EVALUATION OF SEED TREATMENTS AND LIQUID INSECTICIDE FORMULATIONS AT PLANTING IN COMBINATION WITH A CORN ROOTWORM-TRAITED CORN HYBRID FOR LARVAL CORN ROOTWORM CONTROL, 2017

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

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 7322VT3P
Planting Depth:	2½ inches
Target Seeding Rate:	27,800 seeds per acre
Previous Crop:	Late planted corn and pumpkins
Soil Information:	*Soil type*: Crete silt loam *Soil Drainage*: Good *Soil Texture*: *% Sand*: 15, *% Silt*: 56, *% Clay*: 29 *Soil pH*: 6.5 *% Organic Matter*: 3.0 *Sum of Cations*: 18.5 me/100g *Tillage type*: Reduced, planted into established ridge/row.
Insecticide Applications:	Liquid Products- 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. Seed Treatments- Seed-applied insecticides were applied commercially.
Herbicides Applied:	*Broadcasted*: 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 69-70 ft length

ENVIRONMENTAL:

Conditions at planting:

Soil Temperature @ 4": 52^{o} F @ 12PM

Wind direction and speed: NE @ 7-10 mph

Soil surface condition: Excellent

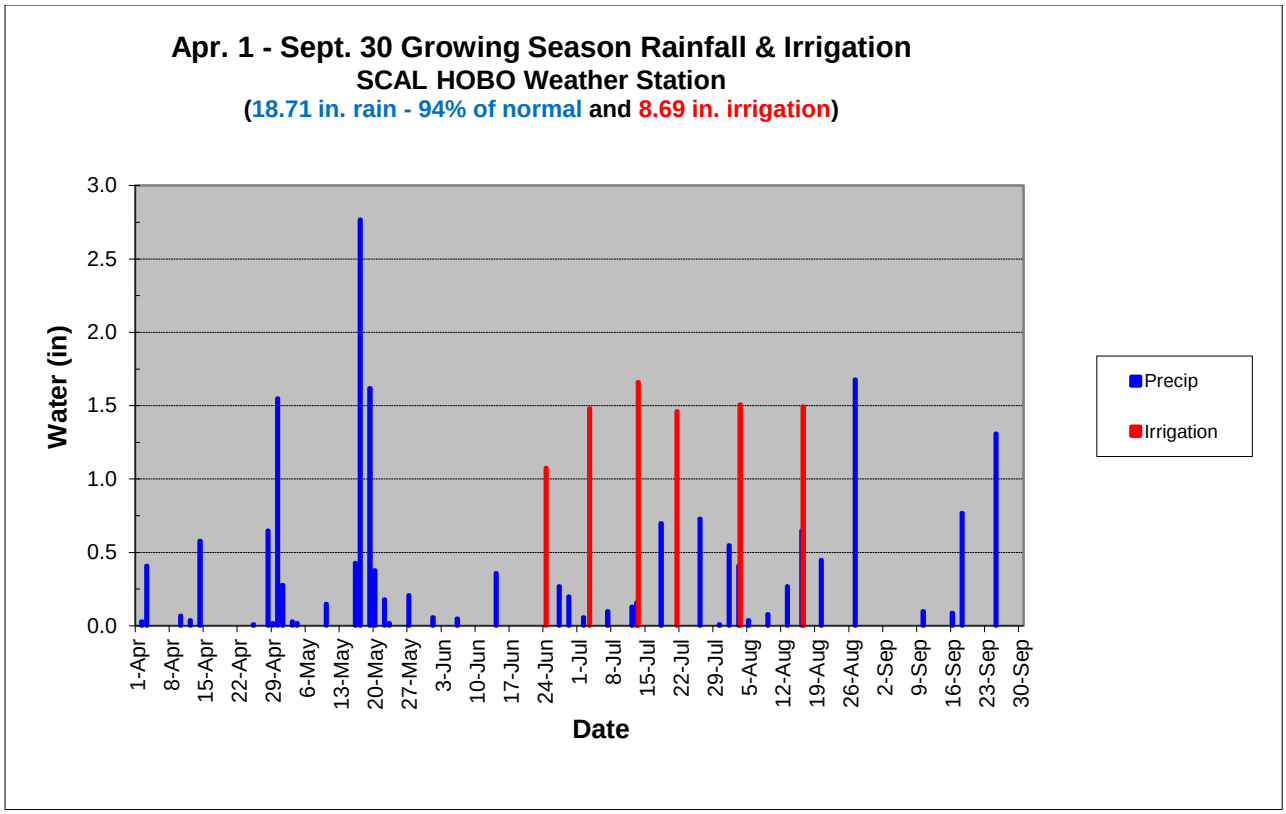
Subsoil moisture: Excellent

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 July 5, 2017. No root lodged or dead plants were present at evaluation. In addition, the total number of broken plants in the center two rows of each plot (wind event on July 4) were recorded on July 5 and converted to percentage broken plants.
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.



Month	HOBO Weatherstation 2017 Precip	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 (/acre)	Poncho Seed Trt (mg/k)	Yield[1] (bu/acre)	Iowa 0-3 Root Ratings[1]	% Broken Plants[1]	Extended Leaf Height[1] (inches)	PPA[1]
Capture LFR	16 fl oz	1.25	251.5	0.11	3.2	40.5	27,685
V-10395	12 fl oz	0.50	249.6	0.10	2.6	40.9	27,678
V-10395	8 fl oz	1.25	249.2	0.12	2.6	39.4	27,458
Untreated Check	---------	1.25	252.7	0.21	2.3	39.9	27,560
	Treatment Probability		***0.8343***	***0.2286***	***0.9084***	***0.0542***	***0.9525***

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