

EVALUATION OF SOIL APPLIED AND SEED TREATMENT INSECTICIDES ON CORN FOR CONTROL OF CORN ROOTWORM LARVAE, 2001.

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Fifteen insecticide treatments were evaluated for their efficacy against corn rootworm larvae at the OARDC Western Branch Station near South Charleston, OH. The insecticides were applied at planting time on 2 May to two rows (30 inch spacing) by 92 ft long plots arranged in a RCBD with four replicates per plot. Five granular insecticides (Aztec, Capture, Counter, Force and Lorsban) were applied with a modified Noble applicator that was calibrated to deliver the desired rate. These five granular insecticides were placed in-furrow (IF) or T-banded (TB). Two granular insecticides (Aztec 4.67G and Fortress) were placed in-furrow (IF) and T-banded (TB) with a SmartBox metering system calibrated to deliver the desired rate. The liquid insecticide Capture was applied as a T-band (TB) with a CO₂ calibrated sprayer using a TeeJet nozzle calibrated to deliver 3 gal/ace. The liquid insecticide Regent was applied in-furrow (IF) through a CO₂ charged microtube calibrated to deliver 1 gal/acre. The insecticides (Clothianidan, Prescribe and ProShield) were commercially applied to the seed before planting. Counts of total stand in 100 row ft were taken on 29 May. Rootworm feeding injury was evaluated on 6 July by randomly digging 5 roots per replicate for each treatment. Roots were washed, examined for corn rootworm larval feeding injury and rated in accordance with the Iowa 1-6 scale. Plots were machine harvested on 10 Oct.

Significant differences in total stand were observed among treatments caused by an early season pest problem (seedcorn maggot). Seed treatments and one granular insecticide achieved the best stand. All plants treated with an insecticide had a lower root rating than the untreated check. There were significant difference in root rating among the insecticide treatments. The seed treatments, Fortress and Regent all had significantly higher yields than the untreated check. Significant differences in yield were observed among the insecticide treatments.

Table 1.

Treatment	Rate of Application	Application Method	Stand per 100 Row Ft	Root Rating (1-6 Iowa Scale)	Yield Bu/Acre
Aztec Biodac 2.1G	6.7 oz / 1000 row ft	TB - NB	140.50 cde	1.95 abc	193.65 a-f
Aztec 4.67G	3 oz / 1000 row ft	TB - SB	146.25 ab	1.90 ab	191.63 b-f
Aztec 4.67G	3 oz / 1000 row ft	IF - SB	142.00 bcde	1.85 ab	196.86 a-e
Capture 2 EC	0.3 fl oz / 1000 row ft	TB - NZ	142.75 bcde	1.85 ab	189.58 ef
Capture 1.15G	8 oz / 1000 row ft	TB - NB	137.50 e	1.95 abc	191.29 c-f
Capture 1.15G	8 oz / 1000 row ft	IF - NB	139.25 de	2.15 c	193.40 a-f
Clothianidin*	1.25 Mg/Kernel	ST	150.50 a	1.80 a	200.47 a
Counter 20CR	6 oz / 1000 row ft	TB - NB	140.25 cde	1.80 a	192.15 b-f
Force 3G	4 oz / 1000 row ft	TB - NB	141.25 bcde	2.05 bc	192.60 a-f
Fortress 5G	3 oz / 1000 row ft	TB - SB	142.25 bcde	1.80 a	188.93 f
Fortress 5G	3 oz / 1000 row ft	IF - SB	145.25 abc	1.95 abc	199.10 abc
Lorsban 15G	3 oz / 1000 row ft	TB -NB	142.25 bcde	1.95 abc	197.51 a-d
Prescribe	1.35 Mg/Kernel	ST	149.00 a	1.95 abc	197.86 abc
Proshield		ST	150.50 a	1.95 abc	199.34 ab
Regent 4SC	0.24 fl oz /1000 row ft	MT - 1 gal/A	143.25 bcd	2.00 abc	198.41 abc
Untreated Check			141.50 bcde	2.40 d	189.91 def

Means followed by the same letter in a column are not significantly different (P = 0.05, LSD).

TB - NB = T-band with Noble, TB - SB = T-band with SmartBox, IF - SB = Infurrow with SmartBox, TB - NZ = T-band with spray nozzle, MT = Microtube, ST = Seed treatment

* Clothianidin is not labeled on corn.