

APPLE (*Malus domestica* ‘Rome’)
Scab; *Venturia inaequalis*
Powdery Mildew; *Podosphaera leucotricha*

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Evaluation of fungicides for management of apple scab and powdery mildew on Rome, 2018

Fungicide treatments were arranged in a randomized complete block design in a block of ‘Rome’ apples on M-7 rootstock planted in 1979 on 20 x 20 ft spacing. Each treatment consisted of 4 single tree replicates. Fungicide treatments were applied using a hydraulic handgun sprayer at approximately 100 psi such that 3 to 5 gal of a spray suspension were applied per 4 trees (82 to 136 gal/A) depending on the time of year. Treatments were applied on 17 Apr (tight cluster), 26 Apr (pink), 7 May (full bloom to petal fall), 21 May (1st cover), 4 Jun (2nd cover) and 18 Jun (3rd cover). Trees were pruned from 13 to 20 Feb. No fertilizer was spread within tree rows. A dormant oil spray of Omni supreme-oil (1.5 gal/A) was applied on 21 Feb for aphid management. Assail 70 WP (3 oz/A) was applied 24 May for aphid and codling moth management. Insecticide sprays were applied to the entire block using a Rear’s air blast speed sprayer. Weedbar 64 (64 fl oz/A) was applied on 5 Mar and Casaron CS (2.5 gal/A) was applied on 16 Mar for weed control. Apple scab infection periods were monitored using an Adcon 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 5 infection periods were detected from mid-Apr through Jun: 2 high infection periods (27 Apr and 10 Jun) and 3 moderate infection periods (14 and 16 Apr and 8 Jun). The incidence of leaf scab and powdery mildew was determined on 17 and 18 Jul, by examining all leaves from 20 arbitrarily selected vegetative shoots (204 to 293 leaves for an average of 249) from each tree. Incidence of scab on fruit and fruit russet was determined on 7 and 8 Aug by examining 100 fruit arbitrarily selected from each tree.

Spring weather conditions were considered normal until early May when frequent rainfall tapered off quickly. Shoots covered with powdery mildew due to infection the previous year were observed on 30 Apr. Scab was first observed on non-treated crabapple trees in a nearby block on 11 Apr and in this block on 30 Apr. All fungicide treated trees had significantly fewer leaves or fruit with scab or leaves with powdery mildew or russeted fruit than non-treated trees. Lowest level of apple scab on leaves was found in trees treated with Sercadis during bloom, however, leaf scab on trees treated all other materials at bloom were not significantly different. Lowest level of apple scab on fruit was found on trees treated with Aprovia during bloom, however, fruit scab on trees treated with the high rate of S-2399 during bloom were not significantly different. Lowest level of powdery mildew on leaves was found in trees treated with Sercadis during bloom, however, powdery mildew on trees treated with other materials at bloom were not significantly different. Lowest level of fruit russet was found in trees treated with the high rate of S-2399 during bloom, however, fruit russet on trees treated with other materials at bloom were not significantly different. Although no phytotoxicity was observed in trees treated with any of the various materials used, a very subtle flower necrosis was observed on 30 Apr on trees treated with Luna Sensation plus Syl-Coat.

Treatment & Rate/A or /100 gal as indicated below	Time of Application*	Apple Scab**		Powdery Mildew Leaves (%)**	Fruit Russet (%)**
		Leaves (%)	Fruit (%)		
Non-treated	None	53.5 a	67.8 a	53.5 a	25.5 a
Koverall 75 WG at 3 lb then					
Luna Sensation at 5 fl oz plus					
Syl-Coat at 8 fl oz/100 gal alternate	B and D				
Inspire Super at 12 fl oz then	C				
Captan 80 WDG at 5 lb.....	E and F.....	16.5 b	23.5 cd	16.5 b	8.8 b
Koverall 75 WG at 3 lb then					
Aprovia at 5.54 fl oz plus					
Syl-Coat at 8 fl oz/100 gal alternate	B and D				
Inspire Super at 12 fl oz then	C				
Captan 80 WDG at 5 lb.....	E and F.....	19.3 b	14.8 e	19.3 b	9.3 b
Koverall 75 WG at 3 lb then					
Sercadis at 3.5 fl oz plus					
Syl-Coat at 8 fl oz/100 gal alternate	B and D				
Inspire Super at 12 fl oz then	C				
Captan 80 WDG at 5 lb.....	E and F.....	14.3 b	37.5 b	14.3 b	9.3 b
Koverall 75 WG at 3 lb then					
S-2399 at 2.01 fl oz plus					
Syl-Coat at 8 fl oz/100 gal alternate	B and D				
Inspire Super at 12 fl oz then	C				
Captan 80 WDG at 5 lb.....	E and F.....	17.8 b	26.0 c	17.8 b	8.3 b
Koverall 75 WG at 3 lb then					
S-2399 at 3 fl oz plus					
Syl-Coat at 8 fl oz/100 gal alternate	B and D				
Inspire Super at 12 fl oz then	C				
Captan 80 WDG at 5 lb.....	E and F.....	14.8 b	17.0 de	14.8 b	7.8 b

* Treatments were applied on A = 17 Apr (tight cluster), B = 26 Apr (pink), C = 7 May (full bloom to petal fall), D = 21 May (1st cover), E = 4 Jun (2nd cover) and F = 18 Jun (3rd cover).

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