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

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FUNGICIDES FOR CONTROL OF APPLE SCAB AND POWDERY MILDEW, 2002: 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 6 single tree replicates. Fungicide treatments were applied using a hydraulic handgun sprayer at 150 psi at a rate of 182 to 218 gal water/A. Approximately 10 to12 gal of a spray suspension were applied per 6 trees depending on the time of year. Treatments were applied on 27 Mar (bud break; application only for trees treated with BAS 516), 8 Apr (90% prepink), 23-25 Apr (70% full bloom), 8-9 May (80% petal fall), 23-24 May (1st cover), 6-7 Jun (2nd cover) and 20-21 Jun (3rd cover). No fertilizer was spread within tree rows. Insecticides were applied to the entire block using a Rear's air blast speed sprayer on 20 Mar (Supreme Oil 5 gal/A), 28 May (Diazinon 50W 4 lb/A), and 25 Jun (Success 10 oz/A) for mite, leaf roller and coddling moth management. Weeds were controlled in the tree row floor by using Glyphos xtra (2 qt/A) tank mixed with Diuron 4 L (52 oz/A) on 28 Mar. All herbicide rates are based on in the tree row area. 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 11 infection periods were detected from bud break in late Mar through Jun: 5 high infection periods (9 & 12 Apr, 19 & 27 May and 27 Jun); 1 moderate infection period (17 Jun); and 5 light infection periods (5, 10, 16 & 26 Apr and 8 Jun). The incidence of leaf scab and powdery mildew was determined on 15 to 19 Jul by examining all leaves from 20 vegetative shoots (359 to 497 leaves) randomly selected from each tree. Incidence of fruit scab and russet was evaluated on 18 to 25 Sep by picking and examining 100 fruit/tree.

Spring and summer weather conditions in Western Oregon were considered dry with below normal rainfall. 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 leaf and fruit scab found on trees treated with Procure or Rally alone. All fungicide treated trees had significantly less powdery mildew on leaves than nontreated trees. Lowest number of leaves with powdery mildew was found on trees treated with Procure 50 WS alone. However, the number found on other fungicide treated trees were not significantly different, except for trees treated with Syllit alone or a combination of Rally followed by Quintec plus Syllit. All fungicide treated trees had significantly less fruit russet than nontreated trees. There were no significant differences in fruit russet among the various treatments, except there was significantly more found on trees treated with Syllit alone. There was no significant difference in any disease measured between trees treated with Procure 50 WS plus Dithane and Procure 4 SC plus Dithane. Trees treated with Quintec plus Syllit had significantly less powdery mildew and fruit russet than nontreated trees. No phytotoxicity was observed on any trees treated with any fungicide.

Treatment & Rate/A	Time of Application*	Apple Scab** Leaves (%)	Apple Scab** Fruit (%)	Powdery Mildew Leaves (%)**	Fruit Russet (%)**
Nontreated ……	none ……	67.0 a	98.8 a	39.3 a	37.7 a
Procure 50 WS 12 oz …….	All……	8.5 b	11.3 b	1.1 d	3.2 c
Procure 50 WS 12 oz + Dithane 75 DF 3 lb…….	All……..	0.5 c	0.2 d	1.7 d	0.8 c
Procure 4 SC 12 fl oz + Dithane 75 DF 3 lb…….	All……..	0.2 c	0.3 d	1.9 cd	1.0 c
Flint 50 WG 2.5 oz alternate Procure 50 WS 12 oz ……..	PP, PF, 2C FB, 1C, 3C….	0.7 c	0.5 d	2.0 cd	0.8 c
Flint 50 WG 2.5 oz ……..	All……..	0.1 c	0.3 d	5.8 cd	1.5 c
Sovran 50 WG 4 oz alternate Rally 40 W 5 oz ……	PP, PF, 2C FB, 1C, 3C….	0.5 c	0.5 d	2.6 cd	3.7 bc
BAS 516 at 0.394 lb/100 gal or 11.4 to 13.7 oz/A……..……..	All (+ 1 more)	0.2 c	0.3 d	5.6 cd	1.8 c
Quintec 10 fl oz plus Syllit 65 WP 3 lb……..	All……..	0.2 c	0.0 d	6.8 cd	4.0 bc
Rally 40 W 5 oz then…… Quintec 10 fl oz plus Syllit 65 WP 3 lb……..	PB and FB All others….	1.1 c	1.5 d	9.1 bc	2.2 c
Syllit 65 WP 3 lb	All……..	0.4 c	0.2 d	14.9 b	8.5 b
Rally 40 W 3.5 oz ……	All……..	6.3 b	8.0 c	1.2 d	2.0 c
Rally 40 W 3.5 oz + Captan 50 WP 4 lb ……	All……..	0.2 c	0.2 d	1.5 d	1.3 c
Rally 40 W 3.5 oz + Captan 80 WP 2.5 lb ……	All……..	0.2 c	0.0 d	1.3 d	2.3 c
Rally 40 W 5 oz + Ferbam Granuflo 3 lb then Sovran 50 WG 4 oz + Vangard 3 oz then Procure 50 WS 10 oz + Captan 50 WP 4 lb then Flint 50 WG 2.5 oz + Syllit 65 WP 1 lb then Rubigan 10 fl oz + Pencozeb 75 DF 3 lb then Sovran50 WG 4 oz + Ziram Granuflo 6 lb …….	PP FB PF 1C 2C 3C……..	0.5 c	0.2 d	4.2 cd	1.7 c

* Treatments were applied on 27 Mar (bud break; application only for trees treated with BAS 516), 8 Apr (90% prepink, PP), 23-25 Apr (70% full bloom, FB), 8-9 May (80% petal fall, PF), 23-24 May (1st cover, 1C), 6-7 Jun (2nd cover, 2C) and 20-21 Jun (3rd cover, 3C).

** Means followed by the same letter do not differ significantly based on Fisher's protected LSD (P=0.05).