

**Corn (Sweet):** *Zea mays* L. 'Jubilee'  
European corn borer (ECB); *Ostrinia nubilalis* (Hübner)

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#### **CONTROL OF EUROPEAN CORN BORER IN MINNESOTA SWEET**

**CORN, 2000:** 'Jubilee' was planted 15 May 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. Plots were artificially infested with ECB on 3 Aug. Approximately 25 neonate larvae per ear were placed on 30 primary ears per plot (15 primary ears per row) using a bazooka applicator. Treatment applications were made using a CO<sub>2</sub> 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 100% silk. A total of 3 applications were made on the following dates, 31 Jul and 7 and 11 Aug. Twenty-five primary ears per plot were harvested and evaluated 16 Aug. Total number of ECB larvae, larval size and location, and feeding damage (cm<sup>2</sup>) were recorded.

Mean ECB larval densities were 3.41 per ear in the untreated check. All treatments provided significant control of ECB compared to the untreated check. Percentages of marketable ears for both fresh market and processing were significantly higher in all treatments compared to the untreated check. Warrior T at the high rate produced the highest percentages of marketable ears for fresh market and processing. 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 per ear (% control) <sup>a</sup>	Marketable ears (%)		Total kernel feeding damage/ear (cm <sup>2</sup> ) <sup>d</sup>
			Fresh market <sup>b</sup>	Processing <sup>c</sup>	
Warrior T	0.033	0.08 a (98)	92.79 a	93.93 a	0.14 a
Warrior T	0.025	0.14 a (96)	87.00 ab	89.00 ab	0.18 a
Spintor 2SC	0.094	0.18 a (95)	81.91 ab	86.00 ab	0.32 a
Capture 2EC	0.033	0.18 a (95)	79.83 ab	86.96 ab	0.36 a
Mustang 1.5EW	0.05	0.28 a (92)	78.88 ab	78.88 ab	0.46 a
Mustang 1.5EW	0.0375	0.57 a (83)	67.96 b	69.04 b	0.93 a
RH-2485 2F + Latron CS-7	0.06 + 0.12%v/v	0.55 a (84)	60.89 b	68.06 b	0.63 a
RH-2485 2F + Latron CS-7	0.12 + 0.12%v/v	0.63 a (82)	64.00 b	69.00 b	1.09 a
Pounce 3.2EC	0.15	0.58 a (83)	62.00 b	63.00 b	0.74 a
Baythroid 2	0.044	0.64 a (81)	62.29 b	66.33 b	1.04 a
Untreated Check		3.41 b	10.63 c	10.63 c	2.99 b

Means within columns followed by the same letter are not significantly different ( $P=0.05$ ), Ryan-Einot-Gabriel-Welsch multiple range test (REGWQ). Mean percentage of marketable ears for fresh market and processing were transformed using the arcsin transformation to obtain mean separations using REGWQ ( $P=0.05$ ); back transformed means are presented.

<sup>a</sup> Includes all ECB instars in the husk, silk, tip, side, butt, or shank of the ear.

<sup>b</sup> Percentage of ears with no kernel damage or larvae present.

<sup>c</sup> 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.

<sup>d</sup> Total kernel area damaged/ear in the tip, side, or butt by ECB.

## Part II. Materials Tested for Arthropod Management

### CONTROL OF EUROPEAN CORN BORER IN MINNESOTA SWEET CORN, 2000

Warrior T 1CS, (3-(2-Chloro-3,3,3-trifluoro-1-propenyl)-2,2dimethylcyclopropanecarboxylate (S),(S)-cis-Z isomers, lambda-cyhalothrin, Syngenta

Spintor 2SC, (2-((6-Deoxy-2,3,4-tri-O-methyl- $\alpha$ -L-mannopyranosyl)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

Mustang 1.5EW, zeta-methrin, FMC

RH-2485 2F, (N'-Tert-butyl N'-(3,5-dimethylbenzyl)-3-methoxy-2-methyl benzaldehyde), methoxyfenozide, Rohm and Haas

Latron CS-7, (Blend of alkyl aryl polyethoxylate and sodium salt of alkylsulfonatedalkylate 60%), Rohm and Haas

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.