

CONTROL OF EUROPEAN CORN BORER IN MINNESOTA SWEET CORN, 2004

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'Supersweet Jubilee' was planted 18 May at the University of Minnesota Research and Outreach Center at Rosemount, MN. Plots were arranged in a RCB design with 3 replications. Plots consisted of 2 rows 25 ft (7.6 m) long with 30 in (0.8 m) row spacing with a single skip row separating treatments and 10 ft alleys (3.04 m) separating replicates. Treatment applications were made using a CO₂ pressurized backpack sprayer with a two-nozzle 3 foot boom and XR-Teejet 8002 flat fan nozzles with no screens. The sprayer was calibrated to deliver 25 gpa (233.8 l/ha) at 35 psi (242 kPa). Plots were artificially infested with ECB on 4 Aug. Approximately 25 neonate larvae per ear were placed on 30 primary ears per plot (15 primary ears per row) using a bazooka applicator. The ear zone of each row of the 2-row plot was treated beginning at \approx 90% silk. A total of 3 applications were made on the following dates, 2, 6 and 13 Aug. Twenty-five primary ears per plot were harvested and evaluated 23 Aug. Total number of ECB larvae, larval size and location, and feeding damage (cm²) were recorded.

Mean ECB larval density was 0.13 per ear in the untreated check. All treatments provided significant control of ECB compared to the untreated check for total ECB and there was no significant difference for any treatment compared to the check for control of large ECB. Percentage of marketable ears for fresh market was significantly higher for all treatments compared to the untreated check. There were no significant differences for any treatment compared with the untreated check for processing marketability. Kernel feeding damage was not significantly different from the untreated check for any treatment. 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	Marketable ears (%)		Total kernel feeding damage/ear (cm ²) ^e
				Fresh market ^c	Processing ^d	
Baythroid 2EC	0.044	0.00 b	0.00	100 a	100	0.00
Mustang Max 0.8 EC	0.025	0.00 b	0.00	100 a	100	0.00
Discipline 2EC	0.040	0.00 b	0.00	100 a	100	0.00
Entrust 80WP	0.094	0.01 b	0.01	99 a	99	0.00
Warrior 1CS	0.025	0.01 b	0.01	99 a	99	0.03
Capture 2EC	0.040	0.01 b	0.01	99 a	99	0.01
Intrepid 2F	0.120	0.01 b	0.01	99 a	99	0.00
SpinTor 2SC	0.094	0.03 b	0.01	97 a	99	0.01
Untreated Check	--	0.13 a	0.05	87 b	95	0.05
			NS		NS	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.

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

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

^c Percentage of ears with no kernel damage or larvae present.

^d 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.

^e Total kernel area damaged/ear in the tip, side, or butt by ECB.