

Section VII
Foliage & Seed Feeding Pests

MANAGEMENT OF WESTERN RASPBERRY FRUITWORM IN RED RASPBERRY

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Five insecticides were compared with our diazinon standard for efficacy and labeling/registration to control the western raspberry fruitworm, *Byturus unicolor*. Five adult fruitworm per Petri dish were placed on 3-4 inch long, air-dried fruit buds that were uniformly treated with field rates applied with a Precision Spray Tower and replicated five times. Mortality was evaluated at 1, 2 and 3 days posttreatment (Table 1). These fruitworms were collected from Whatcom County, WA in early May. One day after treatment, 100% mortality was observed for the Diazinon standard. At 48 hours posttreatment, there was no significant difference for the remaining 4 insecticides compared with the untreated check. Complete mortality was obtained for Actara (thiamethoxam), Capture (bifenthrin) and Imidan (phosmet) and Success (spinosad) after 72 hours posttreatment. These data corroborate similar bioassays reported last year. Success was registered on red raspberry in 2003 for leafroller/worm control during the pre-harvest interval. These data show excellent efficacy for western raspberry fruitworm larval and adult control as well.

Table 1. Adult western raspberry fruitworm bioassay.

Treatment	lb(AI)/acre	Mean mortality		
		1DAT	2DAT	3DAT
Actara 25G	0.06	4.0ab	4.6a	5.0a
Capture 2EC	0.10	2.4b	4.6a	5.0a
Diazinon 50W	1.0	5.0a		
Imidan 70W	0.94	4.0ab	4.8a	5.0a
Success 2SC	0.09	3.2ab	4.4a	4.8a
Untreated check		0.0c	0.0b	0.0b

Mean within columns followed by the same letter are not significantly different (Tukey HSD test, $P < 0.05$).

size: 5 beetles/5reps/6 treatment.

Diazinon and Capture were compared with Success and experimental Actara and Imidan for field efficacy to adult raspberry beetle, *Byturus unicolor*. The test was conducted at the Puyallup REC's Farm 5. Western raspberry fruitworm plots consisted of 3 hills each and 30 plots were randomized amongst 64 total plots based on plant vigor and relative beetle feeding on raspberry leaves. Adult beetle activity was monitored with 2 Rebel Bianco UV non-reflectance traps placed on the top trellis wire, 9 April 2004. Because of the mix of selections, bloom at time of treatment ranged from flowers still closed to 15% bloom and bee activity. Field rates were applied with a Solo backpack sprayer to run off on 5 May and presence of adults assessed on 11 May. Two teams of two persons each scanned and examined flowers and primocane terminals for live beetles for 3 minutes per plot. Capture and Actara provided good adult beetle control compared with the untreated check (Table 2). Imidan, Diazinon and Success were also significantly different from the untreated check, as well. Because the primocanes were not burned-back, the population levels of raspberry beetle were higher than we observed in adjacent cane burned blocks. The cultural practice of primocane burning in April may be associated with relative raspberry beetle abundance.

Table 2. Raspberry fruitworm field trial.

Treatment	lb(AI)/acre	Mean mortality
Actara 25G	0.06	7.8bc
Capture 2EC	0.10	3.4c
Diazinon 50W	1.0	23.2b
Imidan 70W	0.94	12.8bc
Success 2SC	0.09	23.4b
Untreated check		47.4a

Mean within columns followed by the same letter are not significantly different (Tukey HSD test, $P < 0.05$).