

APPLE (*Malus domestica* 'Braeburn')  
Scab; *Venturia inaequalis*  
Powdery Mildew; *Podosphaera leucotricha*

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FUNGICIDES FOR CONTROL OF APPLE SCAB AND POWDERY MILDEW, 2001: Fungicide treatments were arranged in a randomized complete block design in a block of 'Braeburn' apples on ELMA-111 rootstock planted in 1995 on 20 x 20 ft spacing. Each treatment consisted of 4 single tree replicates. Fungicide treatments were applied using a hydraulic handgun sprayer at 100-150 psi at a rate of 140-190 gal water/A. Approximately 5-7 gal of a spray suspension were applied per 4 trees depending on the time of year. Treatments were applied on 23 Mar (prepink), 9 Apr (78% pink), 21 Apr (43% full bloom), 3 May (90% petal fall), 17 May (1<sup>st</sup> cover), 31 May (2<sup>nd</sup> cover) and 14 Jun (3<sup>rd</sup> cover). Urea fertilizer was spread within tree rows on 16 Mar at 27 lb/A. Insecticides were applied to the entire block using a Rear's air blast speed sprayer on 22 May (Diazinon 50W 2 lb/A), 13 Jun (Diazinon 50W 4 lb/A), and 14 Aug (Success 8 oz/A) for leaf roller and codling moth management. Weeds were controlled in the tree row floor by using Roundup Ultra (2 qt/A) tank mixed with Goal 2xl (3 qt/A) applied on 20 Feb; Gramoxone Xtra applied 3 May at 3 pt/A and again on 22 May at 2 qt/A. Apple scab infection periods were monitored using a Luft Agro-Meteorological station (HP-100). Using a modified primary infection model (wet periods start with rain and end with 8 hr drying time), a total of 10 infection periods were detected from bud break in Mar through Jun: 3 high infection periods (27 Mar, 14 May and 26 Jun); 3 moderate infection periods (24 Mar, 4 and 11 Jun); and 4 light infection periods (10, 27 and 30 Apr and 24 Jun). The most important periods were likely those on 24 and 27 Mar and on 14 May. The incidence of leaf scab and powdery mildew was determined on 2 Jul by examining all leaves from 20 vegetative shoots (388-470 leaves) randomly selected from the lower portion of each tree. Incidence of fruit scab and russet was evaluated on 15 Oct by picking and examining 56-100 fruit/tree. (Relatively few trees had less than 100 fruit.)

Spring weather conditions in Western Oregon were considered dry with 50% below normal rainfall. Apple scab disease pressure was considered low. All fungicide treated trees had significantly less apple scab on leaves or fruit than nontreated trees. There were no significant differences in apple scab among the various treatments, except there was significantly more fruit scab found on trees treated with Thiram Granuflo alone. All fungicide treated trees had significantly less powdery mildew on leaves than nontreated trees. Lowest number of leaves with powdery mildew were found on trees treated with Rally alone or Rally tank mixed with Penncozeb. However, the number found on other fungicide treated trees were not significantly different, except for trees treated with Thiram Granuflo alone or Thiram Granuflo tank mixed with Bayleton. There were no significant differences in fruit russet among the various treatments. No phytotoxicity was observed on any trees treated with any fungicide.

Treatment & Rate/A	Time of Application	Apple Scab*		Powdery Mildew	Fruit Russet
		Leaves (%)	Fruit (%)	Leaves (%)*	(%)*
Nontreated .....	none .....	50.0 a	100 a	15.8 a	3.1
Rally 40 W 5 oz.....	All.....	0.2 b	0.3 c	0.1 d	2.3
Rally 40 W 5 oz +					
Penncozeb 75 DF 3 lb .....	All.....	0.0 b	0.0 c	0.1 d	4.1
Rally 40 W 5 oz +					
Penncozeb 75 DF 3 lb then .....	PP, P, FB, PF				
Microthiol Disperss 80 WG 15 lb..	C1, C2, C3.....	0.1 b	0.0 c	1.5 cd	1.5
Procure 50 WS 12 oz +					
Dithane 75 DF 3 lb.....	All.....	0.2 b	0.0 c	0.7 cd	1.8
Rally 40 W 5 oz alternate.....					
Sovran 50 WG 4 oz.....	PP, FB, C1, C3				
Sovran 50 WG 4 oz.....	P, PF, C2.....	0.2 b	0.3 c	0.2 cd	1.5
Sovran 50 WG 4 oz alternate.....					
Rally 40 W 5 oz .....	PP, FB, C1, C3				
Rally 40 W 5 oz .....	P, PF, C2.....	0.1 b	0.0 c	0.6 cd	2.1
Flint 50 WG 2.5 oz alternate.....					
Procure 50 WS 12 oz .....	PP, FB, C1, C3				
Procure 50 WS 12 oz .....	P, PF, C2.....	0.1 b	0.0 c	0.4 cd	3.5
Thiram Granuflo 5 lb.....	All.....	0.7 b	1.1 b	8.1 b	1.7
Thiram Granuflo 3.2 lb +					
Bayleton 50 DF 6 oz then .....	PP, P, FB, PF				
Thiram Granuflo 5 lb.....	C1, C2, C3.....	1.1 b	0.0 c	3.8 c	1.0
Thiram Granuflo 3.2 lb +					
Bayleton 50 DF 6 oz then .....	PP, P, FB, PF				
Ziram Granuflo 5 lb.....	C1, C2, C3.....	1.4 b	0.3 c	2.7 cd	2.7

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