

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

J.W. Pscheidt and S. Heckert
Dept. of Botany and Plant Pathology
Oregon State University
Corvallis, OR 97331-2903

Evaluation of Cevya for management of eastern filbert blight, 2018 - 2019.

Healthy appearing two-year-old 'Ennis' hazelnut trees were planted from 5 to 7 Feb 2018 at the Botany and Plant Pathology Field Laboratory, Corvallis, OR. Limbs with EFB cankers were cut from heavily diseased trees during Jan and Feb 2018. A total of 300 cankered limbs were placed above test trees on chicken wire frames supported by a wooden trellis, on 1 Mar 2018. Treatments were arranged in a randomized complete block design. Each treatment consisted of 8 single tree replicates. Fungicides were applied to trees from two directions, until runoff, using a Stihl SG20-Pump-Style backpack sprayer equipped with a brass hollow cone nozzle. Approximately 0.26 gal of a spray suspension was used per 8 trees within each treatment. Fungicide treatments were applied on 19 Mar 2018 (bud break), 30 Mar 2018, 13 Apr 2018, and 26 Apr 2018 for a total of 4 applications. Makaze (3%) was applied as a general and/or spot treatment on 9 Apr, 7 May, 2 Jul, and 14 Aug 2018 for management of weeds. Trees were fertilized with 46-0-0 at a rate of 0.5 lb/tree on 26 Apr 2018 and 8 Apr 2019. Sucker were managed by hand cutting on 29 Apr 2019 and 26 Jul 2019. Supplemental irrigation was provided as needed during the 2018 growing season. Plant growth regulation effects on shoots were evaluated on 9 May 2018 where 0 = no effect, 1 = slight effect that is not obvious, 2 = obvious darker green leaves and shortened internodes, 3 = Deep green leaves and shortened shoots but no necrosis, 4 = intense symptoms with marginal burning, leaf necrosis and/or possible dead shoots. The number of EFB cankers on the main tree trunk and total length of these cankers/tree was determined on 5 to 9 Aug 2019.

Spring weather conditions for 2018 were considered normal until early May when frequent rainfall tapered off quickly. Symptom development was first noticed on 1 Jul 2019 as sunken cankers with a few white stroma emerging. Overall disease pressure was more normal as indicated by spore counts and canker development found on non-treated trees. Highest number of cankers per tree were found on non-treated trees which was significantly more than the number of cankers found on fungicide treated trees. Cankers did not develop on trees treated with Tilt, Quilt Xcel or the middle rate of Cevya, however, the number of cankers on any fungicide treated trees except the low rate of Cevya were not significantly different. Trees treated with products that contained propiconazole (Tilt or Quilt Xcel) developed deeper green and smaller leaves than trees treated with other products. No other phytotoxicity was observed in treated trees.

Treatment and Rate/100 gal water	Number of Applications ^x	Ave Number of Cankers/Tree ^y	Total Canker Length/Tree ^y (cm)	Growth Regulation Effect ^z
Non-treated	0	4.6 a	119.4 a	0.1 b
Tilt 3.6 E at 5 fl oz plus Syl-Coat at 3.84 fl oz.....	4	0.0 c	0.0 c	2.3 a
Quilt Xcel at 14 fl oz plus Syl-Coat at 3.84 fl oz.....	4	0.0 c	0.0 c	2.4 a
Merivon at 5 fl oz plus Syl-Coat at 3.84 fl oz.....	4	0.1 bc	1.3 c	0.1 b
Cevya (BAS 75002F) at 3 fl oz plus Syl-Coat at 3.84 fl oz.....	4	0.6 b	8.3 b	0.5 b
Cevya (BAS 75002F) at 4 fl oz plus Syl-Coat at 3.84 fl oz.....	4	0.0 c	0.0 c	0.3 b
Cevya (BAS 75002F) at 5 fl oz plus Syl-Coat at 3.84 fl oz.....	4	0.1 bc	0.9 c	0.4 b
BAS 75201F at 7 fl oz plus Syl-Coat at 3.84 fl oz.....	4	0.4 bc	6.6 bc	0.3 b

^x Fungicide treatments were applied on 19 Mar 2018 (bud break), 30 Mar 2018, 13 Apr 2018, and 26 Apr 2018.

^y Analysis of variance is based on log (x+1) transformation. Means followed by the same letter do not differ significantly based on Fisher's protected LSD ($P=0.05$).

^z Plant growth regulation effects of shoots where 0 = no effect, 1 = slight effect that is not obvious, 2 = obvious darker green leaves and shortened internodes, 3 = Deep green leaves and shortened shoots but no necrosis, 4 = intense symptoms with marginal burning, leaf necrosis and/or possible dead shoots.