

Tree Fruit Diseases

Pear Scab

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In 1991, a trial was established to determine if using high rates of lime sulfur (LS) applied in delay dormant (DD) would reduce incidence of pear scab in an organic Bartlett pear orchard in which overwintering inoculum was present on 1-year-old wood. This treatment has thus far been uncommon in California since wood lesions have generally been discounted as a primary inoculum source.

Four treatments were applied to four .75-acre plots in a randomized complete block. Following treatment, fruit was rated twice for disease incidence (number of fruit with scab) and severity (number and size of lesions) (Table 1).

Results indicated that the DD LS treatment reduced both early season incidence and severity of pear scab compared to the normal practice of treating starting at greentip. However, continued infection periods through late June eventually evened out the treatments.

In 1992, the control plots in the same block were divided into three .25-acre (56 trees) plots. Treatments were applied to compare LS at DD alone versus the normal program beginning at greentip to see how long the effects of the DD application would last. Fruit was rated twice and results indicated one DD application applied March 6 was as effective as 6 treatments applied between March 23 and May 1. However, with continuing infection periods, only the standard program reduced late season incidence and severity (Table 2).

After two years, it appears that a DD application of LS can reduce both the incidence and severity of pear scab if the presence of overwintering inoculum on 1-year-old wood is confirmed.

The above tests utilized only organically acceptable materials. Future studies should compare DD LS in combination with standard scab materials, e.g., Ziram, Rubigan, Dithane. Also, phytotoxicity to buds, bloom and fruit should be rated; this was not done in the above trials since the fruit was utilized solely for baby food and juice.

**Table 1.** 1991 delay dormant pear scab trial, Covelo, CA.

Treatment <sup>1</sup>	Rate	Timing	Disease rating <sup>2</sup>		
			Incidence <sup>3</sup>		Severity <sup>4</sup>
			5/2	6/26	
Lime sulfur (LS) + LS + Wettable Sulfur (WS)	6 gal 5 gal + 15 lb	Delay Dormant (DD) GT + PI (7)	1.30a	20.3a	0.293a
Lime sulfur + Oil + LS + WS	6 gal + 1 gal 5 gal + 15 lb	Delay Dormant GT + PI (7)	3.20a	22.5a	0.367a
Lime sulfur + WS	5 gal + 15 lb	GT + PI (7)	8.40b	21.2a	0.270a
Untreated	---	---	24.90c	92.0b	2.72b

<sup>1</sup>DD applied every row at 6 gal/100 gal water, 400 gpa on March 16. GT + PI applied every other row in 175 or 250 gpa on 3/30, 4/5, 4/17-18, 4/20-22, 4/23-24, 5/2 and 5/18. No treatment during infection period 6/26-27.

<sup>2</sup>P=.05 (Duncan's Multiple Range).

<sup>3</sup>Incidence=number of fruit with lesions, 350 fruit per plot (5/2) or 50 fruit per plot (6/26).

<sup>4</sup>Severity based on scale of 0-5 with 0=no lesions and 5=>50% surface with lesions.

**Table 2.** 1992 delay dormant pear scab trial, Covelo, CA.

Treatment <sup>1</sup>	Rate	Timing	Disease rating <sup>2</sup>			
			Incidence <sup>3</sup>		Severity <sup>4</sup>	
			5/28	8/8	5/8	8/8
Lime sulfur	6 gal	Delay Dormant (DD)	97.4a	100.0a	2.4a	3.5b
Lime sulfur + Wettable Sulfur (WS)	7.5 gal + 15 lb	Green tip + post- infection (GT + PI) (6)	95.5a	93.1a	2.4a	2.0a
Untreated	---	---	99.5a	100.0a	3.6b	3.9b

<sup>1</sup>DD applied every row at 6 gal/100 gal water, 400 gpa on March 6. GT + PI applied every other row in 340 gpa on 3/23, 3/31 and 4/5. WS rate reduced to 7.5 lb for treatments applied 4/9, 4/13 and 5/1.

<sup>2</sup>P=.05 (Duncan's Multiple Range).

<sup>3</sup>Incidence=number of fruit with lesions, 50 fruit per plot.

<sup>4</sup>Severity based on scale of 0-5 with 0=no lesions and 5=>50% surface with lesions.