

Effect of paclobutrazol (Bonzi) on the development of eastern filbert blight, 2007-2009.

Research using paclobutrazol for apple scab control has shown little to no effect on disease during the initial year of application but some disease control in the second and third years. Our objective was to determine if paclobutrazol, formulated as the product Bonzi, drenched onto the root zone of hazelnut trees could protect shoots and/or limit EFB canker development in the years after application. A group of 10 healthy appearing one-year-old ‘Ennis’ hazelnut trees growing at the B&PP Field Laboratory were drenched with a solution of 10 ppm paclobutrazol (9.5 ml Bonzi/1 gal water) on 31 Jul 07. A total of 3.8 gal solution was drenched on the 10 trees such that each tree received 1438 ml of solution. Another group of 10 trees was sprayed to runoff with a Solo backpack pump style sprayer also with 10 ppm paclobutrazol (9.5 ml Bonzi/1 gal water). A total of 1 gal solution was sprayed on 10 trees. A third group of 10 trees was left nontreated. All trees were dug and stored in sawdust during Nov 07. Trees were transplanted on 17 Jan 08 to the North Willamette Research and Extension Center, Aurora, OR. Limbs with EFB cankers were cut from a heavily diseased ‘Ennis’ orchard near Keiser, OR on 12 Dec 07. A total of 400 cankered limbs were placed above test trees on chicken wire, supported by a 6 wire horizontal trellis, on 28 Feb 08. Treatments were arranged in a randomized complete block design. Trees did not receive any fungicide treatment during the spring of 08 or 09. Sucker shoots were killed on treatment trees using Rely (60 oz/A) on 8 May and 12 Jun 08. Roundup ULTRAMAX (2 qt/100 gal) plus Oryzalin (1 qt/100 gal) plus Rely (4 qt/A) was applied to control weeds between trees on 6 May 08. Rely (4 qt/A) was used 14 May 08 for weed control followed by Preen (6 lb/1,000 sq ft, with fertilizer 9-17-9) on 4 Jun 08. Last application of herbicide for the year was Roundup ULTRAMAX (2 qt/100 gal) plus Rely (4 qt/A) on 7 Aug 08. Trees were fertilized with 46-0-0 at a rate of 1.3 lb/10 trees on 19 Jun 08. Supplemental irrigation was provided as needed during the 2008 growing season. The number of EFB cankers on the main tree trunk and total length of these cankers/tree was determined on 6 Aug 09.

There were no significant differences between any of the various treatments including shoot length. This does not allow us to make any conclusions regarding disease control with these treatments. Paclobutrazol did not seem to have an effect on shoot growth 1 or 2 years after application. Canker numbers were slow to develop and uncharacteristically low even for nontreated trees. Although spore counts were considered low the amount was similar to last year when check trees had several cankers per tree. Since ‘Ennis’ trees are susceptible the weather may have had an influence on infection levels. The spring was characterized as cold with most crops, including hazelnuts, 2 weeks later than normal in growth and development throughout the growing season. Further analysis is warranted since the only other year a similar result occurred was during the 1999 infection season. This trial was initially put in to last 3 years so another growing season will be evaluated.

Treatment, rate and application method	Ave Number of Cankers/Tree*	Total Canker Length/Tree* (cm)	Ave Shoot Length 08 Season (in)*	Ave Shoot Length 09 Season (in)*
Nontreated	0.5	6.4	7.2	8.0
Paclobutrazol (Bonzi) 10 ppm – drench application.....	0.4	5.3	9.1	7.7
Paclobutrazol (Bonzi) 10 ppm – spray application.....	0.4	4.6	6.7	7.5

* Means did not differ significantly based on Fisher’s protected LSD (P=0.05).