

BEAN (SNAP): *Phaseolus vulgaris* L., 'Hystyle'
INSECTICIDAL CONTROL OF EUROPEAN CORN BORER IN MINNESOTA SNAP
BEANS, 2002

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European corn borer (ECB): *Ostrinia nubilalis* (Hübner)

'Hystyle' was planted 29 May at the University of Minnesota Agricultural Experiment Station at Rosemount, MN. Plots were 4 rows wide with an untreated skip row between plots and 25 ft (7.6 m) long. Rows were planted on 30 in (0.8 m) centers with 10 ft (3.04 m) alleys separating replicates. Treatments were arranged in a RCB design with 4 replicates. Applications were made with a CO₂ pressurized backpack sprayer using a 10 ft boom with 6 nozzles each fitted with an XR-Teejet 8002 flat fan nozzle with no screen. The sprayer was calibrated to deliver 20 gpa (187.04 l/ha) at 35 psi (242 kPa). On 12 and 18 Jul, at blossom and pin-bean (beans ≤ 1 inch) growth stages respectively, 5 ft (1.02 m) of consecutive row from one of the 2 middle rows of each plot were infested with ≈40 neonate larvae per plant using a bazooka applicator. A total of 3 sprays were applied on 9, 15, and 22 Jul. All treatments were harvested and evaluated 29 Jul by selecting 5 consecutive plants from the center of the 5 ft of row with infested plants. For each plant, data were recorded for total ECB larvae (in the pods or stem), damaged pods, total pods, and yield. The percentage of stems with feeding damage for each set of 5 plants was also recorded.

For total ECB and ECB in the pods, all treatments provided a significant reduction compared with the untreated check. The number of damaged pods and percentage of stems damaged was also significantly less compared with the untreated check for all treatments. No significant differences were found for total pods or yield for any treatment compared with the untreated check. No phytotoxicity was observed among treatments.

Treatment/formulation	Rate (lb AI/acre)	Average / 5 consecutive plants					
		Total ECB larvae ¹	ECB larvae in pods	Damaged pods	Total pods	% Stems damaged	Yield (lbs.)
F0570 0.8 EW	0.025	0.00 b	0.00 b	0.00 b	74.00	25 b	0.62
Capture 2 EC	0.040	0.00 b	0.00 b	0.25 b	88.00	35 b	0.91
Warrior 1CS	0.025	0.00 b	0.00 b	1.00 b	63.75	25 b	0.67
Untreated Check	---	18.50 a	6.50 a	17.75 a	83.75	100 a	0.89
					NS		NS

Means within columns followed by the same letter are not significantly different ($P > 0.05$), Least significant difference test (LSD). NS = not significant ANOVA. Stem damage data were transformed using the arcsine transformation to obtain mean separations using LSD ($P=0.05$); untransformed means are presented.

¹ Total ECB larvae includes all larval instars found in both the stem and pods.

Part II. Materials Tested for Arthropod Management

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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

Warrior 1CS, (3-(2-Chloro-3,3,3-trifluoro-1-propenyl)-2,2dimethylcyclopropanecar-boxylate (S),(S)-cis-Z isomers, lambdacyhalothrin, Syngenta