Force 3G	5 oz/1000 row ft	256.0	0.58	0.3 a	33.8	32,536
Force EVO	10 fl oz/acre	250.2	0.66	0.2 a	33.6	31,827
Aztec 4.67G	3 oz/1000 row ft	247.6	0.64	0.3 a	33.5	32,412
Untreated Check	-----	243.6	1.39	3.0 b	34.4	31,980
<i>Treatment Probability</i>		<i>0.1123</i>	<i>0.0555</i>	<i>0.0029</i>	<i>0.9273</i>	<i>0.0893</i>

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

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