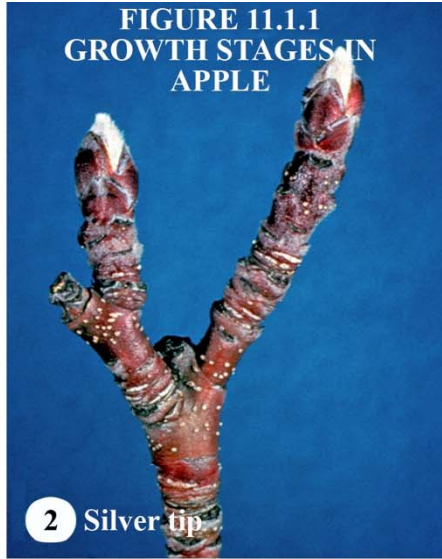


**FIGURE 11.1.1
GROWTH STAGES IN
APPLE**



11 Apples

11.1 Insecticides and Fungicides for Apples

See Sections 11.2, 11.3, 11.4, and 11.5 for comments related to this table.

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Silver Tip							
Crown rot	33	Aliette WDG	2.5-5 lb/A 0.5-1 pt/100 gal	14	12		
	4	Ridomil Gold SL	2 qts/A 0.5 pt/100 gal		48		[7.2]
European fruit lecanium		oil	2-3 gal/100 gal			High	[20.2]
European red mite		oil	2-3 gal/100 gal			High	[20.11]
Green Tip							
Apple scab	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24	High	[2.1,2.2]
	M4	Captan 50WP	8.0 lb/A 1.0-2.0 lb/100 gal	0	24	High	[2.1,2.2]
	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24	High	[2.1,2.2]
	M3	Dithane 75DF or M45 /Manzate ProStik /Penncozeb 75DR	3.0-6.0 lb/A 1.0-2.0 lb/100 gal	BL, 77 (A)	24		[1.3,2.2]
	M3	Dithane F45/ Manzate Max	2.4-4.8 qt/A 0.8-1.6 qt/100 gal	BL, 77 (A)	24	High	[1.3,2.2]
	M3	Polyram 80DF	3.0-4.5 lb/A	BL, 77 (A)	24	High	[1.3,2.2]
	M7	Syllit FL <i>plus</i>	2.0 pts/A	7	48	High	[2.15]
	M4	Captan <i>or</i>	see rates above	0	24		[2.1,2.2]
	M3	Manzate, Penncozeb <i>or</i> Polyram	see rates above	BL, 77 (A)	24		[1.3,2.2]
	9	Scala	7.0-10.0 fl.oz./A	72	12	High	
	9	Vanguard WG	3.0-5.0 oz/A	0	12	High	
European red mite		oil	1-2 gal/100 gal			High	[20.3,20.4]
Fire blight	M1	Bordeaux mixture, 8-10-10 <i>plus</i> oil (may also use with any copper below)	8.0 lb/100 gal 1.0 qt/100 gal				[8.4]
	M1	Champ Formula-2 4.6F	5.33-10.5 pts/A	HIG	24		
	M1	C-O-C-S WDG	8.0-11.7 lb/A	GT	24		
	M1	Cuprofix Ultra Disperss 40DF	5.0-7.5 lb/A	HIG	48		
	M1	Kocide 3000	3.5-7.0 lb/A 1.11-2.3 lb/100 gal	HIG	48		
Rosy apple aphid	1B	Lorsban 4EC	1 pt/100 gal	PB/28 (A)	96	High	[28.2,28.2a]
	1B	Lorsban 75WG	0.3-0.67 lb/100 gal	PB/28 (A)	96	High	[28.2,28.2a]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Green Tip (continued)							
Rosy apple aphid (continued)	1B	Supracide 2EC	3-12 pts/A 1-2 pts/100 gal	PB	72	Moderate	[28.2,28.2a]
	9C	Beleaf 50SG	2.0-2.8 oz/A	21	12	Moderate	[28.2,28.2b]
American plum borer	1B	Lorsban 4EC	1.5 qt/100 gal	PB/28 (A)	96	High	[17.1]
	1B	Lorsban 75WG	2 lb/100 gal	PB/28 (A)	96	High	[17.1]
Half-Inch Green							
Apple scab	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24	High	[2.1,2.2]
	M4	Captan 50WP	8.0 lb/A 1.0-2.0 lb/100 gal	0	24	High	[2.1,2.2]
	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24	High	[2.1,2.2]
	M3	Dithane 75DF or M45 /Manzate ProStik /Penncozeb 75DR	3.0-6.0 lb/A 1.0-2.0 lb/100 gal	BL, 77(A)	24		[1.3,2.2]
	M3	Dithane F45/ Manzate Max	2.4-4.8 qt/A 0.8-1.6 qt/100 gal	BL, 77(A)	24	High	[1.3,2.2]
	M3	Polyram 80DF	3.0-4.5 lb/A	BL, 77(A)	24	High	[1.3,2.2]
	M7	Syllit FL plus	2.0 pts/A	7	48		[2.15]
	M4	Captan or	see rates above	0	24		[2.1,2.2]
	M3	Dithane, Manzate, Penncozeb or Polyram	see rates above	BL, 77(A)	24		[1.3,2.2,2.4]
	9	Scala	7.0-10.0 fl.oz./A	72	12		
	9	Vanguard WG	3.0-5.0 oz/A	0	12		
Dogwood borer	1B	Lorsban 4EC	1.5 qt/100 gal	PB/28 (A)	96	High	[17.1]
	1B	Lorsban 75WG	2 lb/100 gal	PB/28 (A)	96	High	[17.1]
European red mite		oil	1-2 gal/100 gal			High	[20.3,20.4]
Redbanded leafroller	1B	Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	High	[27.1]
Rosy apple aphid	1B	Lorsban 4EC	1 pt/100 gal	PB/28 (A)	96	High	[28.2,28.2a]
	1B	Lorsban 75WG	0.3-0.67 lb/100 gal	PB/28 (A)	96	High	[28.2,28.2a]
	1B	Supracide 2EC	3-12 pts/A 1-2 pts/100 gal	PB	72	Moderate	[28.2,28.2a]
	7C	Esteem 35WP	3-5 oz/A	45	12	High	[28.2,28.2b]
	9C	Beleaf 50SG	2.0-2.8 oz/A	21	12	Moderate	[28.2,28.2b]
San Jose scale		oil	2 gal/100 gal			High	[29.3]
	1B	Lorsban 4EC	1 pt/100 gal	PB/28 (A)	96	High	[29.3]
	1B	Lorsban 75WG	0.3-0.67 lb/100 gal	PB/28 (A)	96	High	[29.3]
	1B	Supracide 2EC	3-12 pts/A 1-2 pts/100 gal	PB	72	High	[29.3]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Half-Inch Green (continued)							
	7C	Esteem 35WP <i>plus</i> oil	4-5 oz/A 2 gal/100 gal	45	12	High	[29.3]
	16	Centaur 0.7WDG	34.5 oz/A	14	12	High	[29.3,29.4]
Tight Cluster							
American plum borer	1B	Lorsban 4EC	1.5 qt/100 gal	PB/28 (A)	96	High	[17.1]
	1B	Lorsban 75WG	2 lb/100 gal	PB/28 (A)	96	High	[17.1]
Apple scab	M3	Dithane 75DF or M45 /Manzate ProStik /Penncozeb 75DR	3.0-6.0 lb/A 1.0-2.0 lb/100 gal	BL, 77 (A)	24		[1.3,2.2]
	M3	Dithane F45/ Manzate Max	2.4-4.8 qt/A 0.8-1.6 qt/100 gal	BL, 77 (A)	24	High	[1.3,2.2]
	M3	Polyram 80DF	3.0-4.5 lb/A	BL, 77 (A)	24	High	[1.3,2.2]
	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24		[2.1,2.2]
	M4	Captan 50WP	8.0 lb/A 1.0-2.0 lb/100 gal	0	24		[2.1,2.2]
	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24		[2.1,2.2]
	M7	Syllit FL <i>plus</i>	2.0 pts/A	7	48		[2.15]
	M4	Captan <i>or</i>	see rates above	0	24		[2.2]
	M3	Dithane, Manzate, Penncozeb or Polyram	see rates above	BL, 77 (A)	24		[2.1,2.2]
	3	Inspire Super	8.5-12.0 fl.oz./A	14	12		[2.13]
	3	Indar 2F	6.0-8.0 fl.oz./A	14	12		[2.13]
	3	Rally 40WSP	5-10 oz/A 2-3 oz/100 gal		14	24	
	3	Vintage SC	6-12 fl.oz/A 3-4 fl.oz/100 gal	30	24		
	3	Topguard	13 fl.oz./A	14	12		
	7	Fontelis 1.67 SC	16-20 fl.oz./A 5.3-6.7 fl oz/100 gal	28	12		
	11	Cabrio EG	5.0-8.0 oz/A 4.0 oz/100 gal	0	12		[2.4,2.14]
	11	Flint	2.0-2.5 oz/A 0.67-0.8 oz/100 gal	14	12		[2.4,2.14]
11	Sovran 50WDG	3.2-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		[2.4,2.14]	
7,11	Luna Tranquility 500SC	11.2-16 fl oz/A 3.7-5.3 fl oz/100 gal	72	12			
7,9	Luna Sensation 500SC	4-5.8 fl oz/A 3.3-1.9 fl oz/100 gal	14	12			
7,11	Merivon 4.17SC	4-5.5 fl oz/A	0	12			
Dogwood borer	1B	Lorsban 4EC	1.5 qt/100 gal	PB/28 (A)	96	High	[17.1]
	1B	Lorsban 75WG	2 lb/100 gal	PB/28 (A)	96	High	[17.1]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Tight Cluster (continued)							
European red mite		oil	1-2 gal/100 gal			High	[20.3,20.4]
	10A	Apollo 4SC	4-8 fl.oz./A	45	12	High	[20.5,20.5a,20.6,20.11,20.11a]
	10A	Onager 1 EC	12-24 fl.oz./A	28	12	High	[20.5,20.5b,20.11,20.11a]
	10A	Savey 50DF	3 oz/A	28	12	High	[20.5,20.5b,20.6,20.11,20.11a]
	10B	Zeal	2-3 oz/A	14	12	High	[20.5,20.5b,20.9,20.11]
Powdery Mildew		JMS Stylet-Oil	1.0-2.0 gal/100 gal	0	4		
		Vintage SC	3.0 fl.oz./100 gal	30	24		
	1	Thiophanate Methyl 85WDG	0.6-0.8 lb/A 0.2-0.3 lb/100 gal	1	48		[2.12,9.4]
	1	Topsin M 70WP	0.75-1.0 lb/A 0.2-0.25 lb/100 gal	1	48		[2.12,9.4]
	1	Topsin M WSB	0.75-1.0 lb/A 0.2-0.25 lb/100 gal	1	48		[2.12,9.4]
	3	Indar 2F	6.0-8.0 fl.oz./A	14	12		
	3	Inspire Super	8.5-12.0 fl.oz./A	14	12		
	3	Procure 480SC	8.0-16.0 fl.oz./A	14	12		
	3	Rally 40WSP	5.0-10.0 oz/A 1.6-3.3 oz/100 gal	14	24		
	11	Flint	2.0-2.5 oz/A 0.67-0.8 oz/100 gal	14	12		
	11	Sovran 50WDG	4.0-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		
	Rosy apple aphid	1B	Lorsban 4EC	1 pt/100 gal	PB/28 (A)	96	High
1B		Lorsban 75WG	0.3-0.67 lb/100 gal	PB/28 (A)	96	High	[28.2,28.2a]
1B		Supracide 2EC	3-12 pts/A 1-2 pts/100 gal	PB	72	Moderate	[28.2,28.2a]
7C		Esteem 35WP	3-5 oz/A	45	12	High	[28.2,28.2b]
9C		Beleaf 50SG	2.0-2.8 oz/A	21	12	Moderate	[28.2,28.2b]
San Jose scale		oil	2 gal/100 gal			High	[29.3]
	1B	Lorsban 4EC	1 pt/100 gal	PB/28 (A)	96	High	[29.3]
	1B	Lorsban 75WG	0.3-0.67 lb/100 gal	PB/28 (A)	96	High	[29.3]
	1B	Supracide 2EC	3-12 pts/A 1-2 pts/100 gal	PB	72	High	[29.3]
	7C	Esteem 35WP plus Oil	4-5 oz/A 2 gal/100 gal	45	12	High	[29.3]
	16	Centaur 0.7WDG	34.5 oz/A	14	12	High	[29.3,29.4]
Tarnished plant bug	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	High	[33.1,33.1a,33.1b]
	3A	Ambush 25WP	6.4-25.6 oz/A	PF	12	High	[33.1,33.1a,33.1b]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[33.1,33.1a,33.1b]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Tight Cluster (continued)							
Tarnished plant bug (continued)	3A	Baythroid XL 1EC	2-2.4 fl.oz./A	7	12	High	[33.1,33.1a,33.1b]
	3A	Danitol 2.4EC	10.67-16 fl.oz./A	14	24	High	[33.1,33.1a,33.1b]
	3A	Pounce 25 WP	6.4-16 oz/A	PF	12	High	[33.1,33.1a,33.1b]
	9C	Beleaf 50SG	2-2.8 oz/A	21	12	High	[33.1,33.1a,33.1d]
	22	Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[33.1,33.1a,33.1c]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	High	[1.0,33.1,33.1a,33.1b]
Pink							
American plum borer	1B	Lorsban 4EC	1.5 qt/100 gal	PB/28 (A)	96	High	[17.1]
	1B	Lorsban 75WG	2 lb/100 gal	PB/28 (A)	96	High	[17.1]
	4A	Assail 30SG	8 oz/A	7	12	Moderate	[17.2]
Apple scab	M3	Dithane 75DF or M45/ Manzate ProStik/ Penncozeb 75DR	3.0-6.0 lb/A 1.0-2.0 lb/100 gal	BL, 77 (A)	24		[1.3,2.2]
	M3	Dithane F45/ Manzate Max	2.4-4.8 qt/A 0.8-1.6 qt/100 gal	BL, 77 (A)	24	High	[1.3,2.2]
	M3	Polyram 80DF	3.0-4.5 lb/A	BL, 77 (A)	24	High	[1.3,2.2]
	M4	Captan 50WP	8.0 lb/A 1.0-2.0 lb/100 gal	0	24		[2.6,2.7]
	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24		[2.6,2.7]
	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24		[2.6,2.7]
	3	Inspire Super	8.5-12.0 fl.oz./A	14	12		[2.13]
	3	Indar 2F	6.0-8.0 fl.oz./A	14	12		[2.13]
	3	Rally 40WSP	5-10 oz/A 2-3 oz/100 gal	14	24		
	3	Vintage SC	6-12 fl.oz/A 3-4 fl.oz/100 gal	30	24		
	3	Topguard	13 fl.oz./A	14	12		
	7	Fontelis	16-20 fl.oz./A	28	12		
	11	Cabrio EG	5.0-8.0 oz/A 4.0 oz/100 gal	0	12		[2.4,2.14]
	11	Flint	2.0-2.5 oz/A 0.67-0.8 oz/100 gal	14	12		[2.4,2.14]
	11	Sovran 50WDG	3.2-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		[2.4,2.14]
7,11	Luna Tranquility 500SC	11.2-16 fl oz/A 3.7-5.3 fl oz/100 gal	72	12			
7,11	Merivon 4.17SC	4-5.5 fl oz/A	0	12			
Black Rot & White Rot	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24		
	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24		
	M4	Captan 50WP	8.0 lb/A 1.2-2.0 lb/100 gal	0	24		
	11	Sovran 50WDG	3.2-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		[2.14]

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Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Pink (continued)							
Blister Spot	33	Aliette WDG	2.5-5.0 lb/A 0.5-1.0 lb/100 gal	14	12		[5.1]
Cedar Apple Rust	M3	Ferbam Granuflo	3.5 lb/A 0.88 lb/100 gal	7	24		
	M3	Manzate ProStik	3.0 lb/A 1.0 lb/100 gal	BL, 77	24	(A)	[1.3,2.2]
	M3	Penncozeb 75DF	3.0 lb/A 1.0 lb/100 gal	BL, 77	24	(A)	[1.3,2.2]
	M3	Polyram 80DF	3.0 lb/A	BL, 77	24	(A)	[2.2]
	3	Inspire Super	8.5-12.0 fl.oz./A	14	12		
	3	Indar 2F	6.0-8.0 fl.oz./A	14	12		
	3	Procure 480SC	8.0-16.0 fl.oz./A	14	12		
	3	Rally 40WSP	5.0-8.0 oz/A 1.6-2.0 oz/100 gal	14	24		
	3	Vintage SC	3.0 fl.oz./100 gal	30	24		
	3	Topguard	12 fl.oz./A	14	12		
	Dogwood borer	1B	Lorsban 4EC	1.5 qt/100 gal	PB/28	96	High
1B		Lorsban 75WG	2 lb/100 gal	PB/28	96	High	(A) [17.1]
4A		Assail 30SG	8 oz/A	7	12	Moderate	[17.2]
European red mite	1A	Vydate 2L	2-4 pts/A 1-2 pts/100 gal	14	48	Moderate	[20.7a]
	10A	Apollo 4SC	4-8 fl.oz./A	45	12	High	[20.5,20.5a,20.6,20.11,20.11a]
	10A	Onager 1 EC	12-24 fl.oz./A	28	12	High	[20.5,20.5b,20.11,20.11a]
	10A	Savey 50DF	3 oz/A	28	12	High	[20.5,20.5b,20.6,20.11,20.11a]
	10B	Zeal	2-3 oz/A	14	12	High	[20.5,20.5b,20.9,20.11]
Mullein plant bug	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	High	[23.3]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[23.3]
	4A	Actara 25WDG	4.5 oz/A	14/35	12	High	(A) [23.3,23.3a]
	4A	Assail 30SG	4-8 oz/A	7	12	High	[23.3,23.3c]
	4A	Calypso 4F	2-4 fl.oz./A 0.5-1 fl.oz./100 gal	30	12	High	[23.3,23.3b]
Obliquebanded leafroller	11A	Agree 3.8WS	1-2 lb/A	0	4	Moderate	[24.1,24.2,24.3,24.3a]
Oriental fruit moth		Checkmate CM-OFM Duel	150-200 dispensers/ acre		0	High	[14.2]
		Checkmate OFM-F 24.6S	1.32-2.93 fl.oz./A		0	Moderate	[14.2]
		Isomate-CM/OFM TT	200 ties/A		0	High	[14.2]
		Isomate OFM TT	100 ties/A		0	High	[14.2]

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Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)	
Pink (continued)								
Powdery Mildew		JMS Stylet-Oil	1.0-2.0 gal/100 gal	0	4		[9.3,9.4]	
	1	Thiophanate Methyl 85WDG	0.6-0.8 lb/A 0.2-0.3 lb/100 gal	1	48		[2.12,9.4]	
	1	Topsin M 70WP	0.75-1.0 lb/A 0.2-0.25 lb/100 gal	1	48		[2.12,9.4]	
	1	Topsin M WSB	0.75-1.0 lb/A 0.2-0.25 lb/100 gal	1	48		[2.12,9.4]	
	3	Inspire Super	8.5-12.0 fl.oz./A	14	12			
	3	Indar 2F	6.0-8.0 fl.oz./A	14	12			
	3	Procure 480SC	8.0-16.0 fl.oz./A	14	12			
	3	Rally 40WSP	5.0-10.0 oz/A 1.6-3.3 oz/100 gal	14	24			
	3	Vintage SC	3.0 fl.oz./100 gal	30	24			
	11	Flint	2.0-2.5 oz/A 0.67-0.8 oz/100 gal	14	12			
	11	Sovran 50WDG	4.0-6.4 oz/A 1.0-1.6 oz/100 gal	30	12			
	Rosy apple aphid	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[12.1d,28.2]
		1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	High	[12.1d,28.2]
		1A	Vydate 2L	2-8 pts/A 1-2 pts/100 gal	14	48	Moderate	[28.2,28.3a]
1B		Lorsban 4EC	1 pt/100 gal	PB/28 (A)	96	High	[28.2,28.2a]	
1B		Lorsban 75WG	0.3-0.67 lb/100 gal	PB/28 (A)	96	High	[28.2,28.2a]	
2A		Thionex 3EC	2.6 qt/A 0.5 qt/100 gal	21	7 days	Moderate	[28.2,35.1b]	
2A		Thionex 50WP	4 lb/A 0.75 lb/100 gal	21	20 days	Moderate	[28.2,35.1b]	
4A		Actara 25WDG	4.5 oz/A	14/35 (A)	12	High	[15.4,28.2,28.3b]	
4A		Assail 30SG	2.5-4 oz/A	7	12	High	[28.2,28.3c]	
4A		Calypso 4F	2-4 fl.oz./A 0.5-1 fl.oz./100 gal	30	12	High	[28.2,28.4a]	
7C		Esteem 35WP	3-5 oz/A	45	12	High	[28.2,28.2b]	
9C		Beleaf 50SG	2.0-2.8 oz/A	21	12	Moderate	[28.2,28.2b]	
Spotted tentiform leafminer, Apple blotch leafminer		1A	Vydate 2L	2-4 pts/A 1 pt/100 gal	14	48	High	[30.1,30.2, 30.2a,30.3,30.3a]
	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	High	[30.1,30.1a,30.2, 30.3]	
	3A	Ambush 25WP	6.4-25.6 oz/A	PF	12	High	[30.1,30.1a,30.2]	
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[30.1,30.1a,30.1b, 30.2,30.3]	
	3A	Baythroid XL 1EC	2-2.4 fl.oz./A	7	12	High	[30.1,30.1a,30.2, 30.3]	

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Pink (continued)							
Spotted tentiform leafminer, Apple blotch leafminer (continued)	3A	Danitol 2.4EC	10.67-16 fl.oz./A	14	24	High	[30.1,30.1a,30.1b, 30.2,30.2a,30.2b, 30.3]
	3A	Pyrenone 6L	12 fl.oz./A		12	Moderate	[30.1]
	4A	Actara 25WDG	4.5 oz/A	14/35 (A)	12	High	[15.4,30.1, 30.1d,30.2,30.2a, 30.2c,30.3]
	4A	Assail 30SG	2.5 oz/A	7	12	High	[30.1,30.2,30.2a, 30.3]
	4A	Calypso 4F	2-4 fl.oz./A 0.5-1 fl.oz./100 gal	30	12	High	[30.1,30.2, 30.2a,30.2c,30.3]
	5	Delegate 25WG	4.5-7 oz/A	7	4	High	[30.1,30.1e,30.2, 30.2a,30.3]
	6	Proclaim 5SG	3.2-4.8 oz/A 0.8-1.2 oz/100 gal	14	12	High	[30.1,30.2,30.3]
	22	Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[30.1,30.1d,30.2, 30.2a,30.2c,30.3]
	28	Altacor 35WDG	2.5-4 oz/A	5	4	High	[30.1,30.2, 30.2d,30.3]
	28	Belt 4SC	3-5 fl.oz./A	14	12	High	[30.1,30.2,30.2d, 30.3]
	UN	Aza-Direct 1.2L	11.5-42 fl.oz./A	0	4	High	[30.1,30.2,30.3]
	UN	Azatin XL 0.27EC	10-16 fl.oz./A	0	4	High	[30.1,30.2,30.3]
	3A/6	*Gladiator EC	19 fl.oz./A 4.75 fl.oz./100 gal	28	12	High	[1.0,30.1,30.1a, 30.2,30.3]
Tarnished plant bug	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	High	[33.1,33.1a,33.1b]
	3A	Ambush 25WP	6.4-25.6 oz/A	PF	12	High	[33.1,33.1a,33.1b]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[33.1,33.1a,33.1b]
	3A	Baythroid XL 1EC	2-2.4 fl.oz./A	7	12	High	[33.1,33.1a,33.1b]
	3A	Danitol 2.4EC	10.67-16 fl.oz./A	14	24	High	[33.1,33.1a,33.1b]
	3A	Pounce 25 WP	6.4-16 oz/A	PF	12	High	[33.1,33.1a,33.1b]
	9C	Beleaf 50SG	2-2.8 oz/A	21	12	High	[33.1,33.1a,33.1d]
	22	Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[33.1,33.1a,33.1c]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	High	[1.0,33.1,33.1a, 33.1b]
Bloom							
Apple scab	M3	Dithane 75DF or M45 /Manzate ProStik /Penncozeb 75DR	3.0-6.0 lb/A 1.0-2.0 lb/100 gal	BL, 77 (A)	24		[1.3,2.2]
	M3	Dithane F45/ Manzate Max	2.4-4.8 qt/A 0.8-1.6 qt/100 gal	BL, 77 (A)	24	High	[1.3,2.2]
	M3	Polyram 80DF	3.0-4.5 lb/A	BL, 77 (A)	24	High	[1.3,2.2]
	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24		[2.6,2.7]
	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24		[2.6,2.7]
	M4	Captan 50WP	8.0 lb/A 1.0-2.0 lb/100 gal	0	24		[2.6,2.7]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Bloom (continued)							
Apple scab (continued)	3	Inspire Super	8.5-12.0 fl.oz./A	14	12		[2.13]
	3	Indar 2F	6.0-8.0 fl.oz./A	14	12		[2.13]
	3	Rally 40WSP	5-10 oz/A 2-3 oz/100 gal	14	24		
	3	Topguard	13 fl.oz./A	14	12		
	7	Fontelis	16-20 fl.oz./A	28	12		
	11	Cabrio EG	5.0-8.0 oz/A 4.0 oz/100 gal	0	12		[2.4,2.14]
	11	Flint	2.0-2.5 oz/A 0.67-0.8 oz/100 gal	14	12		[2.4,2.14]
	11	Sovran 50WDG	3.2-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		[2.4,2.14]
	7,11	Luna Tranquility 500SC	11.2-16 fl oz/A 3.7-5.3 fl oz/100 gal	72	12		
	7,11	Merivon 4.17SC	4-5.5 fl oz/A	0	12		
Black Rot & White Rot	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24		
	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24		
	M4	Captan 50WP	8.0 lb/A 1.2-2.0 lb/100 gal	0	24		
	1	Topsin M 70WP	0.75-1.0 lb/A 0.2-0.25 lb/100 gal	1	48		[10.3,10.4]
	11	Sovran 50WDG	3.2-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		[2.14]
	7,11	Merivon 4.17SC	4-5.5 fl oz/A	0	12		
Blister Spot	33	Aliette WDG	2.5-5.0 lb/A 0.5-1.0 lb/100 gal	14	12		[5.1]
Blossom End Rot	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24		[6.2]
	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24		[6.2]
	M4	Captan 50WP	8.0 lb/A 1.0-2.0 lb/100 gal	0	24		[6.2]
	1	Thiophanate Methyl 85WDG	0.6-0.8 lb/A 0.2-0.3 lb/100 gal	1	48		[6.2]
	Cedar Apple Rust	M3	Ferbam Granuflo	3.5 lb/A 0.88 lb/100 gal	7	24	
M3		Manzate ProStik	3.0 lb/A 1.0 lb/100 gal	BL, 77(A)	24		[1.3,2.2]
M3		Penncozeb 75DF	3.0 lb/A 1.0 lb/100 gal	BL, 77(A)	24		[1.3,2.2]
M3		Polyram 80DF	3.0 lb/A	BL, 77(A)	24		[2.2]
3		Inspire Super	8.5-12.0 fl.oz./A	14	12		
3		Indar 2F	6.0-8.0 fl.oz./A	14	12		
3		Procuze 480SC	8.0-16.0 fl.oz./A	14	12		
3		Rally 40WSP	5.0-8.0 oz/A 1.6-2.0 oz/100 gal	14	24		
3		Topguard	12 fl.oz./A	14	12		
3		Vintage SC	3.0 fl.oz./100 gal	30	24		

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Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Bloom (continued)							
Codling moth		Checkmate CM-F 14.3S	2.4-4.8 fl.oz./A		4	Moderate	[14.2]
		Checkmate CM-OFM Duel	150-200 dispensers/ acre		0	High	[14.2]
		Isomate-CM/OFM TT	200 ties/ acre		0	High	[14.2]
Fire blight		Agri-mycin	24.0 oz/A 8.0 oz/100 gal	50	12		[8.3,8.10]
		Apogee 27.5%	4.5-9.0 oz/100 gal	45	12		[8.6]
		Bloomtime Biological FD	0.33 lb/A	PF	4		[8.8]
		Fireline	12.0 oz/100 gal		12		
		Firewall	24.0 oz/A 8.0 oz/100 gal	50	12		[8.3,8.10]
		Mycoshield 17WP	1.0 lb/100 gal	60	12		[8.9]
		Serenade ASO	2.0-6.0 qt/A	0	4		[8.7]
		Streptrol 17WP	24.0 oz/A 8.0 oz/100 gal	50	4		[8.3,8.10]
Lesser appleworm		Checkmate CM-OFM Duel	150-200 dispensers/ acre		0	High	[14.2]
		Isomate-CM/OFM TT	200 ties/ acre		0	High	[14.2]
Mullein plant bug	4A	Assail 30SG	4-8 oz/A	7	12	High	[23.3,23.3c]
Obliquebanded leafroller	11A	Agree 3.8WS	1-2 lb/A	0	4	Moderate	[24.1,24.2,24.3, 24.3a]
	11A	Dipel 10.3DF	0.5-2 lb/A	0	4	High	[24.1,24.2,24.3, 24.3a]
	11A	Javelin 7.5WDG	0.5-4 lb/A 0.13-1 lb/100 gal	0	4	Moderate	[24.1,24.2,24.3, 24.3a]
	18	Intrepid 2F	8-16 oz/A	14	4	High	[24.2,24.3, 24.3b]
Oriental fruit moth		Checkmate CM-OFM Duel	150-200 dispensers/ acre		0	High	[14.2]
		Checkmate OFM-F 24.6S	1.32-2.93 fl.oz./A		0	Moderate	[14.2]
		Isomate-CM/OFM TT	200 ties/ acre		0	High	[14.2]
		Isomate OFM TT	100 ties/A		0	High	[14.2]
Powdery Mildew		JMS Stylet-Oil	1.0-2.0 gal/100 gal	0	4		[9.3,9.4]
	1	Thiophanate Methyl 85WDG	0.6-0.8 lb/A 0.2-0.3 lb/100 gal	1	48		[2.12,9.4]
	1	Topsin M 70WP	0.75-1.0 lb/A 0.2-0.25 lb/100 gal	1	48		[2.12,9.4]
	1	Topsin M WSB	0.75-1.0 lb/A 0.2-0.25 lb/100 gal	1	48		[2.12,9.4]
	3	Inspire Super	8.5-12.0 fl.oz./A	14	12		
	3	Indar 2F	6.0-8.0 fl.oz./A	14	12		
	3	Procure 480SC	8.0-16.0 fl.oz./A	14	12		
	3	Rally 40WSP	5.0-10.0 oz/A 1.6-3.3 oz/100 gal	14	24		
	3	Vintage SC	3.0 fl.oz./100 gal	30	24		

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Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Bloom (continued)							
Powdery Mildew (continued)	11	Flint	2.0-2.5 oz/A 0.67-0.8 oz/100 gal	14	12		
	11	Sovran 50WDG	4.0-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		
Petal Fall							
American plum borer	1B	Lorsban 4EC	1.5 qt/100 gal	PB/28 (A)	96	High	[17.1]
	1B	Lorsban 75WG	2 lb/100 gal	PB/28 (A)	96	High	[17.1]
	4A	Assail 30SG	8 oz/A	7	12	Moderate	[17.2]
Apple rust mite	21A	Nexter 75WS	5.2-10.7 oz/A	25	12	Moderate	[13.2]
	21A	Portal 0.4EC	2 pts/A	14	12	High	[13.2]
Apple scab	M3	Manzate ProStik	3.0-6.0 lb/A 1.0-2.0 lb/100 gal	BL, 77 (A)	24		[2.7]
	M3	Penncozeb 75DF	3.0-6.0 lb/A 1.0-2.0 lb/100 gal	BL, 77 (A)	24		[2.7]
	M3	Polyram 80DF	3.0 lb/A 1.0 lb/100 gal	BL, 77 (A)	24		
	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24		[2.7,2.6]
	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24		[2.7,2.6]
	M4	Captan 50WP	8.0 lb/A 1.0-2.0 lb/100 gal	0	24		[2.7,2.6]
	3	Inspire Super	8.5-12.0 fl.oz./A	14	12		[2.13]
	3	Indar 2F	6.0-8.0 fl.oz./A	14	12		[2.13]
	3	Rally 40WSP	5-10 oz/A 2-3 oz/100 gal	14	24		
	3	Topguard	13 fl.oz./A	14	12		
	7	Fontelis	16-20 fl.oz./A	28	12		
	11	Cabrio EG	5.0-8.0 oz/A 4.0 oz/100 gal	0	12		[2.14,2.4]
	11	Flint	2.0-2.5 oz/A 0.67-0.8 oz/100 gal	14	12		[2.14,2.4]
11	Sovran 50WDG	3.2-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		[2.14,2.4]	
7,11	Luna Tranquility 500SC	11.2-16 fl oz/A 3.7-5.3 fl oz/100 gal	72	12			
7,11	Merivon 4.17SC	4-5.5 fl oz/A	0	12			
Black Rot & White Rot	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24		
	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24		
	M4	Captan 50WP	8.0 lb/A 1.2-2.0 lb/100 gal	0	24		
	1	Topsin M 70WP	0.75-1.0 lb/A 0.2-0.25 lb/100 gal	1	48		[10.3,10.4]
	11	Sovran 50WDG	3.2-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		[2.14]
	7,11	Merivon 4.17SC	4-5.5 fl oz/A	0	12		

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Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Petal Fall (continued)							
Blossom End Rot	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24		[6.2]
	M4	Captan 50WP	8.0 lb/A 1.0-2.0 lb/100 gal	0	24		
	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24		[6.2]
	1	Thiophanate Methyl 85WDG	0.6-0.8 lb/A 0.2-0.3 lb/100 gal	1	48		[6.2]
Cedar Apple Rust	M3	Ferbam Granuflo	3.5 lb/A 0.88 lb/100 gal	7	24		
	M3	Manzate ProStik	3.0 lb/A 1.0 lb/100 gal	BL, 77 (A)	24		[1.3,2.2]
	M3	Penncozeb 75DF	3.0 lb/A 1.0 lb/100 gal	BL, 77 (A)	24		[1.3,2.2]
	M3	Polyram 80DF	3.0 lb/A	BL, 77 (A)	24		[2.2]
	3	Indar 2F	6.0-8.0 fl.oz./A	14	12		
	3	Inspire Super	8.5-12.0 fl.oz./A	14	12		
	3	Procure 480SC	8.0-16.0 fl.oz./A	14	12		
	3	Rally 40WSP	5.0-8.0 oz/A 1.6-2.0 oz/100 gal	14	24		
	3	Topguard	12 fl.oz./A	14	12		
	3	Vintage SC	3.0 fl.oz./100 gal	30	24		
	Codling moth		Cyd-X 0.06SC	1-6 fl.oz./A	0	4	Moderate
		Carpovirusine 0.99SC	0.25-0.4 qt/A 0.5-1 pt/100 gal	0	4	Moderate	[14.1,14.3,14.3f]
		Checkmate CM-F 14.3S	2.4-4.8 fl.oz./A		4	Moderate	[14.2]
		Checkmate CM-OFM Duel	150-200 dispensers/ acre		0	High	[14.2]
		Checkmate Puffer CM-OFM	1-2 units/ acre		0	Moderate	[14.2]
		Isomate-CM/OFM TT	200 ties/ acre		0	High	[14.2]
1A		Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[14.1,14.3,14.3g]
1A		Lannate LV 2.4L	1.5-3 pts/A 1.5 pts/100 gal	14	72	High	[14.1,14.3,14.3g]
1A		Sevin 80 Solupak	1.25-3.75 lb/A	3	12	Moderate	[14.1,14.3,14.3j]
1A		Sevin XLR Plus 4EC	1-3 qt/A	3	12	Moderate	[14.1,14.3,14.3j]
1B		Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	High	[14.1,14.3,14.3e]
3A		Baythroid XL 1EC	2-2.4 fl.oz./A	7	12	Moderate	[14.1,14.3]
4A		Assail 30SG	4-8 oz/A	7	12	High	[14.1,14.3,14.3a, 14.3c]
4A		Calypso 4F	4-8 fl.oz./A 1-2 fl.oz./100 gal	30	12	High	[14.1,14.3,14.3e]
5		Delegate 25WG	4.5-7 oz/A	7	4	High	[14.1,14.3]
5	Entrust 2SC	6-10 fl.oz./A	7	4	Moderate	[14.1,14.3]	
5	Entrust 80WP	2-3 oz/A 0.67-1 oz/100 gal	7	4	Moderate	[14.1,14.3]	

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Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Petal Fall (continued)							
Codling moth <i>(continued)</i>	6	Proclaim 5SG	4.8 oz/A 1.2 oz/100 gal	14	12	Moderate	[14.1,14.3,14.3h]
	11A	Deliver 18WG	0.5-2 lb/A	0	4	Moderate	[14.1,14.3]
	11A	Dipel 10.3DF	0.5-2 lb/A	0	4	Moderate	[14.1,14.3,14.3e]
	15	Rimon 0.83EC	20-40 fl.oz./A	14	12	High	[14.1,14.3,14.3i]
	18	Intrepid 2F	12-16 fl.oz./A	14	4	Moderate	[14.1,14.3,14.3b]
	22	Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[14.1,14.3,14.3a]
	28	Altacor 35WDG	2.5-4.5 oz/A	5	4	High	[14.1,14.3,14.3a, 14.3b]
	28	Belt 4SC	3-5 fl.oz./A	14	12	High	[14.1,14.3]
	UN	Neemix	7-16 fl.oz./A	0	12	Moderate	[14.1,14.3]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	Moderate	[1.0]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	Moderate	[1.0,14.1,14.3, 14.3k]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,14.1,14.3]
	4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0,14.1,14.3, 14.3k]
Comstock mealybug	4A	Assail 30SG	4-8 oz/A	7	12	High	[15.2a,15.3a,15.3b]
	16	Centaur 0.7WDG	34.5 oz/A	14	12	High	[15.2a,15.3a,15.3b]
	21A	Portal 0.4EC	2 pts/A	14	12	High	[15.2a,15.3a,15.3b]
	23	Movento 240SC	6-9 fl.oz./A	7	24	High	[15.2a,15.3a,15.2b, 15.3b]
	4A/28	Voliam Flexi WDG	6-7 oz/A	35	12	High	[1.0,15.2a,15.3b, 15.4]
	6/4A	*Agri-Flex SC plus oil	5.5-8.5 fl.oz./A or 1.5-2 fl.oz./100 gal 1 gal/A or 1 qt/100 gal		12	High	[1.0,15.2a,15.3a, 15.3b,15.4]
Dogwood borer	1B	Lorsban 4EC	1.5 qt/100 gal	PB/28 (A)	96	High	[17.1]
	1B	Lorsban 75WG	2 lb/100 gal	PB/28 (A)	96	High	[17.1]
	4A	Assail 30SG	8 oz/A	7	12	Moderate	[17.2]
European apple sawfly	1A	Lannate LV 2.4L	1.5-3 pts/A 1.5 pts/100 gal	14	72	Low	[18.1,18.1a]
	1B	Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	High	[18.1]
	3A	Baythroid XL 1EC	2.4-2.8 fl.oz./A	7	12	Moderate	[18.1]
	4A	Actara 25WDG	4.5-5.5 oz/A	14/35 (A)	12	High	[15.4,18.1,18.2a]
	4A	Assail 30SG	5-8 oz/A	7	12	Moderate	[18.1]
	4A	Calypso 4F	4-8 fl.oz./A 1-2 fl.oz./100 gal	30	12	High	[18.1,18.2a]
	22	Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[18.1,18.2a]
	28	Altacor 35WDG	2.5-4.5 oz/A	5	4	High	[18.1,18.2a]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	Moderate	[1.0,18.1]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Petal Fall (continued)							
European apple sawfly (continued)	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	Moderate	[1.0,15.4,18.1]
	4A/28	Voliam Flexi WDG	6-7 oz/A	35	12	High	[1.0,15.4,18.1]
	6/4A	*Agri-Flex SC plus oil	5.5-8.5 fl.oz./A or 1.5-2 fl.oz./100 gal 1 gal/A or 1 qt/100 gal	35	12	High	[1.0,15.4,18.1]
European red mite	6	*Agri-Mek 8SC	2.25-4.25 fl.oz./A 0.5-1 fl.oz./100 gal	28	12	High	[20.8,20.9]
	10A	Apollo 4SC	4-8 fl.oz./A	45	12	High	[20.5,20.5a,20.6,20.11,20.11a]
	10A	Onager 1 EC	12-24 fl.oz./A	28	12	High	[20.5,20.5b,20.11,20.11a]
	10A	Savey 50DF	3 oz/A	28	12	High	[20.5,20.5b,20.6,20.11,20.11a]
	10B	Zeal	2-3 oz/A	14	12	High	[20.5,20.5b,20.9,20.11]
	12B	Vendex 50WP	1-2 lb/A 4-8 oz/100 gal	14	48	Low	[20.11,20.11c]
	20B	Kanemite 15SC	31 fl.oz./A	14	12	High	[20.9,20.9b,20.11,20.11c]
	21A	Nexter 75WS	4.4-5.2 oz/A	25	12	High	[20.9,20.9a,20.11]
	21A	Portal 0.4EC	2 pt/A	14	12	High	[20.9,20.9a,20.11]
	UN	Acramite 50WS	0.75-1 lb/A	7	12	High	[20.9,20.9a,20.11]
	3A/6	*Gladiator EC	19 fl.oz./A 4.75 fl.oz./100 gal	28	12	High	[1.0,20.8,20.9]
	6/4A	*Agri-Flex SC plus oil	5.5-8.5 fl.oz./A or 1.5-2 fl.oz./100 gal 1 gal/A or 1 qt/100 gal	35	12	High	[1.0,20.8,20.9]
	Fire blight		Agri-mycin	24.0 oz/A 8.0 oz/100 gal	50	12	
		Apogee 27.5%	4.5-9.0 oz/100 gal	45	12		[8.6]
		Firewall	24.0 oz/A 8.0 oz/100 gal	50	12		[8.3,8.10]
		Streptrol 17WP	24.0 oz/A 8.0 oz/100 gal	50	4		[8.3,8.10]
Green fruitworms	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[21.1,21.1a]
	1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	High	[21.1,21.1a]
	2A	Thionex 3EC	2.6 qt/A 0.5 qt/100 gal	21	7 days	High	[21.1,35.1b]
	2A	Thionex 50WP	4 lb/A 0.75 lb/100 gal	21	20 days	High	[21.1,35.1b]
	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	High	[21.1,21.1b]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[21.1,21.1b]
	3A	Baythroid XL 1EC	1.4-2 fl.oz./A	7	12	High	[21.1,21.1b]
	3A	Danitol 2.4EC	16 fl.oz./A	14	24	High	[21.1,21.1b]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Petal Fall (continued)							
Green fruitworms (continued)	3A	Pounce 25 WP	6.4-16 oz/A	PF	12	High	[21.1,21.1b]
	6	Proclaim 5SG	3.2-4.8 oz/A 0.8-1.2 oz/100 gal	14	12	High	[21.1]
	28	Altacor 35WDG	2.5-4 oz/A	5	4	High	[21.1]
	28	Belt 4SC	3-5 fl.oz./A	14	12	High	[21.1]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	High	[1.0,21.1]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	High	[1.0,21.1,21.1d]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0]
	4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0,21.1,21.1d]
Lesser appleworm		Checkmate CM-OFM Duel	150-200 dispensers/ acre		0	High	[14.2]
		Isomate-CM/OFM TT	200 ties/ acre		0	High	[14.2]
	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[14.1a]
	1A	Lannate LV 2.4L	1.5-3 pts/A 1.5 pts/100 gal	14	72	High	[14.1a]
	1A	Sevin 80 Solupak	1.25-3.75 lb/A	3	12	Moderate	[14.1a,14.3j]
	1A	Sevin XLR Plus 4EC	1-3 qt/A	3	12	Moderate	[14.1a,14.3j]
	3A	Baythroid XL 1EC	2-2.4 fl.oz./A	7	12	Moderate	[14.1a]
	4A	Assail 30SG	4-8 oz/A	7	12	High	[14.1a,14.3a,14.3c]
	5	Delegate 25WG	4.5-7 oz/A	7	4	High	[14.1a]
	6	Proclaim 5SG	4.8 oz/A 1.2 oz/100 gal	14	12	Moderate	[14.1a]
	11A	Deliver 18WG	0.5-2 lb/A	0	4	Moderate	[14.1a]
	15	Rimon 0.83EC	20-40 fl.oz./A	14	12	High	[14.1a,14.3i]
	18	Intrepid 2F	12-16 fl.oz./A	14	4	Moderate	[14.1a,14.3b]
	22	Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[14.1a,14.3a]
	28	Altacor 35WDG	2.5-4.5 oz/A	5	4	High	[14.1a,14.3a,14.3b]
	28	Belt 4SC	3-5 fl.oz./A	14	12	High	[14.1a]
	UN	Neemix	7-16 fl.oz./A	0	12	Moderate	[14.1a]
	4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0, 14.1a,14.3k]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	Moderate	[1.0,14.1a,14.3k]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,14.1a]
Mullein plant bug	4A	Assail 30SG	4-8 oz/A	7	12	High	[23.3,23.3c]
	4A	Calypso 4F	2-4 fl.oz./A 0.5-1 fl.oz./100 gal	30	12	High	[23.3,23.3b]
	4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0,23.3]
Obliquebanded leafroller	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	Moderate	[24.2,24.2a,24.2c]
	1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	Moderate	[24.2,24.2a,24.2c]
	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	Moderate	[24.2,24.3,24.3b, 24.3c]
	3A	Ambush 25WP	6.4-25.6 oz/A	PF	12	Moderate	[24.2]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	Moderate	[24.2,24.3,24.3b, 24.3c,24.3d]
	3A	Baythroid XL 1EC	2.4-2.8 fl.oz./A	7	12	Moderate	[24.2,24.3,24.3c]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Petal Fall (continued)							
Obliquebanded leafroller (continued)	3A	Danitol 2.4EC	16 fl.oz./A	14	24	Moderate	[24.2,24.2d,24.3, 24.3b,24.3c]
	3A	Pounce 25 WP	6.4-16 oz/A	PF	12	Moderate	[24.2]
	5	Delegate 25WG	4.5-7 oz/A	7	4	High	[24.2,24.3,24.3b]
	5	Entrust 2SC	6-10 fl.oz./A	7	4	High	[24.2,24.3,24.3b]
	5	Entrust 80WP	2-3 oz/A 0.67-1 oz/100 gal	7	4	High	[24.2,24.3,24.3b]
	6	Proclaim 5SG	3.2-4.8 oz/A 0.8-1.2 oz/100 gal	14	12	High	[24.2,24.2e,24.3, 24.3b]
	11A	Agree 3.8WS	1-2 lb/A	0	4	Moderate	[24.1,24.2,24.3, 24.3a]
	11A	Deliver 18WG	0.5-2 lb/A	0	4	Moderate	[24.1,24.2,24.3, 24.3a]
	11A	Dipel 10.3DF	0.5-2 lb/A	0	4	High	[24.1,24.2,24.3, 24.3a]
	11A	Javelin 7.5WDG	0.5-4 lb/A 0.13-1 lb/100 gal	0	4	Moderate	[24.1,24.2,24.3, 24.3a]
	15	Rimon 0.83EC	20-40 fl.oz./A	14	12	High	[14.3i,24.2,24.3]
	18	Intrepid 2F	8-16 oz/A	14	4	High	[24.2,24.3, 24.3b]
	28	Altacor 35WDG	2.5-4.5 oz/A	5	4	High	[24.2,24.3, 24.3b]
	28	Belt 4SC	3-5 fl.oz./A	14	12	High	[24.2,24.3,24.3b]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	Moderate	[1.0,24.2,24.3, 24.3b,24.3c]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	Moderate	[1.0,24.2,24.3, 24.3b,24.3c,24.4]
	4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0,24.2,24.3, 24.3b,24.4]
Oriental fruit moth		Checkmate CM-OFM Duel	150-200 dispensers/ acre		0	High	[14.2]
		Checkmate OFM-F 24.6S	1.32-2.93 fl.oz./A		0	Moderate	[14.2]
		Checkmate Puffer CM- OFM	1-2 units/ acre		0	Moderate	[14.2]
		Isomate-CM/OFM TT	200 ties/ acre		0	High	[14.2]
		Isomate OFM TT	100 ties/A		0	High	[14.2]
	1B	Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	High	[14.1a]
	3A	Baythroid XL 1EC	2-2.4 fl.oz./A	7	12	Moderate	[14.1a]
	4A	Assail 30SG	4-8 oz/A	7	12	High	[14.1a,14.3,14.3a, 14.3c]
	4A	Calypso 4F	4-8 fl.oz./A 1-2 fl.oz./100 gal	30	12	High	[14.1a]
	5	Delegate 25WG	4.5-7 oz/A	7	4	High	[14.1a]
	5	Entrust 2SC	6-10 fl.oz./A	7	4	Moderate	[14.1a]
	5	Entrust 80WP	2-3 oz/A 0.67-1 oz/100 gal	7	4	Moderate	[14.1a]

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Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Petal Fall (continued)							
Oriental fruit moth (continued)	6	Proclaim 5SG	4.8 oz/A 1.2 oz/100 gal	14	12	Moderate	[14.1a]
	11A	Deliver 18WG	0.5-2 lb/A	0	4	Moderate	[14.1a]
	11A	Dipel 10.3DF	0.5-2 lb/A	0	4	Moderate	[14.1a]
	15	Rimon 0.83EC	20-40 fl.oz./A	14	12	High	[14.3i]
	18	Intrepid 2F	12-16 fl.oz./A	14	4	Moderate	[14.1a, 14.3b]
	22	Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[14.1a, 14.3a,]
	28	Altacor 35WDG	2.5-4.5 oz/A	5	4	High	[14.1, 14.3, 14.3a, 14.3b]
	28	Belt 4SC	3-5 fl.oz./A	14	12	High	[14.1a]
	UN	Neemix	7-16 fl.oz./A	0	12	Moderate	[14.1a]
	4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0, 14.1a, 14.3k]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	Moderate	[1.0, 14.1a, 14.3k]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0, 14.1a]
	Oystershell scale	1A	Sevin 4F	1.5-3 qt/A	3	12	High
1A		Sevin 80 Solupak	1.88-3.75 lb/A	3	12	High	[25.1]
1A		Sevin XLR Plus 4EC	1.5-3 qt/A	3	12	High	[25.1]
16		Centaur 0.7WDG	34.5 oz/A	14	12	High	
Plum curculio		Surround 95WP	25-50 lb/A	0	4	Moderate	[12.2, 26.2]
	1A	Sevin 4F	1.5-3 qt/A	3	12	Moderate	[26.2, 26.4c]
	1A	Sevin 80 Solupak	1.88-3.75 lb/A	3	12	Moderate	[26.2, 26.4c]
	1A	Sevin XLR Plus 4EC	1.5-3 qt/A	3	12	Moderate	[26.2, 26.4c]
	1B	Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	High	[26.2, 26.4a]
	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	Moderate	[26.2]
	3A	Baythroid XL 1EC	2.4-2.8 fl.oz./A	7	12	Moderate	[26.2]
	3A	Danitol 2.4EC	16 fl.oz./A	14	24	Moderate	[26.2]
	4A	Actara 25WDG	4.5-5.5 oz/A	14/35 (A)	12	High	[26.2, 26.4a, 26.4b]
	4A	Calypso 4F	4-8 fl.oz./A 1-2 fl.oz./100 gal	30	12	High	[26.2, 26.4a]
	22	Avaunt 30WDG	5-6 oz/A	14	12	High	[26.2, 26.4a]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	Moderate	[1.0, 26.2]
	4A/28	Voliam Flexi WDG	6-7 oz/A	35	12	High	[1.0, 26.2, 26.4b]
	6/4A	*Agri-Flex SC plus oil	5.5-8.5 fl.oz./A or 1.5-2 fl.oz./100 gal 1 gal/A or 1 qt/100 gal		12	High	[1.0, 26.2, 26.4b]
	Powdery Mildew		JMS Stylet-Oil	1.0-2.0 gal/100 gal	0	4	
1		Thiophanate Methyl 85WDG	0.6-0.8 lb/A 0.2-0.3 lb/100 gal	1	48		[2.12, 9.4]
1		Topsin M 70WP	0.75-1.0 lb/A 0.2-0.25 lb/100 gal	1	48		[2.12, 9.4]
1		Topsin M WSB	0.75-1.0 lb/A 0.2-0.25 lb/100 gal	1	48		[2.12, 9.4]
3		Inspire Super	8.5-12.0 fl.oz./A	14	12		
3		Indar 2F	6.0-8.0 fl.oz./A	14	12		
3		Procure 480SC	8.0-16.0 fl.oz./A	14	12		

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Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Petal Fall (continued)							
Powdery Mildew (continued)	3	Rally 40WSP	5.0-10.0 oz/A 1.6-3.3 oz/100 gal	14	24		
	3	Vintage SC	3.0 fl.oz./100 gal	30	24		
	11	Flint	2.0-2.5 oz/A 0.67-0.8 oz/100 gal	14	12		
	11	Sovran 50WDG	4.0-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		
Redbanded leafroller	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[12.1d,27.2]
	1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	High	[12.1d,27.2]
	1B	Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	High	[27.1]
	3A	Baythroid XL 1EC	2.4-2.8 fl.oz./A	7	12	High	[27.2]
	5	Delegate 25WG	4.5-7 oz/A	7	4	High	[27.2]
	6	Proclaim 5SG	3.2-4.8 oz/A 0.8-1.2 oz/100 gal	14	12	High	[27.2]
	11A	Agree 3.8WS	1-2 lb/A	0	4	High	[24.1,27.2]
	11A	Deliver 18WG	0.5-2 lb/A	0	4	High	[24.1,27.2]
	11A	Dipel 10.3DF	0.5-2 lb/A	0	4	High	[24.1,27.2]
	11A	Javelin 7.5WDG	0.5-4 lb/A 0.13-1 lb/100 gal	0	4	High	[24.1,27.2]
	15	Rimon 0.83EC	20-40 fl.oz./A	14	12	High	[14.3i]
	28	Altacor 35WDG	2.5-4.5 oz/A	5	4	High	[27.2]
	28	Belt 4SC	3-5 fl.oz./A	14	12	High	[27.2]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	High	[1.0,27.2]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	High	[1.0,27.2]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,27.2]
Rosy apple aphid	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[12.1d,28.2]
	1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	High	[12.1d,28.2]
	2A	Thionex 3EC	2.6 qt/A 0.5 qt/100 gal	21	7 days	Moderate	[28.2,35.1b]
	2A	Thionex 50WP	4 lb/A 0.75 lb/100 gal	21	20 days	Moderate	[28.2,35.1b]
	4A	Admire Pro 4.6SC	2.8 fl.oz./A	7	12	High	[28.2]
	4A	Assail 30SG	2.5-4 oz/A	7	12	High	[28.2,28.3c]
	4A	Calypso 4F	2-4 fl.oz./A 0.5-1 fl.oz./100 gal	30	12	High	[28.2,28.4a]
	9C	Beleaf 50SG	2.0-2.8 oz/A	21	12	Moderate	[28.2,28.2b]
	23	Movento 240SC	6-9 fl.oz./A	7	24	Moderate	[28.4b]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	Moderate	[1.0]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,28.2]
	4A/28	Voliam Flexi WDG	6-7 oz/A	35	12	High	[1.0,15.4]

Table 11.5.1 Pesticide Spray Table – Apples.

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Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Petal Fall (continued)							
San Jose scale	23	Movento 240SC	6-9 fl.oz./A	7	24	High	[29.4,29.4b]
Spotted tentiform leafminer, Apple blotch leafminer	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[12.1d,30.2,30.2a,30.2b,30.3]
	1A	Lannate LV 2.4L	1.5-3 pts/A 0.75 pt/100 gal	14	72	High	[12.1d,30.2,30.2a,30.3]
	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	High	[30.1,30.1a,30.2,30.3]
	3A	Ambush 25WP	6.4-25.6 oz/A	PF	12	High	[30.1,30.1a,30.2]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[30.1,30.1a,30.1b,30.2,30.3]
	3A	Baythroid XL 1EC	2-2.4 fl.oz./A	7	12	High	[30.1,30.1a,30.2,30.3]
	3A	Danitol 2.4EC	10.67-16 fl.oz./A	14	24	High	[30.1,30.1a,30.1b,30.2,30.2a,30.2b,30.3]
	4A	Actara 25WDG	4.5 oz/A	14/35(A)	12	High	[15.4,30.1,30.1d,30.2,30.2a,30.2c,30.3]
	4A	Admire Pro 4.6SC	2.8 fl.oz./A	7	12	High	[30.2,30.2a,30.3]
	4A	Assail 30SG	2.5 oz/A	7	12	High	[30.1,30.2,30.2a,30.3]
	4A	Calypso 4F	2-4 fl.oz./A 0.5-1 fl.oz./100 gal	30	12	High	[30.1,30.2,30.2a,30.2c,30.3]
	5	Delegate 25WG	4.5-7 oz/A	7	4	High	[30.1,30.1e,30.2,30.2a,30.3]
	5	Entrust 2SC	6-10 fl.oz./A		4	High	[30.2,30.3]
	5	Entrust 80WP	2-3 oz/A 0.67-1 oz/100 gal	7	4	High	[30.2,30.3]
	6	Proclaim 5SG	3.2-4.8 oz/A 0.8-1.2 oz/100 gal	14	12	High	[30.1,30.2,30.3]
	15	Rimon 0.83EC	20-40 fl.oz./A	14	12	High	[14.3i,30.2]
	22	Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[30.1,30.1d,30.2,30.2a,30.2c,30.3]
	28	Altacor 35WDG	2.5-4 oz/A	5	4	High	[30.1,30.2,30.2d,30.3]
	28	Belt 4SC	3-5 fl.oz./A	14	12	High	[30.1,30.2,30.2d,30.3]
	UN	Aza-Direct 1.2L	11.5-42 fl.oz./A	0	4	High	[30.1,30.2,30.3]
	UN	Azatin XL 0.27EC	10-16 fl.oz./A	0	4	High	[30.1,30.2,30.3]
	3A/6	*Gladiator EC	19 fl.oz./A 4.75 fl.oz./100 gal	28	12	High	[1.0,30.1,30.1a,30.2,30.3]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	High	
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,15.4,30.2,30.3]
	4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0,15.4,30.2,30.3]
	6/4A	*Agri-Flex SC plus oil	5.5-8.5 fl.oz./A or 1.5-2 fl.oz./100 gal 1 gal/A or 1 qt/100 gal	35	12	High	[1.0,15.4,30.2]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC &		Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
	FRAC	Product					
Petal Fall (continued)							
Tarnished plant bug	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	High	[33.1,33.1a,33.1b]
	3A	Ambush 25WP	6.4-25.6 oz/A	PF	12	High	[33.1,33.1a,33.1b]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[33.1,33.1a,33.1b]
	3A	Baythroid XL 1EC	2-2.4 fl.oz./A	7	12	High	[33.1,33.1a,33.1b]
	3A	Danitol 2.4EC	10.67-16 fl.oz./A	14	24	High	[33.1,33.1a,33.1b]
	3A	Pounce 25 WP	6.4-16 oz/A	PF	12	High	[33.1,33.1a,33.1b]
	9C	Beleaf 50SG	2-2.8 oz/A	21	12	High	[33.1,33.1a,33.1d]
	22	Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[33.1,33.1a,33.1c]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	High	[1.0,33.1,33.1a, 33.1b]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	High	[1.0,15.4,33.1]
4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,33.1]	
White apple leafhopper, Potato leafhopper	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[12.1d,35.1]
	1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	High	[12.1d,35.1]
	1A	Sevin 4F	0.5-1.5 qt/A	3	12	High	[35.1,35.1a]
	1A	Sevin 80 Solupak	0.63-1.88 lb/A	3	12	High	[35.1,35.1a]
	1A	Sevin XLR Plus 4EC	0.5-1.5 qt/A	3	12	High	[35.1,35.1a]
	1A	Vydate 2L	2-4 pt/A 1-2 pt/100 gal	14	48	High	[35.1,35.1a]
	2A	Thionex 3EC	2.6 qt/A 0.5 qt/100 gal	21	7 days	High	[35.1,35.1b]
	2A	Thionex 50WP	4 lb/A 0.75 lb/100 gal	21	20 days	High	[35.1,35.1b]
	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	High	[35.1]
	3A	Ambush 25WP	6.4-25.6 oz/A	PF	12	High	[35.1]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[35.1]
	3A	Baythroid XL 1EC	1.4-2 fl.oz./A	7	12	High	[35.1]
	3A	Danitol 2.4EC	10.67-16 fl.oz./A	14	24	High	[35.1]
	4A	Actara 25WDG	2-2.75 oz/A	14/35(A)	12	High	[15.4,35.1,35.1c]
	4A	Admire Pro 4.6SC	2.8 fl.oz./A	7	12	High	[35.1]
	4A	Assail 30SG	2.5-4 oz/A	7	12	High	[35.1]
	4A	Calypso 4F	2-4 fl.oz./A 0.5-1 fl.oz./100 gal	30	12	High	[35.1,35.1c]
	6	*Agri-Mek 8SC	2.25-4.25 fl.oz./A 0.5-1 fl.oz./100 gal	28	12	High	[35.1]
	16	Centaur 0.7WDG	9-12 oz/A	14	12	Moderate	[35.1]
	21A	Portal 0.4EC	2 pt/A	14	12	High	[35.1]
	22	Avaunt 30WDG	5-6 oz/A	14	12	High	[35.1,35.1c]
	UN	Aza-Direct 1.2L	12.5-42 fl.oz./A	0	4	Moderate	[35.1]
	UN	Neemix	7-16 fl.oz./A	0	4	Moderate	[35.1]
	3A/6	*Gladiator EC	19 fl.oz./A 4.75 fl.oz./100 gal	28	12	High	[1.0,35.1]
	4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0,15.4,35.1]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Petal Fall (continued)							
White apple leafhopper,	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	High	[1.0,15.4,35.1]
Potato leafhopper (continued)	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,35.1]
	6/4A	*Agri-Flex SC plus oil	5.5-8.5 fl.oz./A or 1.5-2 fl.oz./100 gal 1 gal/A or 1 qt/100 gal	35	12	High	[1.0,15.4,35.1]
Additional Summer Sprays							
American plum borer	1B	Lorsban 4EC	1.5 qt/100 gal	PB/28 (A)	96	High	[17.1]
	1B	Lorsban 75WG	2 lb/100 gal	PB/28 (A)	96	High	[17.1]
	4A	Assail 30SG	8 oz/A	7	12	Moderate	[17.2]
Apple aphid, Spirea aphid		M-Pede 49L	2 gal/100 gal		12	Moderate	[11.1]
	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[11.1]
	1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	High	[11.1]
	1A	Vydate 2L	2-8 pt/A 1-2 pt/100 gal	14	48	High	[11.1,11.1e]
	2A	Thionex 3EC	2.6 qt/A 0.5 qt/100 gal	21	7 days	High	[11.1,35.1b]
	2A	Thionex 50WP	4 lb/A 0.75 lb/100 gal	21	20 days	High	[11.1,35.1b]
	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	High	[11.1]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[11.1]
	3A	Danitol 2.4EC	16 fl.oz./A	14	24	High	[11.1,11.1c]
	3A	Pyrenone 6L	12 fl.oz./A		12	Moderate	[11.1]
	4A	Admire Pro 4.6SC	2.8 fl.oz./A see label	7	12	High	[11.1]
	4A	Assail 30SG	2.5-4 oz/A	7	12	High	[11.1]
	4A	Calypto 4F	2-4 fl.oz./A 0.5-1 fl.oz./100 gal	30	12	High	[11.1]
	9C	Beleaf 50SG	2-2.8 oz/A	21	12	High	[11.1]
	23	Movento 240SC	6-9 fl.oz./A	7	24	High	[11.1,11.1d]
	UN	Aza-Direct 1.2L	12.5-42 fl.oz./A	0	4	Moderate	[11.1]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	High	[1.0]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,11.1]
	4A/28	Voliam Flexi WDG	6-7 oz/A	35	12	High	[1.0,11.1]
	6/4A	*Agri-Flex SC plus oil	5.5-8.5 fl.oz./A or 1.5-2 fl.oz./100 gal 1 gal/A or 1 qt/100 gal	35	12	High	[1.0,11.1,11.1a]
Apple maggot		Surround 95WP	25-50 lb/A	0	4	Moderate	[12.2,12.1]
	1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	Moderate	[12.1,12.1c,12.1d]
	1B	Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	High	[12.1,12.1a]
	3A	Baythroid XL 1EC	2.4-2.8 fl.oz./A	7	12	High	[12.1,12.1a]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Additional Summer Sprays (continued)							
Apple maggot (continued)	3A	Danitol 2.4EC	16 fl.oz./A	14	24	High	[12.1,12.1a,12.1b]
	4A	Assail 30SG	8 oz/A	7	12	High	[12.1,12.1a]
	4A	Calypso 4F	4-8 fl.oz./A 1-2 fl.oz./100 gal	30	12	High	[12.1,12.1a]
	22	Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[12.1,12.1a]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	Moderate	[1.0]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	High	[1.0,12.1,12.1a, 15.4]
Apple rust mite	21A	Nexter 75WS	5.2-10.7 oz/A	25	12	Moderate	[13.2]
	21A	Portal 0.4EC	2 pts/A	14	12	High	[13.2]
Apple scab	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24		[2.6,2.7]
	M4	Captan 50WP	8.0 lb/A 1.0-2.0 lb/100 gal	0	24		[2.6,2.7]
	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24		[2.6,2.7]
	3	Inspire Super	8.5-12.0 fl.oz./A	14	12		[2.13]
	3	Indar 2F	6.0-8.0 fl.oz./A	14	12		[2.13]
	3	Rally 40WSP	5-10 oz/A 2-3 oz/100 gal	14	24		
	3	Topguard	13 fl.oz./A	14	12		
	11	Cabrio EG	5.0-8.0 oz/A 4.0 oz/100 gal	0	12		[2.4,2.14]
	11	Flint	2.0-2.5 oz/A 0.67-0.8 oz/100 gal	14	12		[2.4,2.14]
	11	Sovran 50WDG	3.2-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		[2.4,2.14]
	7	Fontelis	16-20 fl.oz./A	28	12		
	7,11	Luna Tranquility 500SC	11.2-16 fl oz/A 3.7-5.3 fl oz/100 gal	72	12		
	7,11	Merivon 4.17SC	4-5.5 fl oz/A	0	12		
Bitter Rot	M4	Captan 80WDG	2.5-5.0 lb/A 0.625 lb/100 gal	0	24		
	M4	Captec 4L	1.0 pt/100 gal	0	24		
	M4	Captan 50WP	4.0 lb/A 1.0 lb/100 gal	0	24		
Black Rot & White Rot	M4	Captec 4L	0.5-1.0 qt/100 gal	0	24		
	M4	Captan 50WP	8.0 lb/A 1.2-2.0 lb/100 gal	0	24		
	M4	Captan 80WDG	5.0 lb/A 0.65-1.25 lb/100 gal	0	24		
	11	Flint	1.5 oz/A 0.5 oz/100 gal	14	12		[2.14]
	11	Sovran 50WDG	3.2-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		[2.14]
	7,11	Pristine 38WDG	14.5-18.5 fl.oz./A	0	12		
Blister Spot	33	Aliette WDG	2.5-5.0 lb/A 0.5-1.0 lb/100 gal	14	12		[5.1]

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Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Additional Summer Sprays (continued)							
Cedar Apple Rust	3	Topguard	12 fl.oz./A	14	12		
Climbing cutworms: Darksided, Dingy, Mottled, Spotted, Variegated	1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	High	[16.2,16.2a]
	11A	Dipel 10.3DF	0.5-2 lb/A	0	4	Moderate	[16.2]
Codling moth		Carpovirusine 0.99SC	0.25-0.4 qt/A 0.5-1 pt/100 gal	0	4	Moderate	[14.1,14.3,14.3f]
		Checkmate CM-F 14.3S	2.4-4.8 fl.oz./A		4	Moderate	[14.2]
		Checkmate CM-OFM Duel	150-200 dispensers/ acre		0	High	[14.2]
		Checkmate Puffer CM- OFM	1-2 units/ acre		0	Moderate	[14.2]
		Cyd-X 0.06SC	1-6 fl.oz./A	0	4	Moderate	[14.1,14.3,14.3f]
		Isomate-CM/OFM TT	200 ties/ acre		0	High	[14.2]
		Surround 95WP	25-50 lb/A	0	4	Moderate	[14.1,14.3,12.2]
	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[14.1,14.3,14.3g]
	1A	Lannate LV 2.4L	1.5-3 pts/A 1.5 pts/100 gal	14	72	High	[14.1,14.3,14.3g]
	1A	Sevin 80 Solupak	1.25-3.75 lb/A	3	12	Moderate	[14.1,14.3,14.3j]
	1A	Sevin XLR Plus 4EC	1-3 qt/A	3	12	Moderate	[14.1,14.3,14.3j]
	1B	Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	High	[14.1,14.3,14.3e]
	3A	Baythroid XL 1EC	2-2.4 fl.oz./A	7	12	Moderate	[14.1,14.3]
	4A	Assail 30SG	4-8 oz/A	7	12	High	[14.1,14.3,14.3a, 14.3c]
	4A	Calypso 4F	4-8 fl.oz./A 1-2 fl.oz./100 gal	30	12	High	[14.1,14.3,14.3e]
	5	Delegate 25WG	4.5-7 oz/A	7	4	High	[14.1,14.3]
	5	Entrust 2SC	6-10 fl.oz./A	7	4	Moderate	[14.1,14.3]
	5	Entrust 80WP	2-3 oz/A 0.67-1 oz/100 gal	7	4	Moderate	[14.1,14.3]
	11A	Deliver 18WG	0.5-2 lb/A	0	4	Moderate	[14.1,14.3]
	11A	Dipel 10.3DF	0.5-2 lb/A	0	4	Moderate	[14.1,14.3,14.3e]
15	Rimon 0.83EC	20-40 fl.oz./A	14	12	High	[14.1,14.3,14.3i]	
18	Intrepid 2F	12-16 fl.oz./A	14	4	Moderate	[14.1,14.3,14.3b]	
22	Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[14.1,14.3,14.3a]	
28	Altacor 35WDG	2.5-4.5 oz/A	5	4	High	[14.1,14.3,14.3a, 14.3b]	
28	Belt 4SC	3-5 fl.oz./A	14	12	High	[14.1,14.3]	
UN	Neemix	7-16 fl.oz./A	0	4	Moderate	[14.1,14.3]	
3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	Moderate	[1.0]	

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Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Additional Summer Sprays (continued)							
Codling moth (continued)	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	Moderate	[1.0,14.1,14.3,14.3k]
	4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0,14.1,14.3,14.3k]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,14.1,14.3]
Comstock mealybug	4A	Assail 30SG	4-8 oz/A	7	12	High	[15.2a,15.3a,15.3b]
	16	Centaur 0.7WDG	34.5 oz/A	14	12	High	[15.2a,15.3a,15.3b]
	21A	Portal 0.4EC	2 pts/A	14	12	High	[15.2a,15.3a,15.3b]
	23	Movento 240SC	6-9 fl.oz./A	7	24	High	[15.2a,15.2b,15.3a,15.3b]
	6/4A	*Agri-Flex SC plus oil	5.5-8.5 fl.oz./A or 1.5-2 fl.oz./100 gal 1 gal/A or 1 qt/100 gal	35	12	High	[1.0,15.2a,15.3a,15.3b,15.4]
Dogwood borer	1B	Lorsban 4EC	1.5 qt/100 gal	PB/28 (A)	96	High	[17.1]
	1B	Lorsban 75WG	2 lb/100 gal	PB/28 (A)	96	High	[17.1]
	4A	Assail 30SG	8 oz/A	7	12	Moderate	[17.2]
European corn borer	5	Delegate 25WG	4.5-7 oz/A	7	4	High	[19.2]
	11A	Dipel 10.3DF	0.5-2 lb/A	0	4	Moderate	[19.2]
European red mite	6	*Agri-Mek 8SC	2.25-4.25 fl.oz./A 0.5-1 fl.oz./100 gal	28	12	High	[20.8,20.9]
	10A	Apollo 4SC	4-8 fl.oz./A	45	12	High	[20.5,20.5a,20.6,20.11,20.11a]
	10A	Onager 1 EC	12-24 fl.oz./A	28	12	High	[20.5,20.5b,20.11,20.11a]
	10A	Savey 50DF	3 oz/A	28	12	High	[20.5,20.5b,20.6,20.11,20.11a]
	10B	Zeal	2-3 oz/A	14	12	High	[20.5,20.5b,20.9,20.11]
	12B	Vendex 50WP	1-2 lb/A 4-8 oz/100 gal	14	48	Low	[20.11,20.11c]
	20B	Kanemite 15SC	31 fl.oz./A	14	12	High	[20.9,20.9b,20.11,20.11c]
	21A	Nexter 75WS	4.4-5.2 oz/A	25	12	High	[20.9,20.9a,20.11]
	21A	Portal 0.4EC	2 pt/A	14	12	High	[20.9,20.9a,20.11]
	UN	Acramite 50WS	0.75-1 lb/A	7	12	High	[20.9,20.9a,20.11]
3A/6	*Gladiator EC	19 fl.oz./A 4.75 fl.oz./100 gal	28	12	High	[1.0,20.8,20.9]	
Fire blight		Apogee 27.5%	4.5-9.0 oz/100 gal	45	12		[8.6]
		Firewall	24.0 oz/A 8.0 oz/100 gal	50	12		[8.5]
Japanese beetle	1A	Sevin 4F	1.5-3 qt/A	3	12	High	[22.2]
	1A	Sevin 80 Solupak	1.88-3.75 lb/A	3	12	High	[22.2]
	1A	Sevin XLR Plus 4EC	1-5-3 qt/A	3	12	High	[22.2]
	1B	Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	High	[22.2]

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Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Additional Summer Sprays (continued)							
Japanese beetle (continued)	4A	Assail 30SG	5-8 oz/A	7	12	High	[22.2]
	4A	Calypso 4F	4-8 fl.oz./A 1-2 fl.oz./100 gal	30	12	High	[22.2]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	Moderate	[1.0,22.2]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	High	[1.0,22.2]
Lesser appleworm		Checkmate CM-OFM Duel	150-200 dispensers/ acre		0	High	[14.2]
		Checkmate Puffer CM-OFM	1-2 units/ acre		0	High	[14.2]
		Isomate-CM/OFM TT	200 ties/ acre		0	High	[14.2]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[14.1a]
	3A	Baythroid XL 1EC	2-2.4 fl.oz./A	7	12	Moderate	[14.1a]
	4A	Assail 30SG	4-8 oz/A	7	12	High	[14.1a,14.3a,14.3c]
	5	Delegate 25WG	4.5-7 oz/A	7	4	High	[14.1a]
	15	Rimon 0.83EC	20-40 fl.oz./A	14	12	High	[14.1a,14.3i]
	18	Intrepid 2F	12-16 fl.oz./A	14	4	Moderate	[14.1a,14.3b]
	22	Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[14.1a,14.3a]
	28	Altacor 35WDG	2.5-4.5 oz/A	5	4	High	[14.1a,14.3a,14.3b]
	28	Belt 4SC	3-5 fl.oz./A	14	12	High	[14.1a]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	Moderate	[1.0,14.1a]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	Moderate	[1.0,14.1a,14.3k]
4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,14.1a]	
4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0,14.1a,14.3k]	
Obliquebanded leafroller	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	Moderate	[24.2,24.2a,24.2c]
	1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	Moderate	[24.2,24.2a,24.2c]
	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	Moderate	[24.2,24.3,24.3b,24.3c]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	Moderate	[24.2,24.3,24.3b,24.3c,24.3d]
	3A	Baythroid XL 1EC	2.4-2.8 fl.oz./A	7	12	Moderate	[24.2,24.3,24.3c]
	3A	Danitol 2.4EC	16 fl.oz./A	14	24	Moderate	[24.2,24.2d,24.3,24.3b,24.3c]
	5	Delegate 25WG	4.5-7 oz/A	7	4	High	[24.2,24.3,24.3b]
	5	Entrust 2SC	6-10 fl.oz./A		4	High	[24.2,24.3,24.3b]
	5	Entrust 80WP	2-3 oz/A 0.67-1 oz/100 gal	7	4	High	[24.2,24.3,24.3b]
	6	Proclaim 5SG	3.2-4.8 oz/A 0.8-1.2 oz/100 gal	14	12	High	[24.2,24.2e,24.3,24.3b]
	11A	Agree 3.8WS	1-2 lb/A	0	4	Moderate	[24.1,24.2,24.3,24.3a]
11A	Deliver 18WG	0.5-2 lb/A	0	4	Moderate	[24.1,24.2,24.3,24.3a]	

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Additional Summer Sprays (continued)							
Obliquebanded leafroller (continued)	11A	Dipel 10.3DF	0.5-2 lb/A	0	4	High	[24.1,24.2,24.3, 24.3a]
	11A	Javelin 7.5WDG	0.5-4 lb/A 0.13-1 lb/100 gal	0	4	Moderate	[24.1,24.2,24.3, 24.3a]
	15	Rimon 0.83EC	20-40 fl.oz./A	14	12	High	[14.3i,24.2,24.3]
	18	Intrepid 2F	8-16 oz/A	14	4	High	[24.2,24.3, 24.3b]
	28	Altacor 35WDG	2.5-4.5 oz/A	5	4	High	[24.2,24.3,24.3b]
	28	Belt 4SC	3-5 fl.oz./A	14	12	High	[24.2,24.3,24.3b]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	Moderate	[1.0,24.2,24.3, 24.3b,24.3c]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	Moderate	[1.0,24.2,24.3, 24.3b,24.3c,24.4]
	4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0,24.2,24.3, 24.3b,24.4]
	Oriental fruit moth		Checkmate CM-OFM Duel	150-200 dispensers/ acre		0	High
		Checkmate OFM-F 24.6S	1.32-2.93 fl.oz./A		0	Moderate	[14.2]
		Isomate-CM/OFM TT	200 ties/ acre		0	High	[14.2]
		Isomate OFM TT	100 ties/A		0	High	[14.2]
1B		Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	High	[14.1a]
3		Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	Moderate	[14.1a]
3A		Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[14.1a]
3A		Baythroid XL 1EC	2-2.4 fl.oz./A	7	12	Moderate	[14.1a]
4A		Assail 30SG	4-8 oz/A	7	12	High	[14.1a,14.3,14.3a, 14.3c]
4A		Calypso 4F	4-8 fl.oz./A 1-2 fl.oz./100 gal	30	12	High	[14.1a]
5		Delegate 25WG	4.5-7 oz/A	7	4	High	[14.1a]
5		Entrust 2SC	6-10 fl.oz./A		4	Moderate	[14.1a]
5		Entrust 80WP	2-3 oz/A 0.67-1 oz/100 gal	7	4	Moderate	[14.1a]
15		Rimon 0.83EC	20-40 fl.oz./A	14	12	High	[14.3i]
18		Intrepid 2F	12-16 fl.oz./A	14	4	Moderate	[14.1a,14.3b]
22		Avaunt 30WDG	5-6 oz/A	14	12	Moderate	[14.1a,14.3a]
28		Altacor 35WDG	2.5-4.5 oz/A	5	4	High	[14.1,14.3,14.3a, 14.3b]
28		Belt 4SC	3-5 fl.oz./A	14	12	High	[14.1a]
3A/6		*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	Moderate	[1.0,14.1a]
4A/3A		Endigo ZC	5-6 fl.oz./A	35	24	Moderate	[1.0,14.1a,14.3k,]
4A/3A		Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,14.1a]
4A/28		Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0,14.1a,14.3k]
Oystershell scale	1A	Sevin 4F	1.5-3 qt/A	3	12	High	[25.1]
	1A	Sevin 80 Solupak	1.88-3.75 lb/A	3	12	High	[25.1]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)	
Additional Summer Sprays (continued)								
Oystershell scale (continued)	1A	Sevin XLR Plus 4EC	1.5-3 qt/A	3	12	High	[25.1]	
	16	Centaur 0.7WDG	34.5 oz/A	14	12	High		
Plum curculio		Surround 95WP	25-50 lb/A	0	4	Moderate	[12.2,26.2]	
	1A	Sevin 4F	1.5-3 qt/A	3	12	Moderate	[26.2,26.4c]	
	1A	Sevin 80 Solupak	1.88-3.75 lb/A	3	12	Moderate	[26.2,26.4c]	
	1A	Sevin XLR Plus 4EC	1.5-3 qt/A	3	12	Moderate	[26.2,26.4c]	
	1B	Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	High	[26.2,26.4a]	
	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	Moderate	[26.2]	
	3A	Baythroid XL 1EC	2.4-2.8 fl.oz./A	7	12	Moderate	[26.2]	
	3A	Danitol 2.4EC	16 fl.oz./A	14	24	Moderate	[26.2]	
	4A	Actara 25WDG	4.5-5.5 oz/A	14/35 (A)	12	High	[26.2,26.4a,26.4b]	
	4A	Calypso 4F	4-8 fl.oz./A 1-2 fl.oz./100 gal	30	12	High	[26.2,26.4a]	
	22	Avaunt 30WDG	5-6 oz/A	14	12	High	[26.2,26.4a]	
	4A/28	Voliam Flexi WDG	6-7 oz/A	35	12	High	[1.0,26.2,26.4b]	
	6/4A	*Agri-Flex SC plus oil	5.5-8.5 fl.oz./A or 1.5-2 fl.oz./100 gal 1 gal/A or 1 qt/100 gal	35	12	High	[1.0,26.2,26.4b]	
	Powdery Mildew		JMS Stylet-Oil	1.0-2.0 gal/100 gal	0	4		[9.3,9.4]
1		Thiophanate Methyl 85WDG	0.6-0.8 lb/A 0.2-0.3 lb/100 gal	1	48		[2.12,9.4]	
1		Topsin M 70WP	0.75-1.0 lb/A 0.2-0.25 lb/100 gal	1	48		[2.12,9.4]	
1		Topsin M WSB	0.75-1.0 lb/A 0.2-0.25 lb/100 gal	1	48		[2.12,9.4]	
3		Inspire Super	8.5-12.0 fl.oz./A	14	12			
3		Indar 2F	6.0-8.0 fl.oz./A	14	12			
3		Procure 480SC	8.0-16.0 fl.oz./A	14	12			
3		Rally 40WSP	5.0-10.0 oz/A 1.6-3.3 oz/100 gal	14	24			
3		Vintage SC	3.0 fl.oz./100 gal	30	24			
11		Flint	2.0-2.5 oz/A 0.67-0.8 oz/100 gal	14	12			
11		Sovran 50WDG	4.0-6.4 oz/A 1.0-1.6 oz/100 gal	30	12			
Redbanded leafroller		1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[12.1d,27.2]
		1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	High	[12.1d,27.2]
	1B	Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	High	[27.1]	
	3A	Baythroid XL 1EC	2.4-2.8 fl.oz./A	7	12	High	[27.2]	
	5	Delegate 25WG	4.5-7 oz/A	7	4	High	[27.2]	
	6	Proclaim 5SG	3.2-4.8 oz/A 0.8-1.2 oz/100 gal	14	12	High	[27.2]	
	11A	Agree 3.8WS	1-2 lb/A	0	4	High	[24.1,27.2]	

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Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Additional Summer Sprays (continued)							
Redbanded leafroller (continued)	11A	Deliver 18WG	0.5-2 lb/A	0	4	High	[24.1,27.2]
	11A	Dipel 10.3DF	0.5-2 lb/A	0	4	High	[24.1,27.2]
	11A	Javelin 7.5WDG	0.5-4 lb/A 0.13-1 lb/100 gal	0	4	High	[24.1,27.2]
	15	Rimon 0.83EC	20-40 fl.oz./A	14	12	High	[14.3i]
	28	Altacor 35WDG	2.5-4.5 oz/A	5	4	High	[27.2]
	28	Belt 4SC	3-5 fl.oz./A	14	12	High	[27.2]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	High	[1.0,27.2]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	High	[1.0,27.2]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,27.2]
San Jose scale	1B	Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	Moderate	[29.4]
	4A	Admire Pro 4.6SC	2.8 fl.oz./A	7	12	Moderate	[29.4]
	4A	Assail 30SG	8 oz/A	7	12	Moderate	[29.4,29.4a]
	7C	Esteem 35WP	4-5 oz/A	45	12	High	[29.4]
	16	Centaur 0.7WDG	34.5 oz/A	14	12	High	[29.3,29.4]
	23	Movento 240SC	6-9 fl.oz./A	7	24	High	[29.4,29.4b]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	Moderate	[1.0,15.4,29.4]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	Moderate	[1.0,29.4]
Sooty Blotch & Flyspeck	M3	Indar 2F	6.0-8.0 fl oz/A	14	12		
	M3	Inspire Super	8.5-12.0 fl oz/A	14	12		
	M3	Ziram 76DF, 76 WDG	1.0 lb/100 gal	14	48		
	M4	Captan 80WDG	2.5 lb/A 0.625 lb/100 gal	0	24		
	M4	Captan 4L	4 qt/A 0.5-1.0 qt/100 gal	0	24		
	M4	Captan 50WP	4.0 lb/A 1.0 lb/100 gal	0	24		
	1	Thiophanate Methyl 85WDG	0.6-0.8 lb/A 0.2-0.3 lb/100 gal	1	48		
	1	Topsin M 70WP	3.2-4.0 oz/100 gal	1	48		[10.1,10.2]
	1	Topsin M WSB	3.2-4.0 oz/100 gal	1	48		[10.1,10.2]
	1	Topsin M 70WP, WDG	0.75-1 lb/A 4-6 oz/100 gal	1	48	1	[10.1]
	1	or Thiophanate-methyl 85WDG plus:	.6-.8 lb/A .2-.3 lb/100 gal	1	48		[10.2]
	M4	Captan 50WP	4 lb/A 1 lb/100 gal	0	24		
	M4	or Captan 80WDG	2.5 lb/A 5/8 lb/100 gal	0	24		
	M4	or Captan 4L	1 pt/100 gal	0	24		
	M3	or Manzate/ Penncozeb 75DF or 80WP	3 lb/A 1 lb/100 gal	77	24		[2.8]
	M3	or Manzate/Dithane/ Penncozeb Flowable	2.4 qt/A see label	77	24		
M3	or Polyram 80DF	3 lb/A 1 lb/100 gal	77	24			

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Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Additional Summer Sprays (continued)							
Sooty Blotch & Flyspeck (continued)	11	Flint	2.0-2.5 oz/A 0.67-0.8 oz/100 gal	14	12		
	11	Sovran 50WDG	4.0-6.4 oz/A 1.0-1.6 oz/100 gal	30	12		
	11	Cabrio EG	5.0-8.0 oz/A 4.0 oz/100 gal	0	12		
	7,11	Pristine 38WDG	14.5-18.5 oz/A	0	12		
Spotted tentiform leafminer, Apple blotch leafminer	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[12.1d,30.2,30.2a,30.2b,30.3]
	1A	Lannate LV 2.4L	1.5-3 pts/A 0.75 pt/100 gal	14	72	High	[12.1d,30.2,30.2a,30.3]
	1A	Vydate 2L	2-4 pts/A 1 pt/100 gal	14	48	High	[30.1,30.2,30.2a,30.3,30.3a]
	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	High	[30.1,30.1a,30.2,30.3]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[30.1,30.1a,30.1b,30.2,30.3]
	3A	Baythroid XL 1EC	2-2.4 fl.oz./A	7	12	High	[30.1,30.1a,30.2,30.3]
	3A	Danitol 2.4EC	10.67-16 fl.oz./A	14	24	High	[30.1,30.1a,30.1b,30.2,30.2a,30.2b,30.3]
	4A	Actara 25WDG	4.5 oz/A	14/35 (A)	12	High	[15.4,30.1,30.1d,30.2,30.2a,30.2c,30.3]
	4A	Admire Pro 4.6SC	2.8 fl.oz./A	7	12	High	[30.2,30.2a,30.3]
	4A	Assail 30SG	2.5 oz/A	7	12	High	[30.1,30.2,30.2a,30.3]
	4A	Calypso 4F	2-4 fl.oz./A 0.5-1 fl.oz./100 gal	30	12	High	[30.1,30.2,30.2a,30.2c,30.3]
	5	Delegate 25WG	4.5-7 oz/A	7	4	High	[30.1,30.1e,30.2,30.2a,30.3]
	5	Entrust 2SC	6-10 fl.oz./A	7	4	High	[30.2,30.3]
	5	Entrust 80WP	2-3 oz/A 0.67-1 oz/100 gal	7	4	High	[30.2,30.3]
	6	*Agri-Mek 8SC	2.25-4.25 fl.oz./A 0.5-1 fl.oz./100 gal	28	12	High	[30.3]
	6	Proclaim 5SG	3.2-4.8 oz/A 0.8-1.2 oz/100 gal	14	12	High	[30.1,30.2,30.3]
	15	Rimon 0.83EC	20-40 fl.oz./A	14	12	High	[14.3i,30.2]
	28	Altacor 35WDG	2.5-4 oz/A	5	4	High	[30.1,30.2,30.2d,30.3]
	28	Belt 4SC	3-5 fl.oz./A	14	12	High	[30.1,30.2,30.2d,30.3]
	UN	Aza-Direct 1.2L	11.5-42 fl.oz./A	0	4	High	[30.1,30.2,30.3]
UN	Azatin XL 0.27EC	10-16 fl.oz./A	0	4	High	[30.1,30.2,30.3]	
3A/6	*Gladiator EC	19 fl.oz./A 4.75 fl.oz./100 gal	28	12	High	[1.0,30.1,30.1a,30.2,30.3]	

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Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Additional Summer Sprays (continued)							
Spotted tentiform leafminer, Apple blotch leafminer (continued)	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	High	[1.0,15.4,30.2,30.3]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,30.2,30.3]
	4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0,15.4,30.2,30.3]
	6/4A	*Agri-Flex SC plus oil	5.5-8.5 fl.oz./A or 1.5-2 fl.oz./100 gal 1 gal/A or 1 qt/100 gal	35	12	High	[1.0,15.4,30.2]
Spotted wing Drosophila	1B	Imidan 70W	2.13-5.75 lb/A 0.75-1.0 lb/100 gal	7	4 days	Moderate	[31.2]
	5	Delegate 25WG	4.5-7 oz/A	7	4	Moderate	[31.2,31.2a]
	5	Entrust 2SC	6-10 fl.oz./A		4	High	[31.2,31.2b]
	5	Entrust 80WP	1.5-3 oz/A	7	4	High	[31.2,31.2b]
Stink bugs, incl. Brown marmorated stink bug		Surround 95WP	25-50 lb/A	0	4	Moderate	[12.2,32.2a]
	1A	Lannate 90SP	0.75 lb/A	14	72	High	[32.2a,32.2b]
	1A	Lannate LV 2.4L	2.25 pt/A	14	72	High	[32.2a,32.2b]
	1A	Vydate 2L	1.5-3 pt/A	14	48	Moderate	[32.2a,32.2b]
	2A	Thionex 3EC	2.67 qt/A 0.5 qt/100 gal	21	7 days	High	[32.2a,32.2b,32.2c]
	2A	Thionex 50WP	4 lb/A 0.75 lb/100 gal	21	20 days	High	[32.2a,32.2b,32.2c]
	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	Moderate	[32.2a]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	Moderate	[32.2a]
	3A	Baythroid XL 1EC	2.0-2.4 fl.oz./A	7	12	Moderate	[32.2a]
	3A	Danitol 2.4EC	10.7-21.3 fl.oz./A	14	24	Moderate	[32.2a,32.2b]
	4A	Actara 25WDG	4.5-5.5 oz/A	14/35 (A)	12	Moderate	[15.4,32.2a,32.2b]
	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	Moderate	[1.0,32.2a]
	4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	High	[1.0, 15.4,32.2a]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	Moderate	[1.0,32.2a]
4A/28	Voliam Flexi WDG	6.0-7.0 oz/A	35	12	Moderate	[1.0,15.4,32.2a]	
Twospotted spider mite	10B	Zeal	2-3 oz/A	14	12	High	
	12B	Vendex 50WP	1-2 lb/A 4-8 oz/100 gal	14	48	Moderate	
	20B	Kanemite 15SC	31 fl.oz./A	14	12	High	
	21A	Nexter 75WS	8.8-10.7 oz/A	25	12	Moderate	
	21A	Portal 0.4EC	2 pt/A	14	12	High	
	UN	Acramite 50WS	0.75-1 lb/A	7	12	High	
Variegated leafroller, Sparganothis fruitworm	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[12.1d,34.1]
	1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	High	[12.1d,34.1]
	11A	Deliver 18WG	0.5-2 lb/A	0	4	Moderate	[24.1,34.1,34.1a]
	11A	Dipel 10.3DF	0.5-2 lb/A	0	4	Moderate	[24.1,34.1,34.1a]
	11A	Javelin 7.5WDG	0.5-4 lb/A 0.13-1 lb/100 gal	0	4	Moderate	[24.1,34.1,34.1a]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Additional Summer Sprays (continued)							
Variegated leafroller, Sparganothis fruitworm (continued)	3A/6	*Gladiator EC	14-19 fl.oz./A 3.5-4.75 fl.oz./100 gal	28	12	High	[1.0,34.1]
	4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,34.1,34.1a]
White apple leafhopper, Potato leafhopper	1A	Lannate LV 2.4L	1.5-3 pt/A 0.75 pt/100 gal	14	72	High	[12.1d,35.1]
	1A	Lannate 90SP	0.5-1 lb/A 0.25 lb/100 gal	14	72	High	[12.1d,35.1]
	1A	Sevin 4F	0.5-1.5 qt/A	3	12	High	[35.1,35.1a]
	1A	Sevin 80 Solupak	0.63-1.88 lb/A	3	12	High	[35.1,35.1a]
	1A	Sevin XLR Plus 4EC	0.5-1.5 qt/A	3	12	High	[35.1,35.1a]
	1A	Vydate 2L	2-4 pt/A 1-2 pt/100 gal	14	48	High	[35.1,35.1a]
	2A	Thionex 3EC	2.6 qt/A 0.5 qt/100 gal	21	7 days	High	[35.1,35.1b]
	2A	Thionex 50WP	4 lb/A 0.75 lb/100 gal	21	20 days	High	[35.1,35.1b]
	3	Warrior II 2.08CS	1.28-2.56 fl.oz./A	21	24	High	[35.1]
	3A	Asana XL 0.66EC	4.8-14.5 fl.oz./A 2-5.8 fl.oz./100 gal	21	12	High	[35.1]
	3A	Baythroid XL 1EC	1.4-2 fl.oz./A	7	12	High	[35.1]
	3A	Danitol 2.4EC	10.67-16 fl.oz./A	14	24	High	[35.1]
	4A	Actara 25WDG	2-2.75 oz/A	14/35 (A)	12	High	[15.4,35.1,35.1c]
	4A	Admire Pro 4.6SC	2.8 fl.oz./A	7	12	High	[35.1]
	4A	Assail 30SG	2.5-4 oz/A	7	12	High	[35.1]
	4A	Calypso 4F	2-4 fl.oz./A 0.5-1 fl.oz./100 gal	30	12	High	[35.1,35.1c]
	16	Centaur 0.7WDG	9-12 oz/A	14	12	Moderate	[35.1]
	21A	Portal 0.4EC	2 pt/A	14	12	High	[35.1]
	22	Avaunt 30WDG	5-6 oz/A	14	12	High	[35.1,35.1c]
	UN	Aza-Direct 1.2L	12.5-42 fl.oz./A	0	4	Moderate	[35.1]
UN	Neemix	7-16 fl.oz./A	0	4	Moderate	[35.1]	
4A/3A	Endigo ZC	5-6 fl.oz./A	35	24	High	[1.0,15.4,35.1]	
4A/3A	Leverage 360	2.4-2.8 fl.oz./A	7	12	High	[1.0,35.1]	
4A/28	Voliam Flexi WDG	4-7 oz/A	35	12	High	[1.0,15.4,35.1]	
6/4A	*Agri-Flex SC plus oil	5.5-8.5 fl.oz./A or 1.5-2 fl.oz./100 gal 1 gal/A or 1 qt/100 gal	35	12	High	[1.0,15.4,35.1]	
Woolly apple aphid	1B	Diazinon 50WP	1 lb/100 gal	21/PF (A)	96	High	[36.1,36.1b]
	2A	Thionex 3EC	2.6 qt/A 0.5 qt/100 gal	21	7 days	Moderate	[35.1b,36.1]
	2A	Thionex 50WP	4 lb/A 0.75 lb/100 gal	21	20 days	Moderate	[35.1b,36.1]
	4A	Admire Pro 4.6SC	7-10.5 fl.oz./A	7	12	Moderate	[36.2]
	4A	Assail 30SG	2.5-4 oz/A	7	12	Moderate	[36.1,36.1a]

Table 11.5.1 Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

Rate key: /A = per acre; /100 gal = per 100 gal water

Pest	IRAC & FRAC	Product	Rates	PHI (days)	REI (hrs)	Efficacy	Comments (see text)
Additional Summer Sprays (continued)							
Woolly apple aphid (continued)	9C	Beleaf 50SG	2.0-2.8 oz/A	21	12	Moderate	[36.1]
	23	Movento 240SC	6-9 fl.oz./A	7	24	High	[29.4b,36.1]
Postharvest							
Crown rot	4	Ridomil Gold SL	2 qt/A 0.5 pt/100 gal		48		[7.2]
Control of Storage Disorders							
Apple scab	M3	Penncozeb 75DF	3.0-6.0 lb/A 1.0-2.0 lb/100 gal	BL, 77(A)	24		[2.7]
Control of Storage Disorders							
Storage rots	1	Mertect 340F <i>plus</i>	1 pt/100 gal				[37.1]
	M4	Captan 50WP <i>or</i>	2.5 lb/100 gal				
	M4	Captan 80WP <i>or</i>	1.6 lb/100 gal				
	M4	Captec 4L	1.25 qt/100 gal				
			Penbotec	16-32 fl oz/100 gal			
	12	Scholar SC	10-16 fl oz/100 gal 16-32 fl oz/200,000 lb fruit				[37.1]
Storage scald		No Scald DPA-EC-283	2.5-5 pt/100 gal				[38.1]
Senescent break-down (McIntosh)		Dowflake Process Grade	25 lb/100 gal				[39.1]

11.2 Apple Disease Notes

11.2.1 Apple Rust Diseases

• Biology & Cultural

Varieties that are susceptible to cedar apple rust include: Arlet, Braeburn, Fuji, Gala, Ginger Gold, Goldrush, Golden Delicious, Idared, Jonathan, Lodi, Mutsu (Crispin), and Rome. All varieties are susceptible to quince rust under favorable weather conditions. See Table 6.2.3 for a precise listing of temperature and wetting periods necessary to cause cedar-apple rust infections. Maintain short intervals during periods of wet weather in orchards where quince rust fruit infections have been a problem. Quince rust infections are most likely to develop when long wetting periods (48 hours or more) occur between tight cluster and first cover and the average temperature is greater than 50°F.

Refer to the reference materials list at the end of this publication for a Fact Sheet containing more details on the biology and management of this pest.

11.2.2 Apple Scab

• Biology & Cultural

Refer to the reference materials list at the end of this publication for a Fact Sheet containing details on the biology and management of this pest.

• Pesticide Application Notes

[1.3] The EBDC fungicides (mancozeb, maneb, Polyram) are labeled for use on apples in one of two different ways: (i) at a rate of 1.5-2 lb/100 gal (maximum 6 lb/A, no more than 24 lb/A per year), not to be applied after bloom; OR (ii) at a reduced rate of 3 lb/A (maximum 21 lb/A per year), which may be applied to within 77 days of harvest. The latter rate is adequate for control of rust diseases, and the extended timing is necessary to control rust infections on terminal leaves. It is illegal to combine or integrate the two treatment regimes.

[2.1] See discussion of inoculum reduction in the disease management section. Scab fungicide sprays beginning at green tip are absolutely essential in orchards with high carry-over inoculum or orchards where scab control with SI fungicides was less than satisfactory in previous years. If early season infections are allowed to become established, even the best fungicide programs will not prevent development of fruit scab in orchards where the scab fungus has developed resistance to all three of the fungicide groups (dodine, benzimidazoles, SI's) that previously provided presymptom and postinfection activity against apple scab.

[2.2] Fungicide rates per acre should never be reduced below either (i) 50% of the per-acre rate listed on the label or (ii) 1.5 multiplied by the Amt/100 gal listed on the label. This applies even when spraying small trees. Although tree-row volume calculations may suggest that lower rates are appropriate, applying less than 50% of the