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PISTACHIO: *Pistacia vera* L., "Kerman"

Ferrisia gilli Control in Pistachio, 2015*

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Pistachio nut | *Pistacia vera*

Gill's mealybug | *Ferrisia gilli*

Imidacloprid; 1-[(6-chloro-3-pyridinyl)methyl]-N-nitro-2-imidazolidinimine; acetamiprid; (E)-N′-[(6-chloro-3-pyridyl)-methyl]-N2-cyano-N-methyl acetamidine; tolfenpyrad; 4-chloro-3-ethyl-1-methyl-N-[[4-(4-methylphenoxy)phenyl]-methyl]-1H-pyrazole-5-carboxamide; buprofezin; (Z)-2-[(1,1-dimethylethyl)imino]tetrahydro-3-(1-methylethyl)-5-phenyl-4H-1,3,5-thiadiazin-4-one; sulfoxaflor; N-[methyloxido[1-[6-(trifluoromethyl)-3-pyridinyl]ethyl]-?4-sulfanylidene]cyanamide; spirotetramat; cis-3-(2,5-dimethylphenyl)-8-methoxy-2-oxo-1-azaspiro(4.5)dec-3-en-4-yl-ethyl carbonate; non-ionic surfactant; polyalkyleneoxide modified polydimethylsiloxane; polyoxypropylene block copolymer; methylated vegetable oils

This project was designed to evaluate the effectiveness of insecticides for gill's mealybug treatments in pistachio. The field trial was conducted near Corcoran, Tulare Co., CA in a 0.5 acre portion of an 8-yr-old orchard with tree spacing 17 by 19 ft. Plot size was one female "Kerman" tree organized into an RCB design with eight blocks of six treatments and two untreated checks (Table 1). Treatments were applied to individual trees on 16 May (Movento), 31 May (Admire), and 7 June (Assail, Closer, Centaur, and Bexar). Foliar treatments (16 May and 7 June) were applied with a hand gun at 150 psi with a water volume equivalent to 225 gpa with the surfactant Dyne-Amic at 4 fl oz/100 gal. For the Admire Pro application (31 May), the insecticide for each tree was mixed with 1 gal of water in a 5-gal bucket. The field was preirrigated for approximately 12 hr. With the irrigation still on, 0.5 qt of the solution was poured under each of the two drip emitters for each tree at 15-min intervals for 1 hr. This was followed by an approximate 24 hr of postirrigation. Mealybug densities were evaluated in each plot prior to treatment on 16 May and then on 21 June, 1 July, 30 July, and 3 September. On each sample date, we counted the total number of mealybugs in each of 20 random clusters per tree. Data were combined to determine the average number of mealybugs per cluster for each plot. Average mealybugs per cluster were analyzed by ANOVA using transformed data (square root$(x+0.5)$) with means separated by Fisher's Protected LSD ($P=0.05$).

All treatments resulted in significant reductions in mealybug density on 1 July and 3 September (Table 1). Due to a large amount of variation there were no significant differences among treatments on 30 July at the peak of second-generation crawler emergence. At harvest on 3 September. the most effective treatments were Assail, Centaur, Closer, and Movento. Each of these treatment resulted in less than 3.8 mealybugs per cluster compared with more than 57 per cluster in the untreated checks.

Table 1

Treatment/formulation	Rate amt/acre	Mean mealybugs per cluster				
		Precount	21 June	1 July	30 July	3 Sept.
Admire Pro	14 fl oz	0.06a	1.6 b	1.1 b	96.0 a	27.2 c
Assail 30SG	8 oz	0.03a	0.2 a	0.0 a	2.2 a	0.6 a
Bexar 15SC	27 fl oz.	0.06a	0.2 a	0.5 ab	41.5 a	10.6 b
Centaur WDG	46 oz	0.17a	0.1 a	0.2 a	1.5 a	0.2 a
Closer 2SC	5.67 fl oz	0.14a	0.0 a	0.0 a	1.8 a	0.7 a
Movento 2SC	9 fl oz	0.09a	0.2 a	0.1 a	7.4 a	3.8 ab
Untreated Check 1	—	0.11a	1.6 b	2.4 c	147.7 a	57.0 d
Untreated Check 2	—	0.12a	2.5 b	2.9 c	258.8 a	58.1 d

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

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