HAZELNUT (*Corylus avellana* 'Ennis' and 'Royal')
Eastern Filbert Blight; *Anisogramma anomala*

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Comparison between commercial airblast and experimental backpack application of fungicides for control of eastern filbert blight, 2002 - 2003.

Translating experimental small plot data to whole orchards is problematical. A common question from growers is, how does spraying a small tree to run off with a backpack sprayer compare with spaying a mature orchard with an airblast sprayer? Decades of data from many cropping systems suggest that good coverage is the key to matching commercial success to experimental applications. EFB represents a significant evaluation challenge in mature orchards due to its unique life cycle. An experiment was designed to use our small tree system to compare application methods.

Healthy 2-year-old 'Ennis' hazelnut trees were planted into 1 gal plastic pots on 27 Feb 02. All potted trees were located adjacent to and south of a commercial block of diseased 'Ennis' trees planted near Newburg, OR. Treatments were arranged in a randomized complete block design with 8 single tree replications. A backpack sprayer equipped with a hand wand was used for some treatments. These applications were made on two sides of the potted tree to run-off. Approximately 0.8 gal of a spray suspension were applied per 8 trees. Another set of 8 potted trees was fitted with hooks to hang them from the branches of mature trees in the adjacent orchard. A commercial airblast sprayer was used to spray the mature trees that contained the hanging potted trees as is normally done for this orchard. Sprays were allowed to dry before potted trees were removed from mature trees and placed back into the adjacent plot area. Pots were hung in trees on 20 Mar 02 (budbreak), 5 and 19 Apr 02. These hanging pots were sprayed with the airblast sprayer on 24 Mar 02, 7 and 22 Apr 02. The backpack applications occurred on 25 Mar 02, 8 and 22 Apr 02, the same day as when potted trees were removed from mature trees. All potted trees were planted into the ground on 30 Apr 02. Roundup at 3 gal/100 gal water was used between trees to control weeds on 10 Jun 02. Trees were fertilized with a 16-16-16 at a rate of 1 lb/3 trees on 18 Jun 02. Trees were also painted with at 50% solution of white latex paint on 18 Jun 02 on the southwest side of the trunk to prevent summer sunburn. The number of diseased trees, cankers per tree and total canker length was determined on 21 Jul 03.

Rainfall was below normal during the spring of 2002. Some potted trees tended to dry out during the hanging period. Some of these same trees died during the summer of 2002. Spore counts tended to be lower at this site than in plots located in other areas in other years but not enough to be concerned about. There were no significant differences in canker number or length comparing fungicide treated trees with nontreated trees (Table 1). None of the trees showed any phytotoxicity during the growing season. Overall, the number of cankers per tree was uncharacteristically low for this trial. Given the spore counts, favorable weather and susceptible trees (trees from the same lot were heavily infected when planted in a different location) it is highly likely that this plot was accidentally oversprayed from the adjacent commercial orchard.

Table 1 – Potted Ennis trees

Treatment and Rate /100 gal water	Rate water/Acre (Total rate product per A)	Application Equipment	Ave Number of Cankers/Tree[1,2]	Total Canker Length[1,2](cm)
Nontreated.....…	NA……	NA	0.0	0.0
Abound 2.08 F at 3 fl oz	NA	Backpack	0.0	0.0
Abound 2.08 F at 12 fl oz	NA	Backpack	0.0	0.0
Abound 2.08 F at 3 fl oz	100 gal/A (3 fl oz)	Airblast	0.1	0.8
Abound 2.08 F at 12 fl oz	100 gal/A (12 fl oz)	Airblast	0.0	0.0
Abound 2.08 F at 3 fl oz	400 gal/A (12 fl oz)	Airblast	0.0	0.0

[1] Means without any letters did not differ significantly.
[2] Analysis of variance is based on log10 (x+1) transformation. Values presented are detransformed means.

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