

HAZELNUT (*Corylus avellana* ‘Ennis’)
 Eastern Filbert Blight; *Anisogramma anomala*

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Evaluation of lime sulfur for possible phytotoxicity or fungicide inactivation, 2004 - 2005.

The goal of this trail was to determine if lime sulfur (targeted for big bud mites) caused any phytotoxicity or chemical inactivation when tank mixed with the second fungicide spray targeted for EFB. Healthy appearing 2-year-old ‘Ennis’ hazelnut trees were planted on 9 to 10 Feb 04 adjacent to a commercial block of diseased ‘Ennis’ trees located north of Keiser, OR. Treatments were arranged in a randomized complete block design. Each treatment consisted of 4 single tree replicates. Fungicide suspensions were applied on two sides of the tree to runoff with a backpack sprayer equipped with a hand wand. Approximately 0.5 gal of a spray suspension was used per 4 trees. Fungicide treatments were applied on 15 Mar 04 (bud break), 27 Mar 04 and 9 Apr 04 for a total of 3 applications. Lime Sulfur was tank mixed with other fungicides only during the 27 Mar 04 applications. Roundup ULTRAMAX at 2 gal/100 gal water was used between trees to control weeds on 1 Apr 04. Trees were fertilized with Triple 16 (16-16-16-6) at a rate of 1 lb/3 trees on 21 Apr 04. Trees were painted with at 50% solution of white latex paint on 29 Apr 04 on the southwest side of the trunk to prevent summer and winter sunburn. Supplemental irrigation was provided as needed during the 2004 growing season. Phytotoxicity to young shoots and leaves was evaluated on 22 Apr 04. The number of EFB cankers and total length of all cankers/tree was determined on 12 July 05.

Early spring weather was considered dry and rainfall was below normal. Spore counts were low during the entire spring infection period. Standard jar tests did not show any flocking which would have indicated a physical incompatibility with any of the fungicides tank mixed with lime sulfur. Hydrated lime did settle out quickly indicating the need for good tank agitation. Major phytotoxicity did not develop on leaves or shoots. Minor marginal leaf burning was observed on only a few widely scattered leaves through out the entire trial. No EFB cankers developed on any trees. Lack of disease may have been due to a combination of low spore numbers (similar to 1999 spring conditions), dry weather and/or overspray from the neighboring commercial orchard.

Treatment and Rate/100 gal water	Number of Applications	Ave Number of Cankers/Tree*	Total Canker Length/Tree* (cm)
Nontreated	None	0	0
Lime Sulfur (29%) at 12 gal.....	3	0	0
Flint 50 WG at 1 oz	3	0	0
Bravo Weather Stik at 32 fl oz.....	3	0	0
Orbit EC at 2.5 fl oz.....	3	0	0
Flint 50 WG at 1 oz plus.....	3		
Lime Sulfur (29%) at 12 gal**.....	1	0	0
Bravo Weather Stik at 32 fl oz plus...	3		
Lime Sulfur (29%) at 12 gal**.....	1	0	0
Orbit EC at 2.5 fl oz.....	3		
Lime Sulfur (29%) at 12 gal**.....	1	0	0
Orbit EC at 2.5 fl oz plus.....	3		
Hydrated Lime 90 WP at 25 lb.....	1	0	0

* Analysis of variance is based on log10 (x+1) transformation. Means followed by the same letter do not differ significantly based on Fisher’s protected LSD (P=0.05).

** Lime Sulfur was tank mixed with other fungicides only during the 27 Mar 04 applications.

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