

Root Weevil Larvae Control in Oregon Strawberries

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A field trial was conducted in a 3-year-old field of 'Totem' strawberries located at Oregon State University's North Willamette Research and Extension Center near Aurora, Oregon, to determine effects of soil-applied insecticides on root weevil larvae populations. Experimental design was a randomized complete block with four replications. Each plot was comprised of one strawberry row, 25 ft long by 40 inches wide. Untreated plant rows, serving as buffers, separated the treated rows. Treatments were broadcast applied using a CO₂-powered backpack sprayer equipped with a two-nozzle boom at 40 psi, delivering 50 gal of water per acre.

After strawberry renovation, treatments were applied to pre-irrigated strawberry plots on July 27,

2000. Plots were irrigated again immediately after treatment applications with approximately 1.5 inches of irrigation (overhead sprinklers). Treatments were evaluated in early March 2001 for efficacy in controlling root weevil larvae by digging four strawberry plants per plot, screening soil and strawberry crowns and roots through a series of sieves, and counting the number of live larvae. The root weevil complex in this field was roughly 55 percent strawberry root weevil (*Otiorynchus ovatus*), 30 percent black vine weevil (*Otiorynchus sulcatus*), 10 percent rough strawberry root weevil (*Otiorynchus rugosostriatus*), and 5 percent *Barypeithes pellucidus* (no common name).

Treatments

Thiamethoxam (Cruiser 2SC) at 0.2 lb ai/acre
Beauveria bassiana (Naturalis-L) at 43 fl oz product/acre
Carbofuran (Furadan 4F) at 2.0 lb ai/acre
Untreated check

Results

Thiamethoxam and carbofuran resulted in significantly fewer root weevil larvae than the *Beauveria bassiana* treatment or the untreated check. These results are comparable to a similar field trial

we conducted in 1999; in that trial, thiamethoxam provided 73.5 percent control, carbofuran 72.0 percent control, *Beauveria bassiana* 0 percent control.

Table 1. Root weevil larvae control with soil-applied insecticides, North Willamette Research and Extension Center, 2001.

Treatments	Number live larvae	Control (percent)
<i>Beauveria bassiana</i> (Naturalis-L)	42.5 b*	8.0
Carbofuran (Furadan 4F)	8.0 a	82.7
Thiamethoxam (Cruiser 2SC)	10.5 a	77.3
Untreated check	46.2 b	- - -

*Means followed by the same letter within a column do not differ significantly, based on Fisher's protected LSD ($P \leq 0.05$).