

Evaluation of ProLine (480 SC) fungicide for phytotoxicity on Hazelnut, 2009.

In a separate fungicide trial evaluating efficacy of fungicide products for control of Eastern Filbert Blight (EFB) it was noticed that trees treated with ProLine 480 SC plus Silwet L-77 showed bronzed and shriveled leaves, necrotic leaf margins, and dead shoot tips. To further evaluate the cause of this reaction, healthy appearing two-year-old 'Ennis' hazelnut trees were planted on 24 Apr at the Botany Plant Pathology Field Laboratory, Corvallis, OR. Trees were planted in a single row spaced approximately 3 feet apart. Trees had already broken bud with shoots approximately 1 to 2 inches in length. Trees were hand irrigated immediately after planting and as needed for the duration of the trial. Treatments were arranged in a randomized complete block design with 4 single tree replicates. A fungicide spray suspension was applied every 14 days to trees from two directions until runoff using a Solo backpack pump style sprayer. Approximately 0.4 gal of a spray suspension was used per 4 trees. A total of 3 fungicide applications were applied on 25 Apr, 7 and 21 May as is typically done for EFB management. No fertilizer or herbicide was applied to the tree row. Trees were evaluated for phytotoxicity on 1 Jun using a scale of 0 to 4, where 0 = no effect, 1 = slight bronzing of leaf margins only, 2 = bronzed leaves and slight marginal leaf burning, 3 = bronzed leaves, marginal leaf burning and necrotic leaves but shoot tips remained alive, 4 = bronzed leaves, marginal leaf burning, necrotic leaves and dead shoot tips.

Phytotoxicity symptoms developed rapidly after the second fungicide application and were visible 9 May and obvious 11 May. The greatest impact was on the newest expanding leaves and/or most juvenile tissues. Only subtle effects were observed after the first application. There was some slightly different bronzing on all trees due to sunburn which was taken into account when rating. Phytotoxicity significantly increased with increasing rates of ProLine plus Silwet. Without the addition of Silwet, ProLine treated trees had a significantly higher rating than nontreated trees. It is recommended that this chemistry not be registered for use on hazelnuts.

Treatment and Rate/100 gal water	Phytotoxicity Rating*	
Nontreated	0.3	d
ProLine 480 SC at 1 fl oz	1.8	bc
ProLine 480 SC at 2.5 fl oz	2.5	bc
ProLine 480 SC at 5 fl oz	2.5	bc
ProLine 480 SC at 1 fl oz plus Silwet L-77 at 0.1% V/V	1.5	c
ProLine 480 SC at 2.5 fl oz plus Silwet L-77 at 0.1% V/V	2.8	b
ProLine 480 SC at 5 fl oz plus Silwet L-77 at 0.1% V/V	4.0	a

* Scale was from 0 to 4, where 0 = no effect, 1 = slight bronzing of leaf margins only, 2 = bronzed leaves, necrotic spots and/or slight marginal leaf burning, 3 = bronzed leaves, marginal leaf burning and necrotic leaves but shoot tips remained alive, 4 = bronzed leaves, marginal leaf burning, necrotic leaves and dead shoot tips. Means followed by the same letter do not differ significantly based on Fisher's protected LSD (P=0.05).