

PEACH (*Prunus persica* 'Red Haven')
Peach leaf curl; *Taphrina deformans*
Shothole; *Wilsonomyces carpophilus*

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Comparison of fungicides, organic and synthetic, for control of peach leaf curl and shothole, 2005.

Treatments were arranged in a randomized complete block design in a block of 'Red Haven' peaches planted in 1971 on a 20 x 20 ft spacing. Each fungicide treatment consisted of 4, single tree replicates. Fungicides were applied using a hydraulic handgun sprayer at 150 psi and at a rate of 90 to 340 gal water/A. Approximately 3.3 to 12.5 gal of a spray suspension were applied per 4 trees. Dormant treatments were applied on 27 Oct 04 (50% leaf drop), 17 Dec 04, 19 Jan 05, and 17 Feb 05 (delayed dormant). Weeds in the tree row were treated with Goal 2XL (3 qt/A) plus Roundup ULTRAMAX (3 qt/A) on 31 Mar 05. Incidence of peach leaf curl was evaluated on 9 and 10 May 05 by examining terminal buds from 50 arbitrarily selected shoots from each tree and examining all lateral buds from 20 arbitrarily selected shoots. Incidence of dead terminal buds (from 50 shoots, arbitrarily selected) was determined for each tree on 18 Apr 05. Incidence of lateral bud death was determined for each tree on 21 Apr 05 by examining all lateral buds from 20 arbitrarily selected shoots. The number of stems with shothole twig cankers (50 shoots, arbitrarily selected) was determined on 15 Mar 05.

The overall dormant season rainfall was more than 16 in below normal. Symptoms of shothole as stem cankers were first noted on 28 Feb 05 while peach leaf curl was obvious starting 25 Apr 05. All fungicide treated trees had significantly less peach leaf curl than nontreated trees. Lowest amount of leaf curl on terminal or lateral shoots was on trees treated with Ziram. Trees treated organically (Lime Sulfur and Kocide) were not significantly different from Ziram treated trees. Trees treated only twice with Kocide had significantly more leaf curl than trees treated with Ziram or Lime Sulfur. There was no significant difference among treatments with respect to terminal bud death. Trees treated only twice with Kocide had significantly more lateral bud death than all other treatments including nontreated trees. All fungicide treated trees had significantly fewer shoots with shothole twig cankers than nontreated trees. Only trees treated the entire dormant season (Oct, Dec, Jan and Feb) had the lowest number of shoots with shothole twig cankers. During this below normal rainfall dormant season, there was no significant difference between trees treated twice with 4 lb/A Ziram when compared to trees treated twice with 8 lb/A Ziram. Low rates of material per A may also have contributed to these results. Organically treated trees sprayed all dormant season had as little disease if not less than trees treated with other fungicides.

Treatment & Rate/100 gal***	Application Timing**	% Peach Leaf Curl*		% Dead Terminal buds*	% Dead Lateral buds*	Shothole Twig Cankers (%)
		Infected Terminal Shoots	Infected Lateral Shoots			
Nontreated	None.....	58.5 a	37.8 a	12.5	42.0 b	71.0 a
Ziram 76 DF 2.67 lb	A and D.....	1.5 c	0.3 c	6.5	39.3 bc	34.5 b
Ziram 76 DF 2 lb	A and D.....	1.5 c	0.5 c	7.0	36.3 bcd	36.3 b
Ziram 76 DF 1.33 lb	A and D.....	2.8 c	0.5 c	10.0	30.5 cd	44.5 b
Ziram 76 DF 1.33 lb	A, B, C & D.	2.5 c	0.8 c	11.0	33.3 bcd	12.0 c
Lime Sulfur (29%) 6.67 gal	A and D					
Kocide 2000 4 lb	B and C.....	3.3 c	0.3 c	11.3	31.0 cd	12.3 c
Lime Sulfur (29%) 6.67 gal	A and D.....	3.5 c	1.8 c	9.0	28.3 d	34.0 b
Kocide 2000 4 lb	B and C.....	46.0 b	13.3 b	28.0	56.0 a	38.5 b

* Means followed by the same letter do not differ significantly based on Fisher's protected LSD (P=0.05). Means without letters were not significantly different.

** A = 27 Oct 04 (50% leaf drop), B = 17 Dec 04, C = 19 Jan 05, and D = 17 Feb 05 (delayed dormant).

*** Original target application rate was to be 300 gal water solution/A for all treatments. Lower per gal rates resulted in lower per A rates than target for all chemical applications. Rates of water used were 340 gal/A (1st application), 136 gal/A (next two applications), and 90 gal/A for the last application.