

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

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CONTROL OF CORN EARWORM AND EUROPEAN CORN BORER IN MINNESOTA SWEET CORN, 1998. 'Jubilee' was planted 6 Jul at the University of Minnesota Agricultural Experiment Station at Rosemount, MN. Plots were arranged in a RCB design with 4 replications. Plots were 2 rows, 25 feet (7.6 m) long, with 30 inch (0.8 m) row spacing. A single skip row separated treatments and a 10 foot alley (3.04 m) separated replications. Treatments were applied using a CO₂ pressurized backpack sprayer using a single-nozzle wand fitted with a XR-Teejet 8002 flat fan nozzle and no screen. The sprayer was calibrated to deliver 20 gpa (187.04 l/ha) at 35 psi (242 kPa). Both rows of each 2-row plot were treated at the ear zone beginning at 50% silk. Four treatments were applied, 1,4,7, and 14 Sep. Treatments were evaluated 21 Sep by harvesting 25 ears at random from each plot (100 total ears per treatment) and recording the total number of larvae, larval size and feeding damage (cm²).

CEW was the primary pest in this study. Total CEW and ECB larval density averaged 27.3 and 3.0 per 25 ears, respectively, in the untreated check. Pheromone trapping indicated first CEW arrival at Rosemount 29 Jul. Mean trap-catch per night was 8.8 CEW moths from first arrival to harvest, and 10.3 CEW moths from 50% silk to harvest. Maximum catch occurred 1 Sep at 49 CEW/trap. All treatments provided significant control of ECB compared with the untreated check. All insecticides, with the exception of PennCap-M, RH-2485 (both rates), and TD-2402-01, provided significantly greater control of CEW, and a significantly greater number of marketable ears for fresh market than the untreated check. Early instar CEW larvae accounted for most of the total CEW for Baythroid (both rates), Pounce, Warrior (low rate), TD-2344-01, TD-2402-01, and TD-2351-01/TD-2344-03. All insecticides, except RH-2485 (low rate), provided a significantly higher percentage of ears for processing than the untreated check. Kernel feeding damage was significantly lower in all treatments compared to the untreated check. No phytotoxicity was observed among treatments.

Treatment	Rate lb(AI)/acre	Mean number larvae per 25 ears (% control)			Marketable ears (%)		Total kernel feeding damage/ear (cm ²) ^f
		ECB Total ^a	CEW		Fresh market ^d	Processing ^e	
			Early Instar ^b	Total ^c			
Baythroid 2E	0.034	0 (100)b	7.5abcd	10.3(62)bc	38.0cd	89.0e	6.26c
Baythroid 2E	0.044	0.3(92)b	4.3abcd	5.5(80)c	39.0cd	96.0e	6.32c
Capture	0.033	0(100)b	2.0cd	4.5(83)c	45.0cd	91.0e	5.16c
Capture	0.04	0(100)b	2.5bcd	3.8(86)c	44.0cd	95.0e	6.07c
Pennacap-M 2FM	0.75	0(100)b	12.3a	26.8(2)a	1.0a	46.0dc	24.66b
Pounce 3.2EC	0.20	0(100)b	10.0ab	10.5(61)bc	38.0cd	98.0e	4.88c
RH-2485 80W	0.05	0(100)b	3.5bcd	23.8(13)a	5.0a	29.0ab	27.57b
RH-2485 80W	0.10	0(100)b	7.0abcd	23.3(15)a	9.0ab	43.0bc	22.17b
TD-2351-01 4F	0.75	0(100)b	9.3abc	18.3(33)ab	8.0a	60.0d	19.34b
TD-2344-03 0.83E	0.03	0(100)b	6.8abcd	8.5(69)bc	36.0cd	92.0e	7.04c
TD-2402-01 0.83SC	0.03	0(100)b	6.5abcd	8.3(70)bc	28.0bc	91.0e	5.20c
TD-2351-01 4F + TD-2344-03 0.83E	0.5/0.03	0(100)b	5.8abcd	7.0(74)c	30.0cd	94.0e	7.05c
Warrior 1CS	0.025	0(100)b	2.8bcd	2.8(90)c	52.0d	96.0e	5.53c
Warrior 1CS	0.033	0(100)b	1.8d	4.3(84)c	49.0cd	93.0e	4.26c
Untreated Check	--	3.0a	6.0abcd	27.3a	1.0a	22.0a	36.12a

Means with columns followed by the same letter are not significantly different ($P=0.05$), Ryan-Einot-Gabriel-Welsch multiple F test (REGWF).

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

^b Includes CEW instars 1-2 in the husk, silk, tip, side, butt, or shank of the ear.

^c Includes CEW instars in the tip, side, or butt of the ear.

^d Ears with no damage or larvae present.

^e Ears with small larvae (small CEW and/or ECB instars 1-2) and/or damage in the tip and no damage or larvae in the side or butt of the ear.

^f Total kernel area damaged/ear in the tip, side, or butt.