

# EVALUATION OF INSECTICIDE TREATMENTS FOR THE CONTROL OF INSECT PESTS IN SNAP BEANS IN VIRGINIA - 2008

**Tom Kuhar and H el ene Doughty**

Eastern Shore Agricultural Research and Extension Center,  
Virginia Tech, Painter, Virginia

## **Introduction**

A variety of insects are pests of snap beans in Virginia. Primarily, European corn borers, bean beetles, stink bugs, potato leafhoppers and thrips can be of economic importance. The objective of the experiment was to assess the efficacy of various insecticide sprays to control the above foliar insects on snap beans.

## **Experimental design & materials**

Snap beans were mechanically planted on 14 Jun at the Virginia Tech ESAREC near Painter, VA. Seeds were spaced 10 to 15 cm apart in rows. Plots consisted of 1 row 20 ft long with unplanted guard rows on each side. Rows were planted on a 3 ft row center in a 4 tier field design with 8 ft alleys between tiers and a 16 ft center alley. A total of 13 treatments were arranged in a RCB design with four replicates. All plots were maintained according to local standard practices. Treatments were applied at 62 gpa with a 3-nozzle boom equipped with D4 tips and 45 cores powered by a CO<sub>2</sub> backpack sprayer set at 40 psi. Applications were made on 17 and 24 Jul.

## **Procedures**

The number of PLH nymphs and thrips larvae was recorded on 21 Jul on 10 randomly-picked trifoliates per plot. On 4 Aug, 100 pods were harvested per plot and examined for bean leaf beetle, stink bug and lepidopteran larvae damage. Each pod was also examined for deformation or abnormal curling caused by thrips feeding. All data were analyzed using ANOVA. Proportion data were arcsine square root transformed prior to analysis. Means were separated using Fisher's Protected LSD at the 0.05 level of significance.

## **Results**

Pest pressure was moderate. There was a significant treatment effect on the number of potato leafhopper (PLH) nymphs and thrips on 21 Jul (4 DAT) as well as the percentage of pods damaged by bean leaf beetle, stink bug, and thrips at harvest. Lepidopteran pest pressure was low and not significant in this trial. Both Avaunt treatments as well as Mustang Max, HGW86, and Carzol had significantly fewer PLH on leaves than the untreated control. Both rates of SpinTor as well as Radiant, Warrior II, HGW86, SpinTor + Ecotec AG, Tick Ex, and Carzol had significantly fewer thrips on leaves than the untreated control. At harvest, SpinTor at both rates as well as Ecotec AG + SpinTor, Mustang Max, Warrior II, HGW86, and Avaunt at the 6 oz rate had significantly less % bean leaf beetle damage than the untreated control. SpinTor at the 6 oz rate, Mustang Max, HGW86, and Ecotec AG + SpinTor had significantly less % stink bug damage than the untreated control. Avaunt at 6 oz, SpinTor at the 6 oz rate, Mustang Max, Warrior II, HGW86, Tick Ex, and Carzol had significantly less % thrips curling of pods than the untreated control. No visible signs of phytotoxicity were observed from any treatment.

**Table 1. Summary of efficacy of foliar insecticides for the control of foliar insect pests in snap beans; Painter, VA 2008**

Treatment	Rate / acre	Mean no. potato leafhopper nymphs / 10 trifoliates	Mean no. thrips* / 10 trifoliates	% damaged pods / 100 pods			
				bean leaf beetle	Stink bug	Lepidopteran larvae	Thrips (curling pods)
Avaunt 30WDG	3.5 oz	0.0 c	3.5 a-e	2.0 a-d	3.0 b-e	0.0	35.3 ab
Avaunt 30WDG	6 oz	0.5 bc	4.0 b-f	2.3 bcd	1.5 b-e	0.0	22.3 cd
Spintor 2SC	6 fl. oz	5.3 a	0.5 def	0.8 cd	0.5 de	0.0	24.5 bcd
Radiant	6 fl. oz	3.0 abc	0.5 ef	1.8 a-d	10.3 a	0.5	32.8 abc
Mustang Max	4 fl. oz	0.0 c	7.3 abc	0.5 d	0.3 e	0.5	18.8 d
Warrior II	1.92 fl. oz	4.0 abc	1.5 def	1.3 bcd	1.8 b-e	1.0	23.8 bcd
HGW86 10SE	20.55 fl. oz	0.5 bc	0.8 def	1.8 bcd	1.0 cde	0.0	28.5 bcd
Ecotec Ag	24 fl. oz	3.5 ab	9.8 ab	3.3 ab	3.0 bcd	1.3	32.3 abc
Ecotec Ag + Spintor 2SC	24 + 3 fl. oz	3.3 ab	5.5 a-d	0.8 d	0.5 de	0.0	29.3 a-d
Spintor 2SC	3 fl. oz	3.0 ab	0.8 def	1.8 bcd	3.0 b-e	0.0	30.0 abc
Tick Ex (M. anisopliae)	43 fl. oz	5.8 ab	2.0 c-f	4.0 abc	4.0 b	0.8	27.3 bcd
Carzol SP	16 oz	1.0 bc	0.0 f	2.3 a-d	1.8 b-e	1.0	27.3 bcd
Untreated Control		5.8 a	9.3 a	4.8 a	3.5 bc	1.3	40.8 a

*\*70% tobacco thrips; 30% Eastern and Western flower thrips*