

SWEETPOTATO: <i>Ipomoea batatas</i> L. 'Beauregard'	Brian A. Nault
and 'Hayman'	John Speese III
Corn wireworm; <i>Melanotus communis</i>	Eastern Shore Agricultural
(Gyllenhal)	Research and Extension Center
Tobacco wireworm; <i>Conoderus vespertinus</i> (F.)	Virginia Tech
Southern corn rootworm; <i>Diabrotica</i>	33446 Research Drive
<i>undecimpunctata howardi</i> Barber	Painter, VA 23420
Flea beetles; <i>Systema</i> sp.	ph. (757) 414-0724 ext 14
Sweetpotato flea beetle; <i>Chaetocnema confinis</i>	bnault@vt.edu
Crotch	

MANAGING SOIL INSECT PEST OF SWEETPOTATOES, 1999. Sweetpotato slips were transplanted on 24 Jun at Virginia Tech's Eastern Shore Agricultural Research and Extension Center near Painter, VA. Soil type was classified as Bojac sandy loam. Each plot consisted of three 20-ft-long rows with row centers spaced by 3 ft. Plots were flanked by untreated rows. The experiment had 7 treatments and was arranged in a RCBD replicated 6 times. Lorsban was broadcast at planting using a propane-pressurized backpack sprayer and a boom equipped with 6 flat fan nozzles calibrated to deliver 21 gal of spray/acre at 40 psi. All 6 nozzles were oriented over the top of three rows. Garrlic Barrier was applied in furrow at planting using the sprayer described above, except that a single-nozzle boom was used. All foliar sprays were made using the sprayer that was used for the broadcast treatments. Foliar sprays were applied on 21 and 27 Jul; and 4 and 11 Aug. A black light trap was used to monitor adult activity of *C. vespertinus*. The first spray was timed at the beginning of the major flight of *C. vespertinus* and continued at weekly intervals until the end of this peak.

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The percentage of insect damaged roots in the untreated Hayman plots did not differ from the percentage in the Beauregard plots. Similarly, the percentage of insect damaged roots in plots planted with each cultivar and protected with the standard control strategy (Lorsban + Sevin) did not differ. Despite observations by growers that Hayman sweetpotatoes may resist certain soil insect pests, our results indicate that this cultivar lacks resistance to the complex of soil insect pests, at least under the environmental conditions experienced in 1999.

The percentages of damaged roots in untreated plots were significantly greater than the percentages in treated ones, with the exception of those that were treated in furrow with Garlic Barrier at planting. The lowest percentages of damaged roots occurred in plots treated with Lorsban + Sevin. These results suggest that the foliar sprays used to target *C. vespertinus* were effective in reducing the egg-laying adult generation of this pest and others. Plots treated with Lorsban + Garlic Barrier foliar sprays had the same level of damage as those treated with Lorsban only, indicating that Garlic Barrier was not effective in resisting egg-laying adults of *C. vespertinus* and perhaps some of the other species.

Cultivar	Treatment/ formulation	Rate lb(AI)/acre	Application method	% damaged roots		
				Total insect	WDS ^a	Sweetpotato flea beetle
Hayman	Lorsban 4EC	2.00	broadcast at planting	12.77 b	7.77 bc	5.00 b
Hayman	Garlic Barrier	1.50 pt form.	in furrow at planting	29.44 a	24.44 a	6.11 ab
Hayman	Lorsban 4EC + Garlic Barrier	2.00 + 1% v/v	broadcast at planting + foliar sprays	13.33 bc	5.55 c	8.88 ab
Hayman	Lorsban 4EC + Sevin XLR	2.00 + 1.00	broadcast at planting + foliar sprays	5.55 cd	4.44 c	1.11 c
Hayman	Untreated			26.66 ab	21.11 ab	7.22 ab
Beauregard	Lorsban 4EC + Sevin XLR	2.00 + 1.00	broadcast at planting + foliar sprays	3.33 d	2.22 c	1.11 c
Beauregard	Untreated			28.33 a	19.44 ab	9.44 a
Pr > F				0.0003	0.0074	0.0008

Means in a column with a letter in common are not significantly different ($P > 0.05$, LSD). Means were transformed using a square root function ($x + 0.01$) before analysis. Actual means are presented.

^a WDS refers to the wireworm, *Diabrotica* sp. and *Systema* sp. complex.