

F. Meyer

NOT FOR PUBLICATION

1987 RESULTS OF APPLE
FUNGICIDE TRIALS
IN THE HUDSON VALLEY

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REPORT FOR NY, NEW ENGLAND, CANADIAN FRUIT WORKERS
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1987 WETTING PERIODS AND SCAB SPORE DISCHARGE DATA
Hudson Valley Laboratory, Highland, NY

McIntosh growth stages	Wetting period					Squash mts: Cumm. % empty asci	Burkard: % of total season's spores	Mill's periods		Cedar rust infect
	Start Date	Time	Hrs wet	Avg temp (F)	Rain			1°	2°	
GT (3/29)	3/30	1800	30	52	1.42		0.6	H		
	4/2	1545	20	43	0.04		0.0	-		
	4/3	2245	29	49	3.43	1.0 (4/3)	0.6	M		
	4/5	2200	39	46	0.65		2.7	H		(major inf.per.)
QIG (4/6)	4/8	0100	7	40	0.03	7.3 (4/8)	0.0	-		
HIG (4/10)	4/12	2300	14	50	1.19		16.5	L		
	4/17	0015	34	51	0.57	14.2 (4/13)	26.0	H		(major inf.per.)
TC (4/18)						31.7 (4/21)				
PK (4/22)	4/24	1830	11	40	0.26		11.9	-		
	4/28	0430	22.5	37	0.14 snow		7.0	-		
B (4/29)						53.5 (4/29)				
L	5/3	1600	16	45	0.62		25.1	-	L	L
O	5/4	1900	17	44	0.13	71.1 (5/4)	|| Split wetting 5.8			
O	5/5	1500	20	46	0.16				M	H	H
M (5/10)						72.0 (5/11)				
PF (5/16)	5/18	1615	21	55	0.48		1.2	M	H	H
	5/24	0400	7	60	0.02		0.2	-	L	L
	5/26	2345	14	54	0.47	90.3 (5/26)	1.5	L	M	M
	5/31	1330	11	75	0.02		0.4	L	M	M
	6/1	1830	29	68	0.64	92.0 (6/ 1)	0.4	H	H	H
	6/3	1715	40.5	63	0.16		0.1	H	H	H
	6/7	0820	26	60	0.04		0	H	H	H
	END OF PRIMARY SCAB SEASON									
	6/12	0800	9	66	0.19			-	M	
	6/13	0100	7	65	Trace			-	-	
	6/13	1820	14	64	0.01			-	H	
	6/20	2000	21.5	67	0.33			-	H	
	6/22	0030	32	70	0.12			-	H	
	6/27	0100	14	65	0.16			-	H	
	7/2	1000	29	66	1.01			-	H	
	7/7	0400	51	68	1.30			-	H	
	7/11	1600	16	72	0.67			-	H	
	7/14	1345	12.5	69	0.86			-	H	
	7/20	0945	4.5	75	0.09			-	H	
	7/25	2100	17	71	0.44			-	-	
	7/30	2200	10	65	0.15			-	H	
	8/ 2	1400	21	69	0.57			-	M	
	8/5	1700	14	63	0.08			-	H	
	8/9	1600	25	65	0.27			-	H	
	8/19	2200	12	63	0.25			-	H	
	8/27	0200	57	56	2.54			-	H	
	8/29	1930	14.5	56	0.02			-	H	
	8/31	2200	11.0	61	0.30			-	M	

1987 MAXIMUM AND MINIMUM TEMPERATURES AND PRECIPITATION
Hudson Valley Laboratory, Highland, NY

All readings were taken at 0800 EST on the dates indicated

Date	April		May		June		July		August		September	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	65	30	53	34	89	66	90	77	79	55	77	57
2	45	24	64	35	87	66	79	65	82	57	72	48
3	60	36	68	43	77	62	68	62	71	58	67	48
4	51	39	58	42	66	60	83	64	88	63	70	44
5	61	39	55	42	68	61	87	57	90	68	72	45
6	53	44	49	45	77	50	83	61	78	60	73	54
7	48	44	60	40	72	46	80	58	79	62	77	58
8	51	36	75	45	71	54	72	61	80	66	75	65
9	52	40	65	36	82	61	83	70	86	64	73	66
10	58	35	78	50	79	54	90	70	70	61	81	58
11	71	36	86	53	73	43	92	69	72	56	79	58
12	76	45	78	54	77	63	91	68	80	51	76	61
13	68	43	74	39	76	62	92	68	79	53	65	61
14	51	36	69	33	85	57	88	73	82	55	66	62
15	67	42	73	48	92	55	86	56	82	58	77	47
16	65	42	75	40	87	58	75	52	88	62	75	50
17	52	44	68	47	78	50	72	49	92	68	78	53
18	65	47	89	52	78	50	81	55	94	73	67	59
19	70	57	78	49	83	56	90	70	91	57	60	52
20	73	54	57	49	90	64	81	65	90	59	56	53
21	74	57	59	49	86	62	84	77	83	50	60	55
22	80	48	72	50	68	63	90	66	85	58	68	57
23	61	44	80	63	74	69	93	66	82	59	71	51
24	56	47	83	56	75	53	92	74	74	47	68	55
25	60	40	74	54	84	59	93	70	70	44	72	41
26	60	35	65	53	90	60	92	68	77	47	60	37
27	65	31	67	52	66	62	84	58	78	55	68	44
28	62	33	62	52	71	57	88	58	66	56	70	45
29	50	35	85	62	76	55	81	53	59	56	72	53
30	58	43	92	63	86	66	77	53	76	51	81	55
31			94	67			81	61	77	50		

0.30

0.57

0.08

0.28

0.22

0.80

0.27

0.67

0.86

0.08

0.08

0.14

0.43

0.13

0.02

0.16

0.01

0.48

0.25

0.14

0.08

0.02

0.26

0.46

0.01

0.14

0.38

0.06

2.27

0.82

0.03

0.45

1.09

1.00

0.01

0.15

HUDSON VALLEY LAB M.26 ORCHARD SPRAY SCHEDULE

	APRIL			MAY					JUNE			JULY	
	10	20	23	2	7	12	18	21	28	5	23	9	29
1. Control													
7-10 DAY APPLICATION SCHEDULE													
2. Funginex 18.2% EC 62.5 ml (8 fl oz) & Polyram 80W 90 g (12 oz) (GT-PF)				X		X							
Polyram 80W 180 g (24 oz) (1C-5C)			X										
Rubigan 1EC 23.4 ml (3 fl oz) (GT-2C) ^{*d}				X		X							
Manzate 200 80W 180 g (24 oz) (3C-EOS ^{*c})			X			X							
4. Nustar 20DF 5.6 g (0.75 oz) (GT-2C) ^{*e}			X			X							
5. Rally 60DF 12.5 g (1.67 oz) Neva & Dithane M-45 180 g (24 oz)			X			X							
6. Procure 50W 22.5 g (3 oz) ^{*d}			X			X							
7. RH-0611 62.25W 180 (24 oz)			X			X							
8. C2338 10% L 156.3 ml (20 fl oz)			X			X							
7-10 DAY APPLICATIONS: DELAYED START													
9. Rubigan 1EC 23.4 ml (3 fl oz) (TC- EOS) ^{*d}				X									
10. Rubigan 1EC 23.4 ml (3 fl oz) (PK-2C)						X							
Manzate 200 80W 180 g (24 oz) (3C-EOS) ^{*d}			X			X							
11. Procure 50W 22.5 g (3 oz) (PK to EOS) ^{*d}			X			X							
12-14 DAY APPLICATION SCHEDULE													
12. Folicur 1.2EC 46.9 ml (6 fl oz)			X										
13. Folicur 45W 15 g (2 oz)			X										
14. Nustar 20DF 5.6 g (0.75 oz) (GT-2C) ^{*e}			X			X							
15. Nustar 20DF 7.5 g (1 oz) (GT-2C) ^{*e}			X			X							
VARIABLE SCHEDULE													
16. Nustar 20DF 5.6-7.5 g (0.75-1.0 oz) & Manzate 200 75DF 90 g (12 oz) (GT-2C) Benlate 50DF 15 g (2 oz) & Manzate 200 75DF 90 g (12 oz) (3C-EOS) . X			X			X							

^{*a} X

^{*a} X Polyram applied at the rate of 1.5 lb/ 100 gal. ^{*b} Nustar 20DF 5.6 g (0.75 oz) applied April 10, 23; 7.5 g (1 oz) applied May 7, 18, 28. ^{*c} EOS = end of season. ^{*d} Combined with Manzate 200 80W 90 g (12 oz). ^{*e} Combined with Manzate 200 75DF 90g (12 oz); and followed by DPX-965 50DF 11.2g (1.5 oz) & Manzate 200 80W 78.6g (10.5 oz) 3C-EOS. ^{*f} X Material sprayed on summer program.

1987 CLUSTER LEAF SCAB EVALUATIONS, M.26 ORCHARD, Hudson Valley Lab, Highland, NY

Materials, spray timings, and rate per 100 L (100 gal)	% Mac cluster leaves with active lesions	% cluster leaves infected *f				Grand means: 3 cultivars
		McIntosh 28 May	Golden Del. 29 May	Rome 10 June		
1. Control.....	81.6 c	81.6 f	77.4 i	74.8 d	78.0 f	
<u>7-10 DAY APPLICATION SCHEDULE *a</u>						
2. Funginex 18.2% EC 62.5 ml (8 fl oz) & Polyram 80W 90 g (12 oz) (GT-PF) Polyram 80W 180 g (24 oz) (1C-5C)	1.9 ab	6.0 bcd	20.7 fg	0.2 ab	6.4 d	
3. Rubigan 1EC 23.4 ml (3 fl oz) (GT-2C)*d Manzate 200 80W 180 g (24 oz) (3C-EOS *c)	Tr. a	Tr. a	1.0 abc	0. a	0.1 a	
4. Nustar 20DF 5.6 g (0.75 oz) (GT-2C) *e	0.1 a	3.5 abcd	0.6 abc	0.1	1.0 abc	
5. Rally 60DF 12.5 g (1.67 oz) & Dithane M-45 180 g (24 oz)	0. a	0.3 ab	0.1 ab	0.1 a	0.1 a	
6. Procure 50W 22.5 g (3 oz) *d	0.9 ab	3.9 abcd	4.7 bcde	1.2 ab	3.0 bcd	
7. RH-0611 62.25W 180 (24 oz)	0. a	0.2 ab	0.9 abc	0.1 a	0.3 a	
8. C2338 10% L 156.3 ml (20 fl oz)	0.8 ab	2.1 abc	0. a	2.6 ab	0.6 ab	
<u>7-10 DAY APPLICATIONS: DELAYED START *a</u>						
9. Rubigan 1EC 23.4 ml (3 fl oz) (TC- EOS) *d	0.8 ab	3.4 abcd	0.1 ab	0.1 a	0.7 ab	
10. Rubigan 1EC 23.4 ml (3 fl oz) (PK-2C) Manzate 200 80W 180 g (24 oz) (3C-EOS) *d	1.7 ab	25.8 e	32.5 gh	3.3 b	18.2 e	
11. Procure 50W 22.5 g (3 oz) (PK to EOS) *d	4.9 b	25.3 e	48.4 h	11.9 c	27.3 e	
<u>12-14 DAY APPLICATION SCHEDULE *a</u>						
12. Folicur 1.2EC 46.9 ml (6 fl oz)	2.3 ab	24.7 e	5.2 cde	0.1 a	6.6 d	
13. Folicur 45W 15 g (2 oz)	0.1 a	13.6 de	11.7 def	1.1 ab	7.5 d	
14. Nustar 20DF 5.6 g (0.75 oz) (GT-2C) *e	1.3 ab	13.0 cde	12.1 ef	0.2 ab	6.5 d	
15. Nustar 20DF 7.5 g (1 oz) (GT-2C) *e	1.5 ab	10.7 cde	2.6 abcd	1.6 ab	4.3 cd	
<u>VARIABLE SCHEDULE *b</u>						
16. Nustar 20DF 5.6-7.5 g (0.75-1.0 oz) & Manzate 200 75DF 90 g (12 oz) (GT-2C) Benlate 50DF 15 g (2 oz) & Manzate 200 75DF 90 g (12 oz) (3C-EOS)	14.8 de	0.3 a	2.3 abc	0.6 ab	4.3 cd	

Numbers within columns followed by the same letter do not differ significantly (LSD; P<0.05). Arcsine square root transformations were used for all statistical analyses. *a See M.26 spray schedules on page 3. *b Nustar 20DF 5.6 g (0.75 oz) applied April 10, 23; 7.5 g (1 oz) applied May 7, 18, 28. *c EOS = end of season. *d Combined with Manzate 200 80W 90 g (12 oz). *e Combined with Manzate 200 75DF 90g (12 oz); and followed by DPX-965 50DF 11.2g (1.5 oz) & Manzate 200 80W 78.6g (10.5 oz) 3C-EOS. *f Means are for 20 clusters from each of 3 reps.

1987 TERMINAL LEAF SCAB EVALUATIONS, M.26 ORCHARD, Hudson Valley Lab, Highland, NY

Materials, spray timings, and rate per 100 L (100 gal)	% June term. lvs with scab* ^f		% August term lvs with scab* ^f		% Mac lvs with under- leaf scab Oct. 1	
	McIntosh 11 June	Cortland 19 June	McIntosh 4 Aug	Cortland 8 Aug		Grand means
1. Control	67.4 c	32.5 d	50.0 d	79.8 d	88.0 d	96.1 g
<u>7-10 DAY NORMAL SCHEDULE</u> * ^a						
2. Funginex 18.2% EC 62.5 ml (8 fl oz) & Polyram 80W 90 g (12 oz) (GT-PF) Polyram 80W 180 g (24 oz) (1C-5C)	3.6 b	1.7 c	2.6 c	28.8 c	30.5 c	58.4 f
3. Rubigan 1EC 23.4 ml (3 fl oz) (GT-2C)* ^d Manzate 200 80W 180 g (24 oz) (3C-EOS)* ^c	1.7 ab	0.4 abc	0.6 abc	0.1 ab	0.5 ab	7.2 cde
4. Nustar 20DF 5.6 g (0.75 oz) (GT-2C)* ^e	0.0 a	Tr a	Tr ab	0.0 a	Tr a	3.8 bcd
5. Rally 60DF 12.5 g (1.67 oz) & Dithane M-45 180 g (24 oz)	0.0 a	0.0 a	0.0 a	Tr ab	Tr a	0.4 ab
6. Procure 50W 22.5 g (3 oz)* ^d	0.1 a	0.3 abc	0.2 ab	0.1 ab	0.3 a	8.3 de
7. RH-0611 62.25W 180 (24 oz)	0.0 a	0.5 abc	0.1 ab	0.0 a	Tr a	0.5 ab
8. C2338 10% L 156.3 ml (20 fl oz)	0.0 a	0.0 a	0.0 a	0.1 ab	0.1 a	0.4 a
<u>7-14 DAY SCHEDULE: DELAYED START</u> * ^b						
9. Rubigan 1EC 23.4 ml (3 fl oz) (TC-EOS)* ^d	0.1 a	Tr a	Tr ab	0.2 ab	Tr a	3.0 abcd
10. Rubigan 1EC 23.4 ml (3 fl oz) (PK-2C) Manzate 200 80W 180 g (24 oz) (3C-EOS)* ^d	1.9 ab	0.6 abc	1.1 bc	1.7 b	2.3 b	12.1 e
11. Procure 50W 22.5 g (3 oz) (PK to EOS)* ^d	0.5 ab	0.5 abc	0.5 ab	0.2 ab	0.8 ab	8.4 de
<u>12-14 DAY SCHEDULE</u> * ^a						
12. Folicur 1.2EC 46.9 ml (6 fl oz)	Tr a	0.0 a	0.0 a	Tr a	Tr a	0.6 ab
13. Folicur 45W 15 g (2 oz)	0.1 a	0.3 abc	0.2 ab	0.0 a	0.0 a	0.1 a
14. Nustar 20DF 5.6 g (0.75 oz) (GT-2C)* ^e	0.0 a	0.9 bc	0.2 ab	0.2 ab	0.2 a	1.6 abc
15. Nustar 20DF 7.5 g (1 oz) (GT-2C)* ^e	0.2 a	Tr ab	0.1 ab	0.1 ab	0.2 a	1.6 abc
<u>VARIABLE SCHEDULE</u> * ^b						
16. Nustar 20DF 5.6-7.5 g (0.75-1.0 oz) & Manzate 200 75DF 90 g (12 oz) (GT-2C) Benlate 50DF 15 g (2 oz) & Manzate 200 75DF 90 g (12 oz) (3C-EOS)	0.0 a	0.1 ab	Tr ab	Tr a	0.1 a	0.5 ab

Numbers within columns followed by the same letter do not differ significantly (LSD; P ≤ 0.05). Arcsine square root transformations were used for all statistical analyses. *^a See M.26 spray schedules on page 3. *^b Nustar 20DF 5.6 g (0.75 oz) applied April 10, 23; 7.5 g (1 oz) applied May 7, 18, 28. *^c EOS = end of season. *^d Combined with Manzate 200 80W 90 g (12 oz). *^e Combined with Manzate 200 75DF 90g (12 oz); and followed by DPX-965 50DF 11.2g (1.5 oz) & Manzate 200 80W 78.6g (10.5 oz) 3C-EOS. *^f Means are for 20 (June) or 25 (August) terminals from 3 reps.

1987 TERMINAL MILDEW EVALUATIONS, M.26 ORCHARD, Hudson Valley Lab, Highland, NY

Materials, spray timings, and rate per 100 L (100 gal)	% June terminal lvs with mildew* ^f		% August terminal lvs with mildew* ^f	
	Cortland 11 June	Paulared 19 June	Cortland 23 July	Paulared 23 July
1. Control.....	15.1	53.5	80.8	63.5
7-10 DAY APPLICATION SCHEDULE *^a				
2. Funginex 18.2% EC 62.5 ml (8 fl oz) & Polyram 80W 90 g (12 oz) (GT-PF) Polyram 80W 180 g (24 oz) (1C-5C)	9.4	26.5	26.4	28.3
3. Rubigan 1EC 23.4 ml (3 fl oz) (GT-2C)* ^d Manzate 200 80W 180 g (24 oz) (3C-EOS *c) .	1.3	0.3	3.3	5.0
4. Nustar 20DF 5.6 g (0.75 oz) (GT-2C) * ^e	1.0	2.6	3.3	3.9
5. Rally 60DF 12.5 g (1.67 oz) & Dithane M-45 180 g (24 oz)	0.3	0.3	0.9	0.6
6. Procure 50W 22.5 g (3 oz)	0.1	3.1	2.7	2.0
7. RH-0611 62.25W 180 (24 oz)	0.4	0.2	1.5	0.6
8. C2338 10% L 156.3 ml (20 fl oz)	0.0	2.2	0.8	1.8
7-10 DAY APPLICATIONS: DELAYED START *^a				
9. Rubigan 1EC 23.4 ml (3 fl oz) (TC-EOS) * ^d .	0.4	1.8	1.6	1.7
10. Rubigan 1EC 23.4 ml (3 fl oz) (PK-2C) Manzate 200 80W 180 g (24 oz) (3C-EOS)* ^d ..	1.3	1.6	6.3	8.6
11. Procure 50W 22.5 g (3 oz) (PK to EOS) * ^d	0.7	2.3	2.4	3.2
12-14 DAY APPLICATION SCHEDULE *^a				
12. Folicur 1.2EC 46.9 ml (6 fl oz)	0.6	2.3	0.3	0.2
13. Folicur 45W 15 g (2 oz)	1.2	2.3	1.7	1.2
14. Nustar 20DF 5.6 g (0.75 oz) (GT-2C) * ^e	1.3	2.8	5.7	7.1
15. Nustar 20DF 7.5 g (1 oz) (GT-2C) * ^e	Tr	2.6	6.4	8.3
VARIABLE SCHEDULE *^b				
16. Nustar 20DF 5.6-7.5 g (0.75-1.0 oz) & Manzate 200 75DF 90 g (12 oz) (GT-2C) Benlate 50DF 15 g (2 oz) & Manzate 200 75DF 90 g (12 oz) (3C-EOS) ..	0.5	1.9	4.7	3.4

Numbers within columns followed by the same letter do not differ significantly (LSD; PS 0.05). Arcsine square root transformations were used for all statistical analyses. *^a See M.26 spray schedules on page 3. *^b Nustar 20DF 5.6 g (0.75 oz) applied April 10, 23; 7.5 g (1 oz) (12 oz); and followed by DPX-965 50DF 11.2g (1.5 oz) & Manzate 200 80W 78.6g (10.5 oz) 3C-EOS. *^c Combined with Manzate 200 80W 90 g (12 oz) (June) or 25 (July) terminals from 3 replicates, except that June Cortland ratings are for all terminal leaves on 20 terminals per replicate. *^d Combined with Manzate 200 80W 90 g (12 oz). *^e Combined with Manzate 200 75DF 90g (June) or 25 (July) terminals from 3 replicates, except that June Cortland ratings are for all terminal leaves on 20 terminals per replicate.

1987 CEDAR APPLE RUST EVALUATIONS AND MITE COUNTS, M.26 ORCHARD, Hudson Valley Lab, Highland, NY

Materials, spray timings,
and rate per 100 L (100 gal)

	% leaves with cedar rust* ^f		Average number of mites per leaf 13 July* ^g									
	G.Del (8/7)	Romes (8/7)	ERM	ERM eggs	TSM	ARM						
1. Control.....	6.7	b	6.4	d	0.5	a	5.1	a	0.2	a	84.9	cd
7-10 DAY APPLICATION SCHEDULE *a												
2. Funginex 18.2% EC 62.5 ml (8 fl oz) & Polyram 80W 90 g (12 oz) (GT-PF) Polyram 80W 180 g (24 oz) (1C-5C)	6.1	b	3.0	cd	0.5	a	2.1	a	1.1	a	75.0	bcd
3. Rubigan 1EC 23.4 ml (3 fl oz) (GT-2C)* ^d Manzate 200 80W 180 g (24 oz) (3C-EOS *c) ...	0.	a	0.2	ab	0.6	a	4.5	a	0.2	a	17.5	ab
4. Nustar 20DF 5.6 g (0.75 oz) (GT-2C) * ^e 5. Rally 60DF 12.5 g (1.67 oz) & Dithane M-45 180 g (24 oz)	Tr	a	Tr	a	1.8	a	2.8	a	1.2	a	5.2	a
6. Procure 50W 22.5 g (3 oz) 7. RH-0611 62.25W 180 (24 oz)	0.	a	0.	a	1.0	a	1.5	a	0.6	a	19.2	abc
8. C2338 10% L 156.3 ml (20 fl oz).....	Tr	a	0.7	abc	2.0	a	6.7	a	0.4	a	42.2	abc
7-10 DAY APPLICATIONS: DELAYED START * ^a	0.	a	0.	a	0.2	a	2.8	a	0.4	a	36.0	abc
9. Rubigan 1EC 23.4 ml (3 fl oz) (TC- EOS) * ^d	0.2	a	0.	a	<0.1	a	0.1	a	0.3	a	23.5	abc
10. Rubigan 1EC 23.4 ml (3 fl oz) (PK-2C) Manzate 200 80W 180 g (24 oz) (3C-EOS)* ^d	0.	a	Tr	a	1.6	a	13.9	a	0.8	a	18.5	abc
11. Procure 50W 22.5 g (3 oz) (PK to EOS) * ^d	0.3	a	0.3	ab	0.6	a	0.8	a	0.2	a	4.5	a
12-14 DAY APPLICATION SCHEDULE * ^a	0.1	a	1.4	bc	0.7	a	1.1	a	0.4	a	19.8	abc
12. Folicur 1.2EC 46.9 ml (6 fl oz).....	0.1	a	0.	a	<0.1	a	1.6	a	1.0	a	139.4	de
13. Folicur 45W 15 g (2 oz).....	0.	a	0.	a	2.2	a	11.4	a	0.4	a	190.0	e
14. Nustar 20DF 5.6 g (0.75 oz) (GT-2C) * ^e	0.	a	Tr	a	1.0	a	9.4	a	0.5	a	23.3	abc
15. Nustar 20DF 7.5 g (1 oz) (GT-2C) * ^e	0.	a	0.2	ab	3.3	a	5.8	a	0.4	a	28.6	abc
VARIABLE SCHEDULE *^b												
16. Nustar 20DF 5.6-7.5 g (0.75-1.0 oz) & Manzate 200 75DF 90 g (12 oz) (GT-2C) Benlate 50DF 15 g (2 oz) & Manzate 200 75DF 90 g (12 oz) (3C-EOS).....	0.	a	0.2	ab	1.6	a	6.0	a	1.4	a	8.2	a

Numbers within columns followed by the same letter do not differ significantly (LSD; P< 0.05). Arcsine square root transformations were used for statistical analyses of rust data. *^a See M.26 spray schedules on page 3. *^b Nustar 20DF 5.6 g (0.75 oz) applied April 10, 23; 7.5 g (1 oz) applied May 7, 18, 28. *^c EOS = end of season. *^d Combined with Manzate 200 80W 90 g (12 oz). *^e Combined with Manzate 200 75DF 90g replicates. *^f Counts are means/leaf as determined by counting 25 McIntosh leaves from each of 3 replicates. *^g Means are for 25 terminals from 3 replicates.

1987 APPLE FRUIT EVALUATIONS, M.26 ORCHARD, Hudson Valley Lab, Highland, NY

Materials, spray timings, and rate per 100 L (100 gal)	% fruit with apple scab (Sept.)*f		Fruit finish evaluations *f									
	Mc-Intosh	Cort-land	% rough Golden Delicious	% russet rating ^h								
1. Control.....	(100.)	b	93.8	c	87.4	b	---	24.0	abc	2.3	ab	
7-10 DAY NORMAL SCHEDULE *a												
2. Funginex 18.2% EC 62.5 ml (8 fl oz) & Polyram 80W 90 g (12 oz) (GT-PF) Polyram 80W 180 g (24 oz) (1C-5C)	0.2	a	0.9	ab	0.2	a	73.8	ef	18.9	abc	2.2	ab
3. Rubigan 1EC 23.4 ml (3 fl oz) (GT-2C)*d Manzate 200 80W 180 g (24 oz) (3C-EOS *c)	0.6	a	0.0	a	0.0	a	68.9	def	20.3	abc	2.2	ab
4. Nustar 20DF 5.6 g (0.75 oz) (GT-2C) *e	0.0	a	0.0	a	0.0	a	46.5	abc	14.8	ab	2.1	a
5. Rally 60DF 12.5 g (1.67 oz) & Dithane M-45 180 g (24 oz).....	Tr.	a	0.1	a	0.0	a	80.8	f	15.1	ab	2.2	ab
6. Procure 50W 22.5 g (3 oz).....	0.3	a	0.3	a	0.0	a	49.3	abcd	10.3	a	2.1	a
7. RH-0611 62.25W 180 (24 oz)	0.0	a	1.0	ab	0.0	a	61.4	cdef	13.8	ab	2.2	ab
8. C2338 10% L 156.3 ml (20 fl oz).....	0.2	a	0.7	ab	0.0	a	75.5	ef	19.8	abc	2.2	ab
7-14 DAY SCHEDULE DELAYED START *b												
9. Rubigan 1EC 23.4 ml (3 fl oz) (TC-EOS) *d....	0.4	a	0.1	ab	0.0	a	38.2	a	24.4	abc	2.2	ab
10. Rubigan 1EC 23.4 ml (3 fl oz) (PK-2C) Manzate 200 80W 180 g (24 oz) (3C-EOS) *d... Tr.	a	4.0	b	0.0	a	66.3	cdef	14.3	ab	2.2	ab	
11. Procure 50W 22.5 g (3 oz) (PK to EOS) *d.....	0.6	a	1.7	ab	0.1	a	53.1	abcd	16.0	abc	2.2	ab
12-14 DAY SCHEDULE *a												
12. Folicur 1.2EC 46.9 ml (6 fl oz).....	0.4	a	0.1	a	0.0	a	39.3	ab	53.8	d	2.7	c
13. Folicur 45W 15 g (2 oz).....	0.0	a	0.1	a	0.0	a	46.9	abc.	31.1	c	2.4	b
14. Nustar 20DF 5.6 g (0.75 oz) (GT-2C) *e.....	0.2	a	0.1	a	0.0	a	47.9	abcd	29.0	bc	2.4	b
15. Nustar 20DF 7.5 g (1 oz) (GT-2C) *e.....	0.1	a	0.5	ab	0.0	a	60.6	bcde	21.6	abc	2.2	ab
VARIABLE SCHEDULE *b												
16. Nustar 20DF 5.6-7.5 g (0.75-1.0 oz) & Manzate 200 75DF 90 g (12 oz) (GT-2C) Benlate 50DF 15 g (2 oz) & Manzate 200 75DF 90 g (12 oz) (3C-EOS).....	0.0	a	0.1	a	0.0	a	57.3	abcde	16.6	abc	2.2	ab

Numbers within columns followed by the same letter do not differ significantly (LSD; P ≤ 0.05). Arcsine square root transformations were used for all statistical analyses. *a See M.26 spray schedules on page 3. *b Nustar 20DF 5.6 g (0.75 oz) applied April 10, 23; 7.5 g (1 oz) applied May 7, 18, 28. *c EOS = end of season. *d Combined with Manzate 200 80W 90 g (12 oz). *e Combined with Manzate 200 75DF 90g (12 oz); and foliwee by DPX-965 50DF 11.2g (1.5 oz) & Manzate 200 80W 78.6g (10.5 oz) 3C-EOS. *f Means are for approximately 100 fruit from each of 3 reps. *g Rated for roughening due to raised or cracked lenticels *h Rated on a scale of 1 (no russet) to 5 (severe russet).

1987 POND BLOCK FUNGICIDE TEST
Hudson Valley Lab., Highland, NY

Material and rate per 100 L (100 gal) *b	% McIntosh cluster lvs with scab 4/6 ^a		% Terminal leaves with scab ^a - McIntosh terminals		Golden Del Aug 10		% fruit with scab - Macs		% Golden Del. term. lvs with rust Aug 10 *a	
	June 24	Aug 10	June 24	Aug 10	Aug 31	Sept 24	Aug 31	Sept 24	Aug 10	*a
1. Check.....	46.2 c	77.9 b	46.5 b	58.7 b	94.4 b	59.5 b	94.4 b	59.5 b	6.6	e
2. Dodine 65W 45 g (6 oz).....	1.1 ab	0.8 a	0.2 a	0.3 a	2.1 a	0.1 a	2.1 a	0.1 a	0.8	bc
3. Dodine 4F 62.5 ml (8 fl oz).....	1.0 ab	0.3 a	0.1 a	0.2 a	1.1 a	0.5 a	1.1 a	0.5 a	1.5	cd
4. Dodine 4F 46.9 ml (6 fl oz).....	1.8 b	1.0 a	0.2 a	0.1 a	1.4 a	0.1 a	1.4 a	0.1 a	2.4	d
5. Dodine 4F 46.9 ml (6 fl oz) & Manzate 200 80W 90 g (12 oz).....	0.4 ab	0.4 a	0. a	<0.1 a	0.8 a	1.4 a	0.8 a	1.4 a	0.2	ab
6. Dodine 4F 46.9 ml (6 fl oz) & Rubigan 1EC 15.6 ml (2 fl oz) & Surf AC 820 31.2 ml (4 fl oz).....	0. a	0.3 a	<0.1 a	<0.1 a	0.3 a	0.0 a	0.3 a	0.0 a	0. a	a
7. Rubigan 1EC 23.4 ml (3 fl oz).....	0. a	0.4 a	<0.1 a	0. a	0.1 a	Tr a	0.1 a	Tr a	0. a	a
8. Rubigan 1AS 23.4 ml (3 fl oz).....	0.1 ab	0.4 a	0. a	0. a	0.1 a	0.0 a	0.1 a	0.0 a	0. a	a

Numbers within columns followed by the same letter do not differ significantly (LSD; P ≤ 0.05). Arcsine square root transformations were used for all statistical analyses.
^a Means are for 20 clusters or 25 terminal leaves from each of four replicates.
^b Treatments were replicated 4 times on 2-tree plots. All treatments except #6 were applied on a 7-day early-season schedule: April 10, 16, 23, May 1, 11, 20, 28, June 8, 24, July 10, 30. Trt #6 was applied on a 10-day early season schedule: April 10, 20, May 2, 12, 21, June 5, 24, July 10, 30.

Material and rate per 100 L (100 gal)	% fruit infected with: *a		Bitter rot on Macs		sooty blotch on Macs		flyspeck on Macs		Finish on Golden Delicious % with russett rating *b	
	Macs	Goldens	Macs	Goldens	Macs	Goldens	Macs	Goldens	% with russett	rating *b
1. Check.....	12.5 d	100.0 d	80.1 c	100.0 d	86.3 d	100.0 e	79.0 a	79.0 a	3.5	a
2. Dodine 65W 45 g (6 oz).....	0.1 ab	37.6 b	3.5 a	37.6 b	18.8 b	89.1 c	89.5 a	89.5 a	3.7	a
3. Dodine 4F 62.5 ml (8 fl oz).....	0.4 abc	31.1 b	0.7 a	31.1 b	20.9 b	89.6 cd	88.7 a	88.7 a	3.6	a
4. Dodine 4F 46.9 ml (6 fl oz).....	0.1 ab	29.3 b	3.3 a	29.3 b	21.2 b	87.5 c	84.0 a	84.0 a	3.5	a
5. Dodine 4F 46.9 ml (6 fl oz) & Manzate 200 80W 90 g (12 oz).....	0.0 a	0.1 a	0.7 a	0.1 a	0.3 a	0.9 a	74.1 a	74.1 a	3.1	a
6. Dodine 4F 46.9 ml (6 fl oz) & Rubigan 1EC 15.6 ml (2 fl oz) & Surf AC 820 31.2 ml (4 fl oz).....	1.7 bc	28.9 b	0.9 a	28.9 b	18.9 b	67.6 b	96.0 a	96.0 a	4.0	a
7. Rubigan 1EC 23.4 ml (3 fl oz).....	1.4 abc	90.3 c	38.8 b	90.3 c	54.9 c	98.7 de	87.4 a	87.4 a	3.6	a
8. Rubigan 1AS 23.4 ml (3 fl oz).....	2.1 c	81.3 c	22.5 b	81.3 c	54.5 c	96.2 cde	86.4 a	86.4 a	3.5	a

Numbers within columns followed by the same letter do not differ significantly (LSD; P ≤ 0.05). Arcsine square root transformations were used for statistical analyses of data expressed as percentages.
^a Means are for approximately 100 fruit from each of 4 replicates. Macs were harvested Aug 31 and Golden Delicious were harvested Sept 24.
^b Based of a scale of 1 (no russet or rough lenticels) to 5 (very russetted).

EVALUATION OF OIL/MANCOZEB INTERACTION, VIRUS ORCHARD
Hudson Valley Laboratory, Highland, NY 12518

Growers applying oil miticide sprays between green tip and tight cluster often question the residual effectiveness of contact fungicides applied as a tank mix with the oil. An anonymously-developed rule-of-thumb in the Hudson Valley has been that oil will limit redistribution of the fungicide and reduce the period of the fungicide's effectiveness by about 50%. Thus, a prebloom mancozeb spray which might normally provide 7-9 days protection is generally perceived to provide only 3-5 days protection if it is tank-mixed with oil.

To test this hypothesis, Manzate 200 was applied alone and with 2% oil on April 9 (half-inch green bud stage) to a long double-row of 6-yr old Delicious trees on MM.106 rootstock. Sprays were applied on a calm morning using an airblast sprayer calibrated to deliver 100 gallons per acre. Treatments were replicated 4 times in plots consisting of 6-8 adjacent trees in the double row. All plots including controls were subsequently sprayed April 21 and 27 with Dithane M-45 80W 1.5 lb/100, May 7 with Rubigan 9 fl oz & Dithane M.45 3 lb/A, May 14 with Benlate 50W 12 oz & Zineb 65W 3 lb/A, May 28 with Ribigan 6 fl oz & Captan 80W 1.25 lb/A. Cluster leaves were evaluated for apple scab on May 26 by counting 25 clusters/tree on the two center trees in each plot. Incidence of fruit scab was determined July 29 by observing 100 fruit/plot.

A severe Mill's infection period occurred April 17-18 when trees were at the early tight-cluster stage. The infection period involved 34 hrs wetting with a mean temperature of 51 F, 0.57 inches rain, and 26% of the season's total ascospores as determined using a Burkard spore trap. The opportune timing of this infection period 8 days after treatments were applied provided an ideal test of the redistribution capabilities of mancozeb applied with oil. As shown in the table below, addition of oil did not impair the efficacy of mancozeb and the incidence of both cluster-leaf and fruit scab was significantly greater in control plots than in plots treated with mancozeb. The high incidence of cluster leaf scab in the mancozeb-treated plots resulted from three infection periods March 30-April 7 between green-tip and half-inch green ~~infection~~ and before any fungicides were applied. This test provided no support for the hypothesis that oil limits redistribution of contact fungicides applied in a tank mix with the oil. However, the hypothesis should be tested again before a serious effort is made to change current grower practices.

Test materials applied April 9 and rate per ha (per A)	% cluster leaves with apple scab May 26	% fruit with apple scab July 29
Control: no fungicide or oil.....	69.5 b	7.6 b
Manzate 200 80W 5 kg (4.5 lb).....	21.7 a	1.2 a
Manzate 200 80W 5 kg (4.5 lb) & Spray Oil 6E 56 L (6 gal).....	20.5 a	2.4 a

1987 ANTISPORULANT TRIAL, M.9 ORCHARD, Hudson Valley Lab, Highland, NY

Materials and rate per 100 L(100 gal)*w	Number of spores collected per lesion (x 10 ³)						% terminal lvs with scab lesions 15 July
	First collection: 8 June		Second collection: 16 June				
	Cortland	JerseyMac	Combined*x	Cortland	JerseyMac	Combined*x	
Check.....	27.3 a	37.5 a	32.4 b	75.0 a	134.9 c	110.1 c	22.5 d
Dodine 65W 60 g (8 oz).....	28.0 a	30.8 a	29.4 ab	54.0 a	46.1 a	50.1 ab	7.3 c
Benlate 50W 15 g (2 oz) & Manzate 200 80W 90 g (12 oz).	18.9 a	13.4 a	16.2 a	15.8 a	31.7 a	22.4 a	2.9 abc
Nustar 20DF 7.5 g (1 oz)*y.....	36.7 a	33.1 a	34.1 b	54.0 a	43.3 a	55.3 ab	4.0 abc
Procure 50W 22.5 g (3 oz).....	36.7 a	27.5 a	32.1 b	76.6 a	62.7 ab	69.7 b	1.3 ab
Rally 60DF 12.5 g (1.67 oz).....	45.1 a	31.4 a	38.3 b	78.9 a	40.9 a	59.9 ab	3.7 abc
Follicur 1.2EC 46.9 ml (6 fl oz)...	52.4 a	20.4 a	37.7 b	49.1 a	55.3 ab	52.2 ab	4.8 bc
Rubigan 1EC 11.7 ml (1.5 fl oz)...	42.1 a	28.7 a	35.4 b	65.8 a	52.7 a	59.2 ab	0.7 a
Rubigan 1EC 17.6 ml (2.25 fl oz).	54.6 a	26.7 a	40.4 b	68.0 a	91.7 b	79.9 bc	1.3 ab
							4.8 a

Materials and rate per 100 L(100 gal)*w	% viable spores as determined by germination counts						% reduction in viable spores per lesion.*z
	First collection: 8 June		Second collection: 16 June				
	Cortland	JerseyMac	Combined*x	Cortland	JerseyMac	Combined*x	
Check.....	77.1 c	80.1 d	78.6 c	70.3 d	69.5 d	69.9 e	-
Dodine 65W 60 g (8 oz).....	42.5 b	27.5 a	34.8 b	36.1 a	30.1 a	34.4 a	58.8
Benlate 50W 15 g (2 oz) & Manzate 200 80W 90 g (12 oz).	18.8 a	22.5 a	20.6 a	49.2 b	44.4 b	46.0 b	87.1
Nustar 20DF 7.5 g (1 oz).....	74.3 c	64.3 bc	69.4 c	58.3 bc	53.0 bc	54.7 bc	7.1
Procure 50W 22.5 g (3 oz).....	77.4 c	69.0 bc	73.3 c	68.9 cd	60.9 cd	65.6 de	7.8
Rally 60DF 12.5 g (1.67 oz).....	77.4 c	70.3 c	73.9 c	71.2 d	50.0 bc	64.3 cde	11.0
Follicur 1.2EC 46.9 ml (6 fl oz)...	78.3 c	58.0 b	68.6 c	72.3 d	43.3 b	58.2 cd	0.
Rubigan 1EC 11.7 ml (1.5 fl oz)...	73.4 c	79.3 c	76.4 c	70.1 d	55.1 bc	62.8 cde	0.
Rubigan 1EC 17.6 ml (2.25 fl oz).	78.9 c	66.6 bc	73.0 c	72.5 d	57.9 cd	67.1 de	51.7
							30.4

Numbers within columns followed by the same letter do not differ significantly (LSD, P=0.05). Arcsin squareroot percent transformation was used for analysis spore viability.

*w Mancozeb was applied to all plots on April 9 & 15. Antisporulant treatments were applied to 6 replicates on June 1 & 9. Spore count data were collected from 4 replicates on June 8 and 5 replicates on June 16.

*x Grand means are from analysis of 9 trts x 2 varieties in factorial design. No interactions were present

*y A single high outlier was excluded from the analysis. *z Determined using grand means for each date.

1987 EVALUATION OF FABRAEA LEAFSPOT AND INSECT/MITE INTERACTIONS, Hudson Valley Lab, Highland, NY

Insecticides, rate per 100 L (100 gal) and application dates *a	% leaf area* ^b infected on Bosc 7/9	% leaves infected		% fruit infected	
		Bosc* ^c 7/9	Bartlett* ^c 7/15	Bosc* ^d 8/20	Bartlett* ^d 8/20
1. Danitol 2.4E 41.4 ml (5.3 fl oz) 20 Apr; 8,23 May; 7, 24 Jun.....	1.4 ab	39.8 ab	10.8 a	51.2	25.2
2. Danitol 2.4E 41.4 ml (5.3 fl oz) 20 Apr; 8 May; 7 Jun.....	1.8 ab	48.3 b	25.4 bc	52.8	31.6
3. Danitol 2.4E 78.1 ml (10.0 fl oz) + Spray oil 6E 250 ml (32 fl oz) 8 May; Guthion 50W 60 g (8 oz) 23 May; 7, 24 Jun.....	1.4 ab	37.1 ab	30.8 cd	28.5	18.9
4. Abamectin 0.15E 8.6 ml (1.1 fl oz)* ^f 8 May; 7, 24 Jun.....	4.0 c	76.3 c	40.6 d	65.9	18.6
5. Abamectin 0.15E 16.4 ml (2.1 fl oz)* ^f 8 May; 7, 24 Jun.....	1.9 b	50.5 b	36.5 cd	57.4	25.2
6. Abamectin 0.15E 41.4 ml (5.3 fl oz)* ^f 8 May; 7, 24 Jun.....	1.0 a	32.1 a	18.1 ab	29.2	17.3
7. Asana 1.9E 11.7 ml (1.5 fl oz) 20 Apr; Zolone 3E 125 ml (16 fl oz) + Sevin 50W 120 g (16 oz) 8 May; Zolone 3E 125 ml (16 fl oz) + Mitac 50W 24 g (3.2 oz) 7, 24 Jun.....	2.0 b	45.1 ab	15.7 ab	58.7	8.7
8. Check.....	6.8 d	93.7 d	70.3 e	70.3	55.1

*a Fungicide sprays were applied June 11 and July 1: Rep I (north end) was treated with Manzate 200 80W 1.5 lb/100 gal; Rep II (center) with Captan 50W 2 lb; Rep III (South end) with Benlate 50W plus Manzate 200 80W 1.5 lb.
 *b Evaluated using Barrat-Horsfall rating system
 *c Fungicide treatment had no significant effect on disease incidence.
 *d The Manzate and Benlate/Manzate fungicide treatments were significantly better than the captan treatment: Mean % leaves infected (across both cultivars and all treatments) were Manzate:18.1%; Captan:67.4%; Benlate/Manzate:30.9%.
 *e Differences between treatments were not significant.
 *f Spray oil 6E 125 ml (32 fl oz) added to sprays on 7 and 24 June

EFFECTS OF DELAYING 1987 PRE-BLOOM SCAB SPRAYS IN LOW-INOCULUM
COMMERCIAL ORCHARDS IN THE HUDSON VALLEY

Orchard data	Orchard			
	LC	GC	BC	DR
Cultivar.....	McIntosh	McIntosh	McIntosh	Jonamac
Rootstock.....	Seedling	Seedling	M.7	M.7
Approx. age.....	>15 yrs	> 15 yrs	7 yrs	7 yrs
Number of replicates.....	5	4	4	4
% leaves infected August 1986.....	0.79	0.71	0.38	0.25
Predicted ascospore dose (spores/m ²)	902.	699	381	520
Predicted spray delay (days)	11.8	12.4	13.9	13.1
Days from GT to last unprotected infection period for shortest delay	14.0	14.0	14.0	14.0

1987 APPLE SCAB RATINGS

Materials, rate per 100 L (100 gal) and spray timing	% apple scab infection			
	LC	GC	BC	DR

Cluster leaf scab: June 3-5

Dithane M-45 80W 180 g (24 oz) 2 sprays 15 & 21 Apr.....	1.4 a	0.8 a	0.1 a	7.2 a
Dithane M-45 80W 180 g (24 oz) & Rubigan 1EC 23.4 ml (3 fl oz) 1 spray 21 Apr.....	4.1 a	1.0 a	0.1 a	13.3 b
Dithane M-45 80W 180 g (24 oz) 1 spray 21 Apr.....	25.8 b	1.2 a	2.3 b	59.0 c
Check.....	29.5 b	0.6 a	1.4 b	55.4 c

Terminal leaf scab: August 12-19

Dithane M-45 80W 180 g (24 oz) 2 sprays 15 & 21 Apr.....	1.0 a	2.0 a	1.5 a	1.6 a
Dithane M-45 80W 180 g (24 oz) & Rubigan 1EC 23.4 ml (3 fl oz) 1 spray 21 Apr.....	1.4 a	3.4 a	1.4 a	2.8 b
Dithane M-45 80W 180 g (24 oz) 1 spray 21 Apr.....	2.7 b	4.2 a	1.7 a	7.6 c
Check.....	4.2 c	2.8 a	1.4 a	14.8 d

Fruit scab: August 12-19

Dithane M-45 80W 180 g (24 oz) 2 sprays 15 & 21 Apr.....	0.2 a	0. a	0.1 a	1.9 a
Dithane M-45 80W 180 g (24 oz) & Rubigan 1EC 23.4 ml (3 fl oz) 1 spray 21 Apr.....	1.0 a	1.7 b	0.7 a	2.6 a
Dithane M-45 80W 180 g (24 oz) 1 spray 21 Apr.....	1.5 a	0.4 ab	0.1 a	20.1 b
Check.....	10.4 b	0.3 a	0.5 a	34.3 c

Numbers within columns followed by the same letter do not differ significantly (LSD, P=0.05). The arcsin squareroot percent transformation was used for all statistical analyses.

EFFECTS OF DELAYING 1987 PRE-BLOOM SCAB SPRAYS ON SCAB DEVELOPMENT,
ENTOMOLOGY ORCHARD, HUDSON VALLEY LAB, HIGHLAND, NY

Table 1: Inoculum carry-over and resulting predictions for 1987 derived from Gadoury-MacHardy model for predicting ascospore dose and delay on onset of scab epidemics.

	McIntosh	Jerseymac
Predicted ascospore dose	3711	465
Predicted spray delay (days)	8.2	13.4
Actual spray delay (days)	16.0	16.0

Table 2: Percent cluster leaves infected with apple scab in early June.

Materials, rate per 100 L (100 gal) and spray timing	McIntosh ^{*a}	Jerseymac	Cortland	Empire	Delicious
	June 1	June 1	June 10	June 11	June 11
1. Dithane M-45 80W 180 g (24 oz) Sprayed Apr 14 & 20 ^{*b}	13.1 a	8.1 a	12.4 a	4.8 a	6.9 a
2. Dithane M-45 80W 180 g (24 oz) & Rubigan 1EC 23.4 ml (3 fl oz) Sprayed Apr 20 ^{*b}	32.4 b	9.3 a	13.7 a	7.5 a	8.9 a
3. Dithane M-45 80W 180 g (24 oz) Sprayed Apr 20 ^{*b}	67.3 c	50.2 b	54.4 b	32.6 b	50.2 b
4. Check: 1st spray Apr 27 ^{*b}	62.3 c	34.2 b	60.1 b	44.3 b	53.5 b
5. Rubigan/Dith. M-45 Apr 27, May 7, 14, 23; Capt. 6/4 ^{*c}	50.3 ±8.2				
6. Difolatan schedule ^{*c}	7.3 ±4.1				

^{*a} All means are for 6 replicated plots (trts 1-4) or 6 random trees in large, non-replicated plots (trts 5,6). For replicated plots, numbers within columns followed by the same letter do not differ significantly (LSD; P ≤ 0.05). Arcsine square root transformations were used for all statistical analyses.

^{*b} After April 20, all replicated plots were sprayed April 27 (Dithane M-45 80W 4.5 lb/A), May 7 (Rubigan 9 fl oz & Dithane M-45 3 lb/A), May 14, 23 (Rubigan 6 fl oz & Dithane M-45 3 lb/A), June 4 (Captan 50W 5 lb & Bayleton 50W 3 oz/A), July 1 (Dithane M-45 4 lb/A)

^{*c} Unreplicated plots: means are given with standard deviations for counts from 6 trees.

Table 3: Percent fruit infected with apple scab when rated June 19-23

Materials, rate per 100 L (100 gal) and spray timing	McIntosh	JerseyMac	Delicious	Combined
	1. Dithane M-45 80W 180 g (24 oz) Sprayed Apr 14 & 20	6.9 a	8.2 a	8.4 a
2. Dithane M-45 80W 180 g (24 oz) & Rubigan 1EC 23.4 ml (3 fl oz) Sprayed Apr 20	7.4 a	10.4 a	7.1 a	8.3 a
3. Dithane M-45 80W 180 g (24 oz) Sprayed Apr 20	15.2 b	19.6 b	18.9 a	17.9 b
4. Check: 1st spray Apr 27	21.3 c	23.1 b	18.5 a	20.9 b
6. Rubigan/Dith. M-45 Apr 27, May 7, 14, 23; Capt. 6/4	15.2 ±4.2	17.8 ±4.9	13.8 ±3.7	
7. Difolatan schedule	12.3 ±3.0	16.3 ±5.3	12.4 ±3.9	

EFFECTS OF DELAYING 1987 PRE-BLOOM SCAB SPRAYS ON SCAB DEVELOPMENT,
ENTOMOLOGY ORCHARD, HUDSON VALLEY LAB, HIGHLAND, NY

Table 4: Percent terminal leaves infected with apple scab when rated July 29-Aug 6.

Materials, rate per 100 L (100 gal) and spray timing	McIntosh	Jerseymac	Empire	Delicious
1. Dithane M-45 80W 180 g (24 oz) Sprayed Apr 14 & 20	5.3 a	2.8 a	2.0 a	0.5 a
2. Dithane M-45 80W 180 g (24 oz) & Rubigan 1EC 23.4 ml (3 fl oz) Sprayed Apr 20	6.3 a	6.0 b	2.0 a	0.8 ab
3. Dithane M-45 80W 180 g (24 oz) Sprayed Apr 20	10.8 b	8.2 b	2.4 ab	2.7 b
4. Check: 1st spray Apr 27	8.7 ab	6.2 b	5.2 b	2.2 b
5. Rubigan/Dith. M-45 Apr 27, May 7, 14, 23; Capt. 6/4	8.4 ±6.7	11.3 ±3.8	5.5 ±1.1	5.0 ±1.6
6. Difolatan schedule	25.2 ±7.5	10.2 ±4.7	7.4 ±2.8	4.7 ±1.7

Table 5: Percent fruit infected with apple scab when rated July 28 .

Materials, rate per 100 L (100 gal) and spray timing	McIntosh	Jerseymac	Empire	Delicious
1. Dithane M-45 80W 180 g (24 oz) Sprayed Apr 14 & 20	8.0 a	8.3 a	4.9 a	12.3 a
2. Dithane M-45 80W 180 g (24 oz) & Rubigan 1EC 23.4 ml (3 fl oz) Sprayed Apr 20	7.4 a	12.9 ab	4.7 a	10.4 a
3. Dithane M-45 80W 180 g (24 oz) Sprayed Apr 20	8.1 a	18.3 b	7.4 a	15.0 a
4. Check: 1st spray Apr 27	11.8 a	19.0 b	16.5 b	18.5 a
5. Rubigan/Dith. M-45 Apr 27, May 7, 14, 23; Capt. 6/4	7.2 ±1.8	18.5 ±5.6	10.2 ±4.5	11.7 ±2.9
6. Difolatan schedule	8.0 ±2.8	22.5 ±7.2	8.8 ±3.9	9.2 ±2.7

M.26 ORCHARD MAP - 1987: HUDSON VALLEY LABORATORY

C M G R P 13	C M G R P 3	C M G R P 12	C M G R P 3	C M G R P 14
C M G R P 6	C M G R P 9	C M G R 10	C M G R P 13	C M G R P 1
C M G R P 14	C M G R P 11	C M G R 1	C M G R P 9	C M G R P 4
C M G R P 7	C M G R P 15	C M G R 16	C M G R P 6	C M G R P 2
C M G R P 10	C M G R P 16	C M G R 6	C M G R P 5	C M G R P 15
C M G R P 8	C M G R P 4	C M G R 13	C M G R P 12	C M G R P 7

ROAD

C M G R P 5	C M G R P 7	C M G R P 4	C M G R P 2	C M G R P 8
C M G R P 1	C M G R 11	C M G R P 8	C M G R P 14	C M G R P CR 10
C M G R P 2	C M G R 15	C M G R P 3	C M G R P 12	C M G R P CR 11
P C M G R 12	C M G R 10	C M G R P 5	C M G R P 9	C M G R P CR 16

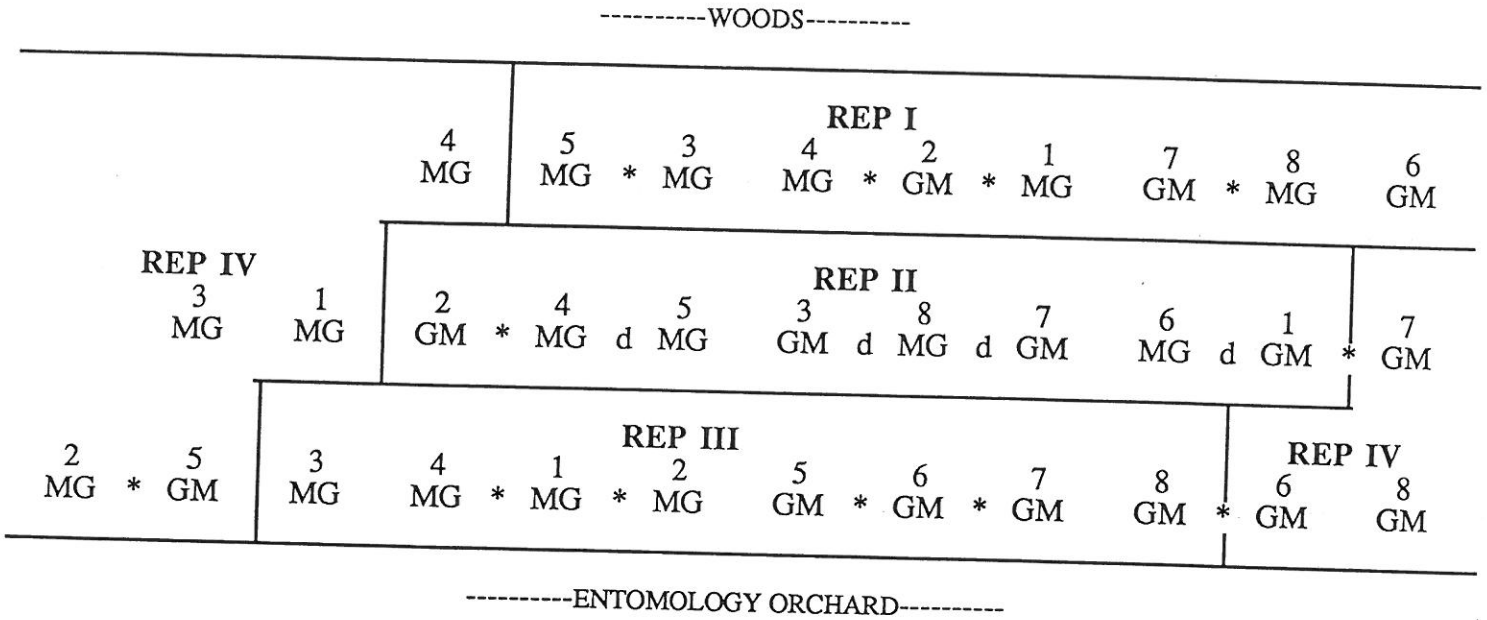
Trt	7-10 DAY NORMAL SCHEDULE	rate per 100 gal.	Trt	7-10 DAY SCHEDULE: DELAY START	rate per 100 gal.	Trt	12-14 DAY SCHEDULE	rate per 100 gal.
1. Check			9. Rubigan 1EC & Manzate 200 80W	12 oz TC - EOS	3 fl oz	12. Folicur 1.2 EC		6 fl oz
2. Funginex 18.2%EC & Polyram 80W	12 oz thru PF	8 fl oz	10. Rubigan 1EC & Manzate 200 80W	12 oz PK - 2C	3 fl oz	13. Folicur 45DF		2 oz
3. Rubigan 1EC & Manzate 200 80W	12 oz thru PF	8 fl oz	11. Procure 50W & Manzate 200 80W	12 oz PK - EOS	3 oz	14. Nustar 20DF & Manzate 200 75DF		0.75 oz
4. Nustar 20DF & Manzate 200 75DF	12 oz thru primary	0.75 oz				DPX-965 50DF & Manzate 200 80W		12 oz thru prim
5. Rally 60DF & Dithane M-45	12 oz thru primary	1.67 oz						1.5 oz
6. Procure 50W & Manzate 200 80W	12 oz thru primary	1.5 oz						10.5 oz to EOS
7. RH-0611 62.25W	12 oz thru primary	10.5 oz to EOS						1.0 oz
8. C2338	12 oz thru primary	20 fl oz						12 oz thru prim

MAP KEY:
 C = Cortland
 M = McIntosh
 G = Golden Delicious
 R = Rome
 P = Paulared
 CR = Criterion
 Underlined trees = replants or smaller trees

VARIABLE SCHEDULE

15. Nustar 20 DF & Manzate 200 75DF	12 oz thru prim	1.0 oz
DPX-965 50DF & Manzate 200 80W	10.5 oz to EOS	
16. Nustar 20DF & Manzate 200 75DF	12 oz spray 1&2	0.75 oz
Nustar 20 DF	1 oz	
Manzate 200 75DF	12 oz thru prim	1.5 oz
Benlate 50DF & Manzate 200 75DF	12 oz to EOS	2 oz

1987 POND-BLOCK MAP



M=McIntosh

G=Golden Delicious

d=Delicious

*=cedar tree

Fungicide Treatments (all on 7-day schedule except #6)
and rate of formulated material per 100 liters (100 gals)

1. Control
2. Dodine 65W (FMC) 45 g (6 oz)
3. Dodine 4F 62.5 ml (8 fl oz)
4. Dodine 4F 46.9 ml (6 fl oz)
5. Dodine 4F 46.9 ml (6 fl oz)
& Manzate 80W 90 g (12 oz)
6. 10-DAY SCHEDULE: Dodine 4F 46.9 ml (6 fl oz)
& Rubigan 1 EC 15.6 ml (2 fl oz)
& Surf Ac 820 31.3 ml (4 fl oz)
7. Rubigan 1EC 23.4 ml (3 fl oz)
8. Rubigan 1AS 23.4 ml (3 fl oz)

1987 ANTISPORULANT FUNGICIDE TEST, M.9 ORCHARD, Hudson Valley Lab. Highland, NY

POLE BARN				OLD PRUNES			
JCS	JCS	JCS	JCS	JCS	JCS	JCS	JCS
4	5	8	3	9	6	4	2
JCS	JCS	JCS	JCS	JCS	JCS	JCS	JCS
REP I				REP IV			
9	3	7	1	1	6	7	2
JCS	JCS	JCS	JCS	JCS	JCS	JCS	JCS
REP II				REP V			
8	4	5	6	1	8	5	3
JCS	JCS	JCS	JCS	JCS	JCS	JCS	JCS
REP III				REP VI			
1	8	4	3	2	3	6	4
JCS	JCS	JCS	JCS	JCS	JCS	JCS	JCS
REP III				REP VII			
9	7	9	5	2	3	6	4
JCS	JCS	JCS	JCS	JCS	JCS	JCS	JCS

Trees were planted in 1986. Underlined trees were replanted 1987.
J = Jerseymacs C = Redcort Cortland S = Smoothee Golden Delicious

Materials and rate per 100 L (100 gal) FLAG COLOR

Check.....	.....	WHITE
Dodine 65W 60 g (8 oz).....	.....	RED
Benlate 50W 15 g (2 oz) &	.....	BLUE
Manzate 200 80W 90 g (12 oz).....	.....	ORANGE
Nustar 20DF 7.5 g (1 oz)*2.....	.....	GREEN
Procure 50W 22.5 g (3 oz).....	.....	BLACK
Rally 60DF 12.5 g (1.67 oz).....	.....	YELLOW
Folicur 1.2EC 46.9 ml (6 fl oz).....	.....	RED STRIPE
Rubigan 1EC 11.7 ml (1.5 fl oz).....	.....	BLUE STRIPE
Rubigan 1EC 17.6 ml (2.25 fl oz).....	.....