

WHITE BIRD OF PARADISE: *Strelitzia Nicolai*,
'Regel & Körn'**Effect of Buprofezin and *Isaria fumosorosea*
Against Rugose Spiraling Whitefly, 2015****Vivek Kumar^{1,2}, Cindy L. McKenzie³ and Lance S. Osborne¹**

¹Mid-Florida Research and Education Center, University of Florida-IFAS, 2725, S. Binion Road, Apopka, FL-32703, Phone: 772-462-5978, Fax: 772-462-5986, Email: vivekiari@ufl.edu, ²Corresponding author, e-mail: vivekiari@ufl.edu and ³USDA, ARS, USHRL, 2001 South Rock Road, Fort Pierce, FL 34945, Tel: 772-462-5912, Fax: 772-462-5986, Email: cindy.mckenzie@ars.usda.gov

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White bird of paradise | *Strelitzia nicolai*Rugose spiraling whitefly (RSW): *Aleurodicus rugioperculatus* Martin

The objective of this study was to evaluate the efficacy of selected insecticides alone or in combination against Rugose spiraling whitefly (RSW), a new invasive pest of ornamental in Florida. The trial was conducted on an ornamental host, white bird of paradise under natural field condition at U.S. Horticultural Research Laboratory. Young host plants in three gallons plastic pots were bought from a local commercial nursery in Vero Beach, FL, and naturally infested with the RSW under greenhouse conditions ($26 \pm 3^\circ\text{C}$ and 75–80% RH). Host plants were watered as needed and fertilized using granular formula. Once plants were infested with RSW and overlapping generations were observed, plants were moved outdoors into $6 \times 6 \times 6$ ft nylon-mesh cages. The trial was setup in a completely randomized design with five replications. Treatment plots consisted of four RSW infested plants; applications were made on three plants and one was left untreated as a persistence source of insects to evaluate the residual activity of the insecticides. Treatments were applied curatively using a small hand held sprayer delivering 65.5 ml m^2 at 211 kPa. Treatments were evaluated at weekly interval by collecting five leaf discs (dia. 1.1 cm) per plot and carefully inspecting, under a dissecting micro-

scope at $12\times$ magnification. Count data were subjected to square root transformation prior to conducting the ANOVA and mean separation procedure. The data presented are the untransformed means. Means separations was performed using the Tukey's HSD test at $p < 0.05$.

RSW population varied greatly; however, a significant reduction in whitefly number was observed in all the treatments compared to check. Overall, Talus alone and its combination with PFR was found to be most effective treatment for control of RSW eggs, early instars, and late instars. The combination of Talus and PFR significantly suppressed RSW life stages soon after application and provided 63–97% reduction in eggs (Table 1), 52–99% early instars (Table 2), and 61–93% in late instars (Table 3) during 10-wk period. Talus alone also provided a significant reduction in RSW eggs (WAT 5), early instars (WAT 8), and late instars (WAT 9) compared to control. PFR alone was found to be least effective against eggs (0–90%), early instars (41–89%), and late instars (0–61%) among all the insecticides tested. No phytotoxicity symptoms were observed following any of the insecticide treatments. This research was supported by the Floriculture and Nursery Research Initiative.

Table 1

Treatments	Rate/100 gallon	Wk 0	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10
Control	–	6.64	13.7	9.0	15.6	10.7	7.04	6.56	6.1	7.8	5.8	14.3
		±1.30	±2.54a	±1.14a	±2.02a	±2.0a	±1.25a	±1.31a	±1.35a	±1.49a	±1.83a	±4.23a
PFR	14oz	7.68	1.52	2.76	7.08	7.0	3.76	6.36	2.72	4.08	7.36	8.04
		±1.52	±0.58b	±0.92b	±1.38b	±1.23ab	±0.94ab	±1.36a	±0.73ab	±1.04ab	±2.0a	±1.67a
Talus	6oz	9.44	0.24	3.64	4.48	3.92	2.36	2.64	1.96	3.36	3.08	4.28
		±2.03	±0.16b	±0.88b	±1.11b	±1.06b	±0.90b	±0.95a	±0.82b	±1.08b	±0.86a	±1.42b
PFR + Talus	14 oz + 6 oz	11.32	0.72	1.64	3.72	4.12	2.24	2.04	0.60	2.60	3.64	2.40
		±1.99	±0.36b	±0.55b	±0.96b	±1.06b	±0.81b	±0.64a	±0.45b	±1.01b	±1.11a	±0.74b
			(90)	(73)	(61)	(43)	(54)	(16)	(61)	(55)	(0)	(51)
			(99)	(72)	(80)	(74)	(76)	(72)	(77)	(70)	(63)	(79)
			(97)	(89)	(86)	(77)	(81)	(82)	(94)	(80)	(63)	(90)

Means within a column followed by the same letter are not significantly different ($P > 0.05$, Tukey's test). Henderson–Tilton's corrected percent mortality is presented in parentheses after each mean.

Table 2

Treatments	Rate/100 gallon	Wk 0	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10
Control	–	2.56	4.92	3.84	6.0	11.44	9.12	8.24	7.32	3.80	1.20	1.40
		±0.43	±1.05a	±0.97a	±1.82a	±2.25a	±1.50a	±1.71a	±1.56a	±1.02a	±0.42a	±0.40a
PFR	14oz	5.32	1.64	0.88	2.0	7.0	7.24	8.44	8.84	4.20	1.08	1.72
		±0.90	±0.39b	±0.31b	±0.61ab	±2.50a	±1.25a	±1.68a	±1.86a	±1.28a	±0.32a	±0.48a
Talus	6oz	4.52	1.08	0.84	1.36	1.24	1.36	0.80	0.16	0.08	1.48	1.24
		±1.18	±0.32b	±0.33b	±0.44b	±0.47b	±0.58b	±0.56b	±0.09b	±0.07b	±0.60a	±0.36a
PFR + Talus	14 oz + 6 oz	5.12	0.68	0.16	0.92	0.92	1.44	1.04	1.32	0.04	1.16	1.28
		±1.02	±0.24b	±0.12b	±0.39b	±0.34b	±0.81b	±0.51b	±0.85b	±0.03b	±0.46a	±0.35a
			(84)	(89)	(84)	(71)	(62)	(51)	(42)	(47)	(57)	(41)
			(88)	(88)	(87)	(94)	(92)	(95)	(99)	(99)	(30)	(50)
			(93)	(98)	(92)	(96)	(92)	(94)	(91)	(99)	(52)	(54)

Means within a column followed by the same letter are not significantly different ($p > 0.05$, Tukey's test). Henderson–Tilton's corrected percent mortality is presented in parentheses after each mean.

Table 3

Treatments	Rate/100 gallon	Wk 0	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10
Control	–	10.76	9.72	7.68	6.96	6.88	5.08	5.68	8.40	8.36	5.64	3.76
		±1.73	±1.43a	±1.40a	±1.58a	±1.43a	±1.83a	±0.98a	±1.50a	±1.56a	±1.02a	±0.92ab
PFR	14oz	10.72	6.96	3.16	2.68	2.92	4.16	4.52	6.28	6.12	9.44	5.12
		±0.96	±0.97a	±0.53ab	±0.56ab	±0.58ab	±0.94a	±1.13a	±0.96a	±1.27a	±1.32a	±1.05a
Talus	6oz	11.28	3.48	2.92	2.12	1.64	0.96	0.76	1.36	0.48	1.16	1.72
		±2.0	±0.83b	±0.78b	±0.59b	±0.51bc	±0.34b	±0.34b	±0.41b	±0.31b	±0.34b	±0.43b
PFR + Talus	14 oz + 6 oz	12.60	2.72	2.64	1.84	1.08	1.20	0.52	0.64	0.88	1.52	1.72
		±1.91	±0.50b	±0.61b	±0.64b	±0.41c	±0.43b	±0.26b	±0.31b	±0.71b	±0.41b	±0.50b
			(28)	(59)	(61)	(57)	(18)	(20)	(25)	(27)	(0)	(0)
			(66)	(64)	(71)	(77)	(82)	(87)	(85)	(95)	(80)	(56)
			(76)	(71)	(77)	(87)	(80)	(92)	(93)	(91)	(77)	(61)

Means within a column followed by the same letter are not significantly different ($p > 0.05$, Tukey's test). Henderson–Tilton's corrected percent mortality is presented in parentheses after each mean.