

## Chilli thrips management

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### Summary

The insecticide, Sivanto<sup>®</sup>, was tested and compared to Radiant<sup>®</sup> for chilli thrips control. At the recommended rate of 14 fl oz/A, Sivanto<sup>®</sup> reduced chilli thrips on leaves and strawberries by 60-70% one-week after application. However, Sivanto<sup>®</sup> was generally not as effective as Radiant<sup>®</sup> at reducing chilli thrips or damage to strawberries. Future research will focus on when to use Sivanto<sup>®</sup> in insecticide rotations for chilli and flower thrips.

### Methods

This trial was conducted at the Gulf Coast Research and Education Center, Balm FL. Bare-root strawberry transplants ('Radiance') were set at 15 inch in-row spacing on 14 October 2015 in a raised, plastic mulch bed that was fumigated with Telone<sup>®</sup> C-35 at bed formation on 20 August 2015. Plants were fertilized with 0.6 and 0.75 lbs N/day from November to mid-January and mid-January through April, respectively. Round-up<sup>®</sup> and Chateau<sup>®</sup> were applied to row aisles before transplanting to control weeds. Plants received weekly applications of fungicides and occasional applications of DiPel<sup>®</sup> DF to control lepidopteran larvae.

Symptoms of chilli thrips injury – darkened petioles and leaf veins – appeared on strawberries early in the growing season (late-November). Plots (10 m length) were laid out in a RCBD with 4 replications in the strawberry row, with plants removed in a 1 m buffer between plots and a 2 m buffer between replications. Treatments were applied 23 December 2016 with a CO<sub>2</sub>-powered backpack sprayer at 60 PSI using a hand-held wand sprayer with two nozzles.

**\*\*\*Please note:** Sivanto<sup>®</sup> was applied at a low (14 oz/A) and high (28 oz/A) rate. However, Sivanto<sup>®</sup> is labelled at 14 oz/A per application, but up to 28 oz/A may be applied per year (2 applications).

Treatment efficacy was evaluated by selecting 10 plants per plot, including some plants displaying advanced symptoms of chilli thrips injury. These plants were rated for overall injury level using: 0 = no visible damage; 1 = up to 25% of petioles/leaves showing injury; 2 = 26-50% injury; 3 = 51-75% injury; 4 = more than 75% injury. One trifoliolate per plant and one green strawberry per plant were sampled and placed in a sealed plastic container. In the laboratory, ethanol (70%) was poured into containers, and trifoliate and berries were removed and washed with ethanol about 1 h later. Adult and larval chilli thrips in the ethanol were identified and counted under a stereomicroscope. Yield was assessed by harvesting all ripe berries per plot on 28 December and 4 January, and the number of marketable and thrips damaged berries (bronzing, scarring, cracking) counted.

## Results

Numbers of chilli thrips on strawberry leaves differed due to treatment on 30 December (7 days after application). There were fewer adults + larvae on leaves treated with Radiant®, but not Sivanto®, than untreated leaves (Table 1). Numbers of chilli thrips on unripe strawberries differed due to treatment on 25 December (2 days after application), with fewer chilli thrips on Radiant®, but not Sivanto® treated berries than untreated berries (Table 2).

Strawberry yield and percent damaged berries were not different among treatments for either harvest date (Table 3). Numbers of marketable berries tended to be greater in plots with Radiant® and higher rate Sivanto® than in control or low rate Sivanto® plots (means separation test did not identify any significantly different means).

## Disclaimer

The use of trade names in this publication is solely for the purpose of providing specific information. UF/IFAS does not guarantee or warranty the products named, and reference to them in this publication does not signify our approval to the exclusion of other products of suitable composition

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**Table 1.** Chilli thrips on strawberry ('Radiance') foliage, Balm FL 2016. Means in the same column followed by different letters are significantly different.

Treatment	Rate	Appl. Date	Chilli thrips (adults + larvae) per trifoliolate			
			22 Dec	25 Dec	30 Dec	6 Jan
Sivanto 200 SL	14 fl oz/A	23 Dec	1.5	0.9	0.7 ab	0.2
Sivanto 200 SL	28 fl oz/A	23 Dec	1.2	0.5	0.4 ab	0.2
Radiant SC	10 fl oz/A	23 Dec	2.2	0.2	0.1 b	0.0
Control	-	23 Dec	1.2	2.0	2.1 a	0.5
<i>P</i>			0.886	0.079	0.030	0.062

**Table 2.** Chilli thrips on strawberry ('Radiance') fruit, Balm FL 2016. Means in the same column followed by different letters are significantly different.

Treatment	Rate (per plot)	Appl. Date	Chilli thrips (adults + larvae) per strawberry		
			22 Dec	25 Dec	30 Dec
Sivanto 200 SL	14 fl oz/A	23 Dec	3.3	1.4 ab	2.2
Sivanto 200 SL	28 fl oz/A	23 Dec	3.4	1.1 ab	0.8
Radiant SC	10 fl oz/A	23 Dec	4.4	0.6 b	0.8
Control	-	23 Dec	4.9	2.7 a	1.5
<i>P</i>			0.586	0.057	0.566

**Table 3.** Marketable and thrips damaged strawberries ('Radiance'), Balm FL 2016.

Treatment	Rate (fl oz/A)	Appl. Date	Dec 28		Jan 4	
			Marketable	% damaged	Marketable	% damaged
Sivanto 200 SL	14	23 Dec	66.0	7.0	94.0	5.1
Sivanto 200 SL	28	23 Dec	82.3	4.6	99.8	4.1
Radiant SC	10	23 Dec	78.5	4.2	98.5	1.8
Control	-	23 Dec	63.5	8.7	86.8	4.8
<i>P</i>			0.037	0.522	0.580	0.633