

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

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Determine if drenching roots with flutrifol (TopGuard) can protect trees against eastern filbert blight, 2019 - 2020.

Drenching fungicides onto the roots of trees has not been tried before. Some fungicides are active against EFB and upwardly mobile in the tree. TopGuard (flutrifol, FRAC group 3) is the most plant mobile of all the fungicides, effective against EFB and a good candidate for this trial. Healthy appearing one-year-old ‘Ennis’ hazelnut trees were planted into pots containing potting media (rather than orchard soil) on 22 Mar 2019 at the Botany and Plant Pathology Field Laboratory, Corvallis, OR. Each 5 gal pot contained 3 to 4 small trees such that there were 8 trees for each of 2 treatments. Pots were placed in the field under cankered limbs placed on chicken wire frames supported by a wooden trellis. Pots were drench with either 0.5 gal water or 0.5 gal solution of TopGuard (14 oz/100 gal) on 13 Apr 2019, 24 Apr 2019, 8 May 2019 and 22 May 2019 for a total of 4 applications. Pots were moved into a greenhouse on the OSU campus on 11 Jun 2019 and fertilized with 2 Tablespoons Osmocote. Trees were moved to an unheated hoop house on 7 Nov 2019, repotted into individual 2 gal pots and placed into an unheated greenhouse on 5 Feb 2020 and fertilized again on 27 May 2020. Supplemental irrigation was provided as needed while growing in green or hoop houses. The number of EFB cankers on the main tree trunk and total length of these cankers/tree was determined on 30 Jul 2020.

April precipitation was 3 in above normal which led to localized flooding from April 9 to 11 near but not in the experimental area. Symptom development was early and first noticed on 26 May 2020 as sunken cankers with a few white stroma emerging. Cankers were not found on trees drenched with TopGuard while an average of 2.4 cankers developed on non-treated trees. No phytotoxicity was observed on any of the treated trees. In a nearby trial where foliar fungicides are normally tested on two-year-old trees in the field, trees treated with 4 foliar sprays of TopGuard at the same rate developed only 1 canker on 8 trees (data not shown). A similar repeat of this drench trial is underway and will be read in 2021.

Treatment and Rate/100 gal water	Number of Applications ^x	Ave Number of Cankers/Tree**	Total Canker Length/Tree** (cm)
Non-treated	0	2.4 a	39.4 a
TopGuard at 14 fl oz.....	4	0.0 b	0.0 b

* Fungicide treatments were applied on 13 Apr 2019, 24 Apr 2019, 8 May 2019 and 22 May 2019 for a total of 4 applications.

** 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 ($P=0.05$).