

Section V
Soil Arthropods

BLACK VINE WEEVIL CONTROL ON STRAWBERRY, 2008

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Black vine weevil (BVW), *Otiorhynchus sulcatus* (F.) field trial. Spench treatments of two experimental insecticides were compared with three registered weevilcides and an untreated check in a 3 year-old 'Totem' planting in Burlington, WA. Each treatment was applied to five replicates separated by 5' buffers and arranged in a randomized complete block. A single row separated each block and blocks were composed of three, 30' row plots. Treatments consisted of experimental chlorotraniliprole (DPX-E2745 1.67 lb/gal SC, 0.09 lb(AI)/acre) and

metaflumizone (BAS 320 I, 0.178 and 0.25 lb(AI)/acre + Penetrator Plus 0.25% v/v). They were compared with thiamethoxam (Actara™, 0.047 lb(AI)/acre); bifenthrin (Discipline™, 0.1 lb(AI)/acre); zeta-cypermethrin (Mustang™, 0.05 lb(AI)/acre and an untreated check. The treatments were applied between 9:30 to 10:30 pm on 16 July 2008, with a tractor-mounted plot sprayer equipped with three Spray Systems™ row application units. Each unit was equipped with 3 twin, fan spray tips (TJ60-8006) mounted on a row boom to deliver 150 gal/acre at 45 psi at 1.8 mph. BVW density per plot was determined from 3 minute, timed counts of adult weevils on strawberry foliage after 10 pm with the aid of flashlights at 1, 5 and 9 days posttreatment.

Both rates of metaflumizone performed comparably and there were no significant differences in adult BVW mortality with our standard bifenthrin at 5 to 9 days posttreatment (Table 1). At 5 DAT, the strawberry rows in each metaflumizone plot were littered with BVW adults in a state of *relaxed paralysis*. All were lying on their backs with weak leg and mouthpart movements. These symptoms fit those described by BASF for their sodium channel blocker insecticide, with death delayed 1-72 hours after ingestion. Although chlorotraniliprole's mode of action is very different from that of metaflumizone, affected insects exhibit very similar symptoms including paralysis, cessation of feeding and ultimately death. Pending their registrations, these data indicate both new chemistries could be rotated with registered weevillcides, thus ensuring their long-term use and sustainability in small fruit IPM programs.

Table 1. Mean black vine weevils per three minute search, 2008.

Treatment	lb(AI)/acre	Mean adult BVW		
		1 DAT	5 DAT	9 DAT
Actara	0.047	7.6b	2.6b	7.4b
DPX-E2Y45 1.65SC	0.090	5b	5.8b	9.8b
Discipline 2EC	0.10	0	0.2b	0.2b
BAS 320 I	0.178	11.4b	0.4b	0.2b
BAS 320 I	0.25	12.4b	0.8b	0.2b
Mustang	0.05	3.4b	4b	3b
Untreated check	-	26.2a	22a	32.4a

Mean within columns followed by the same letter are not significantly different (Fisher's protected LSD, $P < 0.05$), PRC ANOVA SAS.