

(C5)

BLUEBERRY: *Vaccinium corymbosum* L.

CITRUS THRIPS CONTROL IN SOUTHERN Highbush BLUEBERRIES IN CALIFORNIA, 2007

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Citrus thrips: *Scirtothrips citri* (Moulton)

Citrus thrips have recently become a significant pest of blueberries in the San Joaquin Valley of California; feeding by the thrips stunts plant growth, which can negatively impact the crop during the following spring. This trial was conducted near Richgrove, Tulare Co., CA to evaluate the effectiveness of insecticides against the thrips. A 3.8 acre portion of a mature blueberry field was divided into 64 plots, each 4 rows (44 ft) by 58 ft long. Plots were organized into a RCBD with 4 blocks of 14 treatments and an untreated check. Treatments were applied at 100 gpa on 8 Aug 2007, with a second application being made to one of the Movento treatments 7 days later. Applications were made using a commercial, tractor-pulled sprayer with nozzles mounted on two wrap-around spray booms. 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 10 beat samples from the center two rows of each plot. Samples were taken by beating the terminal 6 in of an un-branched shoot with new flush onto a black, 12-in by 12-in piece of acrylic, and then counting the thrips. Evaluation dates were 6 Aug (pre-counts), 14 Aug (6 DAT), 17 Aug (9 DAT), 21 Aug (13 DAT), 27 Aug (19 DAT), and 4 Sept (27 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, with the exception of Lannate and Diazinon, caused significant reductions in thrips density compared to the untreated check on at least two evaluation dates. The greatest knock-down was achieved by Carzol, Radiant, Success and Assail, which all reduced thrips densities to below 10 per beat by 6 DAT. Of these top treatments, Carzol had the longest residual, while thrips densities in plots treated with Radiant, Success and Assail increased over the next three evaluations, such that by 27 DAT they were equivalent to the untreated check. The opposite was true in plots treated with Novaluron and Movento. These insecticides had very little knock-down capabilities and only reduced thrips densities by about 50% through 13 DAT. However, residual effects of these products maintained thrips densities at low levels through 27 DAT such that they were statistically equivalent to the best treatment, Carzol, on the final evaluation date.

Table 1.

	Rate	Mean no. of citrus thrips per beat sample					
		Pre	6 DAT	9 DAT	13 DAT	19 DAT	27 DAT
Carzol 90SP	1 lb	24.9a	1.7a	3.8a	6.8a	8.3a	14.3a
Radiant SC	6 fl oz	19.9a	5.9ab	9.1b	6.7a	12.3ab	30.4cd
Success 2SC	6 fl oz	18.4a	7.4bc	12.5bcd	9.6a	16.7bcd	24.9bcd
Assail 30SG	4.5 oz	16.0a	8.7bcd	13.8bcde	11.2a	24.3cde	23.5bcd
Assail 30SG	5.3 oz	18.2a	8.9bcd	13.0bcd	10.9a	18.6bcd	30.5cd
Novaluron 0.83EC	12 fl oz	20.5a	11.6bcde	10.2bc	8.1a	15.5abc	16.8ab
Movento ¹ 150OD	5 fl oz	30.3a	13.7bcde	18.7efg	11.4a	14.8abc	12.4a
Movento ¹ 150OD	8 fl oz	28.3a	14.0bcde	17.6defg	11.0a	13.0ab	11.9a
Novaluron 0.83EC	9 fl oz	20.4a	14.1cde	14.9cdef	8.2a	13.4ab	16.8ab
Movento ^{1,2} 150OD	8, 5 fl oz ²	23.4a	17.1def	15.5def	9.7a	13.7ab	11.4a
Veratran D + molasses	15 lb + 1 gal	26.4a	17.4def	18.9efg	11.6a	16.0bc	22.9bc
Fujimite ¹ 5EC	2 pt	20.0a	17.8def	20.3fg	11.9a	19.6bcd	30.1cd
Diazinon 50WP	2 lb	28.5a	20.7ef	19.9fg	15.0a	22.8cde	31.0cd
Lannate 90SP	1 lb	21.4a	26.7f	23.2gh	12.9a	27.2de	34.6d
Untreated	---	17.9a	27.6f	28.0h	17.5a	33.4e	31.7cd

¹R-11 used as a surfactant at 0.25% v/v

²Two applications were made. The first was at 8 fl oz on 8 Aug and the second at 5 fl oz one week later.

Means in a column followed by the same letter are not significantly different ($P > 0.05$, Fisher's protected LSD) after square root ($x + 0.5$) transformation of the data. Untransformed means are shown.