

(C7)

BLUEBERRY: *Vaccinium corymbosum* L.**CITRUS THRIPS CONTROL IN SOUTHERN Highbush BLUEBERRIES IN CALIFORNIA, 2008****David R. Haviland**

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Citrus thrips: *Scirtothrips citri* (Moulton)

In the summer of 2008, we conducted a field trial to evaluate the effects of insecticides on citrus thrips in blueberries. Citrus thrips feeding causes curled discolored leaves, shortened internodes, and decreased fruiting wood quality for the following season. This trial evaluated the effects of insecticides on the numbers of thrips found on the blueberry foliage. A 3.8 acre portion of a mature blueberry field near Richgrove, Kern Co., CA was divided into 48 plots, each 4 rows (44 ft) by 58 ft long. Each contained two rows (rows 2 and 3) planted to the variety 'Star'. The other two rows (1 and 4) were planted to either the variety 'Santa Fe' or the variety 'Jubilee'. Blueberry bushes of all varieties were approximately 5 ft in height. Plots were organized into a RCBD with 4 blocks of 11 treatments and an untreated check. Treatments were applied at 100 gpa on 6 Aug 2008 using a commercial, wrap-around sprayer capable of treating two rows at a time. Nozzles on each boom were directed towards the blueberry canopy and penetration was facilitated by fans on each boom.

The effects of insecticide treatments were evaluated using beat samples from the center two rows of each plot. Samples were taken by beating an un-branched 6-in liter of new flush onto a black, 12-in by 12-in, piece of acrylic, and then counting the thrips. Ten beat samples were taken from row 3 ('Star') on all evaluation dates. Evaluation dates correspond to first treatment date were 5 Aug (pre-counts), 8 Aug (3 DAT), 12 Aug (7 DAT), 15 Aug (10 DAT), 19 Aug (14 DAT), 26 Aug (21 DAT), and 2 Sept (28 DAT). Data were analyzed by ANOVA using transformed data (square root ($x + 0.5$)) with means separated by Fisher's Protected LSD at $P > 0.05$.

All treatments provided numerical reductions in thrips density on at least one evaluation date, but only Delegate + Movento, Carzol, Delegate, Veratran D, and Success reduced numbers significantly (Table 1). Lowest thrips densities on all evaluation dates from 7 DAT to 28 DAT were found in the plots treated with the Delegate + Movento. These reductions in thrips density on plots treated with Delegate + Movento were statistically equivalent to plots treated with Delegate alone and statistically improved over plots treated with just Movento from 7 to 21 DAT. Carzol and Veratran D provided significant reductions in thrips density through 14 and 21 DAT, respectively. Significant reductions in Success plots occurred through 10 DAT. Comparisons of Delegate versus Success showed similar results from previous years' trials with Delegate having numerical, but not statistically lower thrips densities than Success through 14 DAT, but then having longer residual as shown by significant reductions at 21 DAT. Use of Movento, Novaluron, Assail, Biolink, Diazinon and Lannate did not result in significant reductions in thrips densities on any evaluation date.

Table 1. Effects of insecticide treatments on the density of citrus thrips in blueberries.

	Rate	Mean no. of citrus thrips per ten beat samples						
		Pre	3 DAT	7 DAT	10 DAT	14 DAT	21 DAT	28 DAT
Delegate + Movento ¹	6 oz + 8 fl oz	29.4a	3.0a	5.0a	3.9ab	9.7a	17.0a	20.9a
Carzol 90SP ²	1 lb	26.9a	4.2a	10.3ab	8.1ab	10.9a	28.5bc	23.3a
Delegate 25WG ¹	6 oz	23.4a	3.0a	6.4a	9.6ab	13.1a	21.1ab	24.6a
Veratran D + Molasses	15 lb + 1 gal	24.3a	1.8a	13.6bc	13.3bc	11.6a	29.6bc	24.9a
Success 2SC ¹	6 fl oz	25.8a	2.2a	6.3a	10.4ab	15.3ab	36.7c	24.9a
Movento 240SC ¹	8 fl oz	25.4a	3.5a	19.5cd	19.4cd	15.6ab	25.0abc	24.3a
Novaluron 0.83EC ²	12 fl oz	26.9a	5.9a	20.6cd	21.3cd	15.8ab	28.2bc	24.3a
Assail 30SG ³	5.3 oz	23.8a	2.6a	20.1cd	21.5cde	25.8c	35.7c	27.1a
Biolink	1 gal	24.3a	7.9a	24.7d	26.9de	24.2c	35.2c	23.9a
Diazinon 50WP ²	2 lb	29.5a	7.3a	26.2d	23.8cde	25.5c	31.9bc	28.5a
Lannate 90SP ²	1 lb	26.7a	6.9a	28.5d	36.3e	25.7c	36.6c	27.5a
Untreated Check	---	28.5a	6.2a	26.9d	32.0de	21.0bc	34.9c	28.1a

¹Dyne-Amic used as a surfactant at 0.25% v/v

²Induce used as a surfactant at 0.25% v/v

³Sylgard used as a surfactant at 4 fl oz/100 gallons

Means in a column followed by the same letter are not significantly different

(*P* > 0.5, Fisher's protected LSD) after square root (*x* + 0.5) transformation of the data. Untransformed means are shown.