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**CORN:** *Zea mays* L. 'Pioneer P0157R'

# EVALUATION OF FOLIAR APPLIED INSECTICIDES FOR CONTROL OF ADULT CORN ROOTWORM IN CORN, 2015A

**Terry A. DeVries**

South Central Agricultural Laboratory

University of Nebraska-Lincoln

202 W. Fairfield St., P.O. Box 66

Clay Center, NE 68933

Phone: (402) 762-3536

Fax: (402) 762-3017

Email: tdevries1@unl.edu

**Robert J. Wright**

Department of Entomology

University of Nebraska-Lincoln

213 Entomology Hall

Lincoln NE 68583-0816

Email: rwright2@unl.edu

Western corn rootworm (WCR): *Diabrotica virgifera virgifera* LeConte

Southern corn rootworm (SCR): *Diabrotica undecimpunctata howardi* Barber

The efficacy of foliar applied insecticides was evaluated against adult corn rootworm (CRW) populations in field corn near Clay Center, NE during 2015. Adult CRW populations consisted of > 95% WCR and < 5% SCR. Experimental design was a RCB with four replicates. Plot size was 8 rows x 30 ft length with 30-inch row spacing. 'Pioneer P0157R' corn hybrid was planted on 28 May with a 4-row JD 7300 Maximerge vacuum planter. Target seeding rate was 32,100 seeds per acre. Initial CRW egg hatch was confirmed on Jun 08. Adult CRW emergence was first witnessed on Jul 10. Pre-treatment CRW populations averaged 1-3 adults per primary ear on July 27. Foliar applied insecticide treatments were broadcast over the plant canopy in a 15 GPA water solution via 20-inch nozzle spacing @ 30 psi on July 27. Plant growth stage was R1. The total number of adult CRW was recorded on five primary corn ears per plot 3DAT (Jul 30), 7 DAT (Aug 03), 14 DAT (Aug 10), and 21DAT (Aug 17). Phytotoxicity was not observed in any of the treatments 3DAT or 7DAT. Data were analyzed by PROC MIXED with mean separation using differences of least square means (P = 0.05).

Adult CRW populations were low to moderate throughout the duration of the trial. All treatments significantly reduced adult CRW populations 3DAT and 7DAT compared to the untreated check.

This research was supported by industry gifts of pesticide and research funding.

| Treatment[a]/ Formulation | Rate-amt form/acre | Avg. No. of Adult CRW/Primary Ear | | | |
|---|---|---|---|---|---|
| | | 3DAT[b] | 7DAT[b] | 14DAT[c] | 21DAT[c] |
| Steward EC | 6 fl oz | 0.05 a | 0.45 a | 0.25 | 0.10 |
| Warrior II | 1.92 fl oz | 0.15 a | 0.30 a | 0.25 | 0.15 |
| Steward EC | 10 fl oz | 0.20 a | 0.30 a | 0.05 | 0.05 |
| Untreated Check | --- | 0.70 b | 1.05 b | 0.70 | 0.25 |
| | P | 0.0134 | 0.0126 | 0.1932 | 0.5920 |

[a]Treatments were broadcast over the plant canopy in a 15 GPA water solution via 20-inch nozzle spacing @ 30 psi.

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

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

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| Brand | Formulation | Common Name | Composition | Manufacturer |
|---|---|---|---|---|
| Steward | EC | indoxacarb | methyl (*S*)-*N*-[7-chloro-2,3,4a,5-tetrahydro-4a-(methoxycarbonyl)indeno[1,2-*e*][1,3,4]oxadiazin-2-ylcarbonyl]-4′-(trifluoromethoxy)carbanilate | E. I. du Pont de Nemours and Company<br>1007 Market Street<br>Wilmington, Delaware 19898 |
| Warrior II with Zeon Technology | 2.08 CS | lambda-cyhalothrin | reaction product comprising equal quantities of (*R*)-α-cyano-3-phenoxybenzyl (1*S*,3*S*)-3-[(*Z*)-2-chloro-3,3,3-trifluoropropenyl]-2,2-dimethylcyclopropanecarboxylate and (*S*)-α-cyano-3-phenoxybenzyl (1*R*,3*R*)-3-[(*Z*)-2-chloro-3,3,3-trifluoropropenyl]-2,2-dimethylcyclopropanecarboxylate | Syngenta Crop Protection, LLC<br>P.O. Box 18300<br>Greensboro, North Carolina 27419-8300 |