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

J. W. Pscheidt and L. D. Wallace
Dept. of Botany and Plant Pathology
Oregon State University
Corvallis, OR 97331-2903

EFFICACY OF FUNGICIDES FOR CONTROL OF APPLE SCAB, 2000: Fungicide treatments were arranged in a randomized complete block design in a block of 'Golden Delicious' apples on M-26 rootstock planted in 1979 on a 20 x 20-ft spacing. Each treatment consisted of 4 single tree replicates. Fungicide treatments were applied using a hydraulic handgun sprayer at 200 psi at a rate of 200 gal water/A. Approximately 6-8 gal of a spray suspension were applied per 4 trees depending on the time of year. Treatments were applied on 11 Apr (90% prepink), 24 Apr (80% full bloom), 12 May (100% petal fall), 2 Jun (1st cover), and 19 Jun (2nd cover). On 2 Jun, one of the trees treated with the high rate of RH-164980 was accidentally sprayed with the high rate of RH-177796. Also, on 19 Jun, one of the trees treated with the middle rate of RH-164980 was accidentally sprayed with the low rate of RH-164090. Insecticides were applied to the entire block using an air blast speed sprayer on 7 Mar (Weco Supreme Oil at 4 gal/A plus Diazinon 50 WP at 4 lb/A), 28 Jun (Guthion at 2 lb/A), and 9 Aug (Diazinon 50 WP at 4 lb/A) for rosey apple aphid and coddling moth management. Goal 2xL (3 qt/A) tank mixed with Gyphos (2 qt/A) and R-11 (0.5%) was applied to control weeds in the tree row floor on 6 Jun. Apple scab infection periods were monitored using a Luft Agro-Meterological 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 Apr through Jun: 4 high infection periods (14 Apr, 9 May, 6 and 11 Jun); 2 moderate infection periods (12 and 21 Apr); and 4 light infection periods (28 Apr, 1, 7 and 27 May). The incidence of leaf scab and powdery mildew was determined on 8 Jun by examining all leaves from 10 vegetative shoots (116-142 leaves) randomly selected from the lower portion of each tree. A fruit assessment was performed on 23 Jun by examining 100 fruit per tree for incidence of apple scab.

All fungicide treated trees had significantly less leaf and fruit scab than nontreated trees. Best leaf scab control was on trees treated with Flint, Sovran or Rally, however, leaf scab on trees treated with the high rate of RH-177796 was not significantly different. Fruit scab was not observed on trees treated with Flint or Rally, however, the incidence of fruit scab on trees treated with Sovran and the middle and high rate of RH-177796 was not significantly different. There was no significant difference when the percentage of leaves with powdery mildew was compared among all treatments. No major phytotoxicity was observed on any trees treated with any fungicide. The product RH-177796 was especially thick and viscous, like glue, on very cold mornings. The product RH-164090 tended to settle out within a short time on a shelf.

	Apple Scab		Powdery Mildew
Treatment & Rate/A	Leaves (%)*	Fruit (%)*	Leaves (%)**
Nontreated ……..	73.9 a	83.8 a	4.9
Rally 40 WP 5 oz + Dithane Rainshield 75 DF 2.8 lb .	7.2 f	0.0 f	0.4
RH-164090 at 0.57 fl oz + Latron B-1956 at 8 fl oz……	58.9 b	44.5 c	3.0
RH-164090 at 1.14 fl oz + Latron B-1956 at 8 fl oz……	49.3 bcd	43.8 cd	4.1
RH-164090 at 2.28 fl oz + Latron B-1956 at 8 fl oz……	41.3 cd	25.0 e	3.0
RH-164980 at 0.57 fl oz + Latron B-1956 at 8 fl oz……	59.9 b	64.9 b	4.3
RH-164980 at 1.14 fl oz + Latron B-1956 at 8 fl oz……	53.2 bc	39.9 cde	4.1
RH-164980 at 2.28 fl oz + Latron B-1956 at 8 fl oz……	46.9 bcd	31.8 cde	3.9
RH-177796 at 0.57 fl oz + Latron B-1956 at 8 fl oz……	37.8 d	29.0 de	2.9
RH-177796 at 1.14 fl oz + Latron B-1956 at 8 fl oz……	21.1 e	9.2 f	3.5
RH-177796 at 2.28 fl oz + Latron B-1956 at 8 fl oz……	8.2 ef	3.0 f	2.7
Flint 50 WG at 2 oz……..	0.7 f	0.0 f	0.4
Sovran 50 WG at 4 oz or ……	2.0 f	0.5 f	0.8

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

** Means do not differ significantly based on Fisher's protected LSD (P=0.05).