CORN (SWEET): *Zea mays* L. 'Jubilee'
CONTROL OF EUROPEAN CORN BORER AND CORN EARWORM IN MINNESOTA SWEET CORN, 2002

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European corn borer (ECB): *Ostrinia nubilalis* (Hübner)
Corn earworm (CEW): *Helicoverpa zea* (Boddie)

'Jubilee' was planted 6 Jun at the University of Minnesota Research and Outreach Center at Rosemount, MN. Plots were arranged in a RCB design with 4 replications. Plots consisted of 2 rows 25 ft (7.6 m) long with 30 in (0.8 m) row spacing. A single skip row separated treatments and 10 ft alleys (3.04 m) separated replications. Treatment applications were made using a CO_2 pressurized backpack sprayer with a single-nozzle wand and an XR-Teejet 8002 flat fan nozzle and no screen. The sprayer was calibrated to deliver 25 gpa (233.8 l/ha) at 35 psi (242 kPa). The ear zone of each row of the 2-row plot was treated beginning at 75% silk. A total of 3 applications were made on the following dates, 2, 8 and 16 Aug. Twenty-five primary ears per plot were harvested and evaluated 23 Aug. Total number of ECB and CEW larvae, larval size and location, and feeding damage (cm^2) were recorded.

Mean ECB and CEW larval densities were 0.41 and 0.32 per ear in the untreated check. All treatments except XDE 225 provided significant control of ECB compared to the untreated check for total ECB and all treatments provided significant control of large ECB. SpinTor 2SC was the only treatment that provided significant control of CEW compared to the untreated check for total CEW. There were no significant differences for any treatment compared to the untreated check for control of large CEW. Percentage of marketable ears for processing was significantly higher for all treatments compared to the untreated check except for XDE 225, which was not significantly different from the check for processing ear marketability. Mean CEW values were high because of a high number of small CEW that were present in the ears. This likely occurred because of a heavy CEW moth flight after the final application of treatments was made. Kernel feeding damage was significantly lower in all treatments compared to the untreated check. Phytotoxicity was not observed among the treatments.

Treatment / formulation	Rate lb(AI)/ac	Mean number of ECB / ear[a]	Mean number of large ECB / ear[b]	Mean number of CEW / ear[c]	Mean number of large CEW / ear[d]	Marketable ears (%) Processing[e]	Total kernel feeding damage/ear (cm^2)[f]
Warrior 1 CS	0.02	0.01 b	0.00 c	0.33 ab	0.07	93 ab	0.33 b
Warrior 1 CS	0.025	0.04 b	0.01 c	0.14 bc	0.03	96 ab	0.31 b
F0570 0.8 EW	0.025	0.01 b	0.01 c	0.29 ab	0.06	93 ab	0.28 b
Baythroid 2 EC	0.044	0.01 b	0.01 c	0.27 ab	0.04	95 ab	0.38 b
Baythroid XL 1 EC	0.0262	0.07 b	0.02 c	0.36 a	0.07	91 ab	0.57 b
SpinTor 2 SC	0.094	0.02 b	0.00 c	0.07 c	0.04	96 ab	0.33 b
Capture 2 EC	0.04	0.03 b	0.02 c	0.26 abc	0.04	94 a	0.32 b
Capture 2 EC / F0570 0.8 EW / F0570 0.8 EW	0.04 / 0.025 / 0.025	0.02 b	0.00 c	0.28 ab	0.09	92 ab	0.41 b
Pounce 3.2 EC	0.20	0.05 b	0.02 c	0.40 a	0.04	96 ab	0.26 b
XDE225 0.5 CS	0.0125	0.30 a	0.08 b	0.30 ab	0.07	88 bc	0.58 b
Untreated Check	---	0.41 a	0.17 a	0.32 ab	0.10	77 c	1.16 a
					NS		

Means within columns followed by the same letter are not significantly different ($P > 0.05$), Least significant difference Test (LSD). Mean percentage of marketable ears for fresh market and processing were transformed using the arcsin transformation to obtain mean separations using LSD (P=0.05); untransformed means are presented.
NS = non significant AVOVA.

[a] Includes all ECB instars in the husk, silk, tip, side, butt, or shank of the ear.

[b] Includes large (3^{rd} – 5^{th} instar) ECB in the tip, side, or butt of the ear.

[c] Includes all CEW instars in the husk, silk, tip, side, butt, or shank of the ear.

[d] Includes large (3^{rd} – 6^{th} instar) CEW in the tip, side, or butt of the ear.

[e] Percentage of ears with only small larvae (1-2 instar ECB) and/or damage limited to the tip; no damage or larvae on the side or butt of the ear.

[f] Total kernel area damaged/ear in the tip, side, or butt by ECB.

Part II. Materials Tested for Arthropod Management

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Warrior 1CS, (3-(2-Cloro-3,3,3-trifluoro-1-propenyl)-2,2dimethylcyclopropanecar-boxylate (S),(S)-cis-Z isomers, lambdacyhalothrin, Syngenta
Spintor 2SC, (2((6-Deoxy-2,3,4-tri-O-methyl-a-L-mannopyronaosyl)oxy)-13-((5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl)oxy)-9-ethyl 2,3,2a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-1H-as-indaceno(3,2,-d)oxacyclododecin-7,15-dione), spinosad, Dow AgroSciences
Capture 2EC, (2-Methyl-1(1,1'-biphenyl)-3yl)methyl cis-3-(2-chloro-3,3,3-trifluoro propenyl)-2, 2dimethyl cyclopropane carboxylate), bifenthrin, FMC
F0570 0.8EW, Zetacypermetherin, FMC
Pounce 3.2EC, (3-Phenoxybenzyl(+)cis-trans-3-(2,2-dichlorovinyl)2,2-dimethylcyclopropanecarboxylate), permethrin, FMC
Baythroid 2, (Cyano(4-fluoro-3-phenoxyphenyl)methyl-3-(2,2-dichloroethenyl)-2,2dimethylcyclopropanecarboxylate), cyfluthrin, Bayer Corp.
Baythroid XL 1EC, (Cyano(4-fluoro-3-phenoxyphenyl)methyl-3-(2,2-dichloroethenyl)-2,2dimethylcyclopropanecarboxylate), cyfluthrin, Bayer Corp.
XDE225 0.05CS, microencapsulated Supercyhalothrin, Dow AgroSciences