

EFFECT OF FUNGICIDES ON KERNEL MOLD OF HAZELNUT, 2002: The objective of this trial was to determine if kernel mold could be reduced through the use of fungicides. A block of 4 hazelnut selections (379.050, 380.057, 385.013, and 391.001) planted in 1994 on a 10 x 20 ft spacing at the Botany and Plant Pathology Field Laboratory, Corvallis, OR was selected for this trial due to a consistent high production of moldy kernels. Treatments were arranged in a 2 factor randomized design with fungicide treatment as one factor and hazelnut selection as the other factor. Each fungicide treatment was applied to 4 single trees on each of 4 hazelnut selections for a total of 16 trees. Fungicide treatments consisted of Orbit EC at 2.5 fl oz/100 gal water applied to single tree replicates of each hazelnut selection on 17 Jan (10 to 30% flowering – catkins elongate and red stigma/ styles showing) and 11 Feb (70 to 100% flowering). Another set of trees was treated with either Orbit EC at 2.5 fl oz/100 gal water or Bravo Weather Stik at 32 fl oz/100 gal water on 1 Mar (bud break), 14 Mar, 28 Mar, 18 Apr and 2 May. Another set of trees was left nontreated. Supplemental irrigation was provided once during the growing season on 31 Jul 02. Insecticides were applied on 25 Apr (Sulforix 3 gal/A) and on 8 Jul (Asana XL 10 oz/A) to control big bud mites and filbert worm, respectively. Nuts were hand harvested off of trees between 4 and 13 Sep. A total of 100 nuts were collected from each tree, dried at 110⁰F for 72 hours, cracked open and evaluated for tip discoloration (associated with *Ramularia* sp in the past) and/or mycelial growth (associated with *Cladosporium cladosporioides* in the past).

Dormant weather conditions in Western Oregon were considered wet with slightly above normal rainfall. No significant interactions were detected between the fungicide and hazelnut selection factors. Main effects for fungicide treatment were not significant at the 5% level for either tip discoloration or mycelial growth. Main effects were significant for hazelnut selection. Selections 380 and 385 developed significantly more tip discoloration than selections 379 or 391. Selection 379 developed a significantly higher number of nuts with mycelial growth than the other selections. Selection 380 developed a significantly lower number of nuts with mycelial growth than the other selections. None of the trees showed any phytotoxicity during the growing season, however, trees treated with spring applications of Orbit showed typical growth regulation activity in the form of smaller, darker green leaves. Trees treated during flowering did not appear to have any significant yield reduction.

Table 1. Fungicide treatment effects on kernel mold.

Treatment	Tip Discoloration or Decay (% kernels)*	Mycelial Growth (% kernels)*
Nontreated	20.9	9.1
Orbit EC at Flowering (2 applications)	17.8	6.5
Orbit EC during early shoot growth (5 applications)	17.8	8.6
Bravo Weather Stik during early shoot growth (5 applications)	17.5	8.6

* Means were not significantly different based on Fisher's protected LSD (P=0.05).

Table 2. Hazelnut selection effects on kernel mold.

Selection	Tip Discoloration or Decay (% kernels)	Mycelial Growth (% kernels)
379.050	10.6 a	15.8 c
380.057	28.2 b	3.1 a
385.013	25.6 b	6.9 b
391.001	9.6 a	7.1 b

* Means followed by the same letter do not differ significantly based on Fisher's protected LSD (P=0.05).