EVALUATION OF SOIL APPLIED AND SEED TREATMENT INSECTICIDES ON CORN FOR CONTROL OF CORN ROOTWORM LARVAE, 2002.

Bruce Eisley
Dept. of Entomology, The Ohio State University
Columbus, OH 43210

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 on 16 May to two rows (30 inch spacing) by 140 ft long plots arranged in a RCBD with four replicates per plot. Five granular insecticides (Aztec 2.1G, Counter 20CR, Force 3G, Fortress 2.5G and Lorsban 15G) were applied either in-furrow (IF) or T-banded (TB) with a modified Noble applicator that was calibrated to deliver the desired rate. Two granular insecticides (Aztec 4.67G and Fortress 5G) were placed in-furrow (IF) with a SmartBox metering system calibrated to deliver the desired rate. The liquid insecticides Capture and Leverage were applied as a T-band (TB) with a CO_2 calibrated sprayer using a TeeJet 650067 nozzle calibrated to deliver 3 gal/ace. The liquid insecticide Regent was applied in-furrow (IF) through a CO_2 charged microtube calibrated to deliver 1 gal/acre. The insecticides (Poncho, Prescribe and ProShield) were commercially applied to the seed before planting. Counts of total stand in 100 row ft and lodging counts, plants lodged in 100 row ft divided by total plants in 100 row ft, were taken on 2 Oct. Rootworm feeding injury was evaluated on 5 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 9 Oct.

Significant differences in total stand were observed among treatments. All plants treated with an insecticide had a lower root rating and lower percent lodging than the untreated check. Significant differences in root rating and lodging were observed among the insecticide treatments. All except one treatment, Leverage @ 0.14 fl oz/1000', had significantly higher yields than the untreated check. Significant differences in yield were observed among the insecticide treatments.

Table 1. Stand counts, root rating, percent lodging and yield observed in continuous corn trial.

Treatment	Application Rate	Application[a] Method	Stand Count (Plants/100 Row Feet)	Root Rating (Iowa 1-6 Scale)	Percent Lodging[c]	Yield (Bu/Acre)
Aztec 2.1G	6.7 oz/1000'	NB TB	146.5 abcd	2.50 abcd	0.18 a	144.4 a
Aztec 4.67G	3 oz/1000'	SB IF	146.5 abcd	2.45 abc	0.00 a	137.9 ab
Capture 2EC	0.3 fl oz/1000'	NZ TB	146.5 abcd	2.45 abc	1.39 a	136.4 ab
Counter 20CR	6 oz/1000'	NB TB	139.0 de	2.10 a	0.00 a	140.3 a
Force 3G	4 oz/1000'	NB TB	145.8 abcd	2.30 ab	0.00 a	135.5 ab
Fortress 2.5G	7.4 oz/1000'	NB IF	144.3 bcd	2.45 abc	2.49 a	137.0 ab
Fortress 5G	3.7 oz/1000'	SB IF	141.5 cde	2.35 ab	0.00 a	138.2 ab
Leverage 2.7SC[b]	0.14 fl oz/1000'	NZ TB	144.0 bcde	3.20 e	6.33 b	127.3 bc
Leverage 2.7SC[b]	0.28 fl oz/1000'	NZ TB	146.0 abcd	2.80 cde	3.15 ab	135.0 ab
Lorsban 15G	8 oz/1000'	NB TB	146.8 abcd	2.50 abcd	0.00 a	136.9 ab
Poncho (clothianidin)[b]	0.25 mg/Kernel	ST	148.3 abc	3.10 e	1.81 a	134.6 ab
Poncho (clothianidin)[b]	1.25 mg/Kernel	ST	153.8 a	2.50 abcd	0.49 a	142.9 a
Prescribe	1.35 mg/Kernel	ST	150.5 ab	2.90 de	0.65 a	139.2 ab
ProShield	16.9 fl oz/cwt seed	ST	152.5 ab	2.50 abcd	1.59 a	138.7 ab
Regent 4SC	0.24 fl oz/1000'	MT IF	145.3 abcd	2.55 bcd	0.88 a	135.8 ab
Untreated			135.5 e	3.65 f	12.1 c	118.2 c

Means in a column followed by the same letter are not significantly different (p=0.05)

[a] NB TB = Noble T-band, SB IF = SmartBox In-furrow, NB IF = Noble In-Furrow, ST = Seed Treatment, NZ TB = Nozzle T-Band, MT IF = Micro Tube In-furrow

[b] Leverage and Poncho (clothianidin) are not labeled on field corn

[c] Percent lodging was calculated by dividing the number of plants lodged in 100 row feet by the number of plants in 100 row feet.