

APPLE (*Malus domestica* 'Red Delicious')
Scab; *Venturia inaequalis*

J. W. Pscheidt and John P. Bassinette
Dept. of Botany and Plant Pathology
Oregon State University
Corvallis, OR 97331-2903

Evaluation of a growth regulator for control of scab on Red Delicious apple, 2008

Fungicide treatments were arranged in a completely randomized design in a block of 'Red Delicious' apples planted in 1951 on M-4 rootstock at 20 x 20 ft spacing. Each treatment consisted of 4 single tree replicates. Fungicide treatments were applied using a hydraulic handgun sprayer at approximately 110 psi such that 5 to 6 gal of a spray suspension were applied per 4 trees (135 to 162 gal/A) depending on the time of year. Treatments were applied on 24 Apr (pink bud), 8 May (full bloom), and 4 Jun (cover, 1/2 inch fruit). Apple scab infection periods were monitored using an Adcon A730 weather station equipped with standard sensors. Using a modified primary infection model (wet periods start with rain and end with 8 hr drying time), a total of 6 infection periods were detected from early Apr through Jun: 2 high infection periods (7 and 19 Apr); 1 moderate infection period (29 Apr) and 3 low infection periods (5 and 23 Apr, and 2 Jun). Trees were lightly pruned to remove dead branches and open the canopy on 20 to 21 Mar. No insecticides were applied to the block. Weeds, in the tree row, were treated with Goaltender (2 qt/A) plus Round-up Ultramax (2 qt/A) on 25 Mar. The entire block of trees was irrigated using low angle sprinkler heads for 8 hours in late Jul. The incidence of leaf scab was determined on 31 Jul and 4 Aug by examining all leaves from 20 arbitrarily selected vegetative terminal shoots (270 to 320 leaves) from each tree. Incidence of scab on fruit was determined on 8 Aug by examining 100 fruit arbitrarily selected from each tree. Terminal shoot length was determined on 18 Aug by measuring the length of 20 arbitrarily selected vegetative shoots from each tree. Fruit width and length was determined on 8 Oct by picking 50 arbitrarily selected fruit and placing them in a measuring trough.

Spring weather conditions during 2008 in Western Oregon were considered cool resulting in slow crop development and a 2 week delay in major growth stages through the growing season. First scab lesions were observed on 5 May. Only trees treated with Banner Maxx plus OHP 6672 three times had significantly less apple scab on the leaves than nontreated trees. Only trees treated with Banner Maxx plus OHP 6672 had significantly less fruit scab than nontreated trees. The single application called for in protocols was made after several scab infection periods which might explain the poor scab control in this block. There were no significant differences among the various treatments with respect to average shoot length. Fruit on trees treated with CVG-349 had the lowest width to length ratio resulting in "flat" appearing apples. Fruit on trees treated with CVG-350 had significantly lower width to length ratios than nontreated trees but it was not as noticeable as in trees treated with CVG-349.

Treatment & Rate/100 gal	Time of Application*	Apple Scab**		Ave. Shoot Length (in)**	Fruit width to length ratio**
		Leaves (%)	Fruit (%)		
Nontreated	None	61.0 ab	80.3 a	19.1	0.97 a
CVG-349 at 87 oz plus					
Quest at 32 oz plus					
Nufilm at 16 oz	A.....	52.0 b	70.3 a	19.6	0.89 d
CVG-350 at 43.5 oz plus					
Quest at 32 oz plus					
Nufilm at 16 oz	A	56.3 ab	63.5 a	18.2	0.93 c
CVG-350 at 58 oz plus					
Quest at 32 oz plus					
Nufilm at 16 oz	A.....	61.0 ab	71.3 a	19.0	0.94 bc
Banner Maxx at 4 fl oz plus					
OHP 6672 at 20 fl oz	A.....	64.8 a	29.0 b	16.5	0.96 ab
Banner Maxx at 4 fl oz plus					
OHP 6672 at 20 fl oz	A, B, C.....	38.8 c	17.0 b	17.6	0.94 bc

* Treatments were applied on A = 24 Apr (pink), B= 8 May (full bloom) and/or C = 4 Jun (cover, 1/2 inch fruit).

** Means followed by the same letter do not differ significantly based on Fisher's protected LSD (P=0.05). Means without letters do not differ significantly.