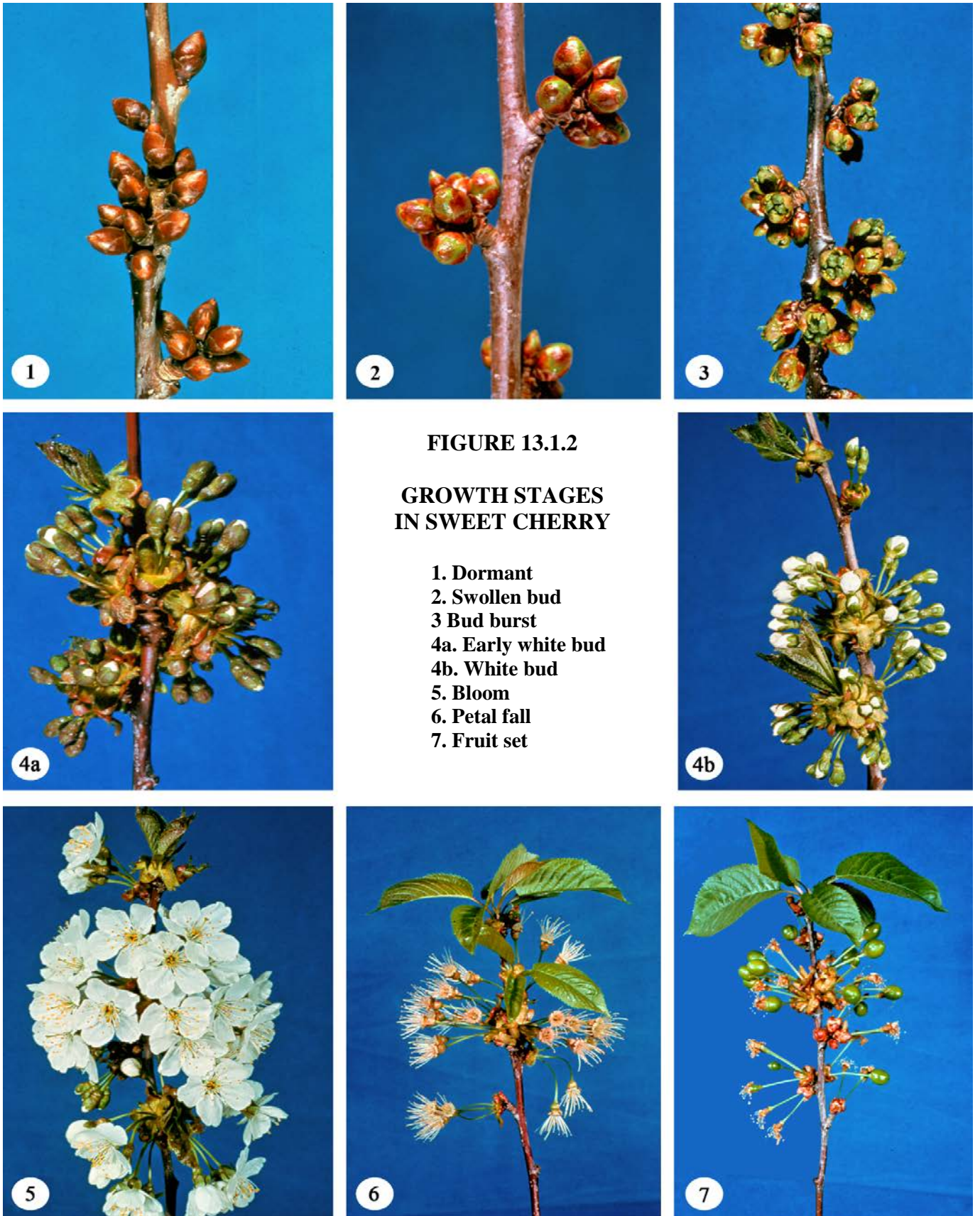


FIGURE 13.1.1
GROWTH STAGES
IN TART CHERRY

- 1. Dormant**
- 2. Swollen bud**
- 3 Bud burst**
- 4a. Early white bud**
- 4b. White bud**
- 5. Bloom**
- 6. Petal fall**
- 7. Fruit set**



13 Cherries

13.1 Insecticides and Fungicides for Cherries

See Sections 13.2, 13.3, and 13.4 for comments related to this table.

Table 13.1.1. Pesticide Spray Table – Cherries

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

Pest	IRAC/ FRAC Code	Product	Rate(s)	REI (hrs)	PHI (days)	Efficacy	Comments (see text)
Late Dormant							
Bacterial canker (<i>Pseudomonas syringae</i>)	M	Kocide 3000	1.1-2.3 lb/100 gal	48	BL, PH (C)		[1.1]
	M	or Cuprofix Ultra 40	5-8 lb/A	48	BL, PH (C)		[1.2]
	-	Disperss					
	-	Badge SC	5-14 pt/A	48	BL		
	-	§Badge X2	3.5-7 lb/A	48	BL		
		or §other coppers	see comments, read labels				
Phytophthora root, crown and collar rots	4	Ridomil Gold 4SL	2 qt/A	48	0		[5.2]
European red mite, Scales	-	§oil	2 gal/100 gal	12	0	high	[11.1],[16.1]
European fruit lecanium scale, San Jose scale	4A	Assail 30SG	5.3-8 oz/A	12	7	moderate	[16.1]
	16	Centaur 0.7WDG	34.5-46.0 oz/A	12	14	high	
	7C	Esteem 35WP	4-5 oz/A	12	14	high	
	1B	*Lorsban Advanced 3.76EC	1.5-4 pt/A	96	PB	high	
	1B	Lorsban 75WG	1.33-2 lb/A	96	14	high	
White bud							
Brown rot (blossom blight)	M5	Bravo Weather Stik 6F	1.0-1.375 pt/100 gal or 3.1-4.1 pt/A or other chlorothalonil formulations (see labels)	12	SS		
	4	Captan 50WP	4 lb/A	24	0		[3.1],[3.2]
		or Captan 80 WDG	2.5 lb/A	24	0		
		or Captec 4L	0.75-1 qt/100 gal or 2 qt/A	24	0		
	M5	Echo 720	1.09-1.4 pt/100 gal	12	SS		
		or Echo 90DF	2.25-3.5 lbs/A				
	17	Elevate 50WDG	0.33-0.5 lb/100 gal or 1.5 lb/A	12	0		
	7	Fontelis SC	14-20 fl oz /A	12	0		[3.8]
	3	Indar 2F	6fl oz/A	12	0		
	7,11	Merivon	4-6.7 fl oz/acre	12	0		
	2	Meteor 4F	1-2 pt/acre	24	PF		
	3	Tilt	1.0-1.6 fl oz/100 gal or 4 fl oz/A	12	0		
	7,11	Pristine 38WDG	10.5-14.5 oz/A	12	0		
	11	Cabrio EG	9.55 oz/A	12	0		
	3	Quash	2.5-3.5 oz/A	12	14		
3	Rally 40 WSP	1.25-2 oz 100 gal or 2.5-6 oz/A	24	0			
2	Rovral 4F	8fl oz/100 gal or 1 pt/A	24	PF			

Table 13.1.1. Pesticide Spray Table – Cherries*Refer to back of book for key to abbreviations and footnotes.*

Pest	IRAC/ FRAC Code	Product	Rate(s)	REI (hrs)	PHI (days)	Efficacy	Comments (see text)
White bud (continued)							
Brown rot (blossom blight) <i>(continued)</i>	M2	Sulfur 92WP	5-10 lb/100 gallons	24	0		
	M2	§Microthiol Disperss	10-20 bl/100 gallons	24	0		
	-	Badge SC	5 pt/A	48	BL		
	-	§Badge X2	3.5-5 lb/A	48	BL		
Black cherry aphid	3A	*Asana XL 0.66EC	2-5.8 fl oz/100 gal or 4.8-14.5 fl oz/A	12	14	high	[9.1]
	4A	Assail 30SG	2.5-5.3 oz/A	12	7	high	
	-	§Aza-Direct 1.2L	11.5-42 fl oz/A	4	0	moderate	
	-	Azatin XL Plus 3L	10-16 fl oz/A	4	0	moderate	
	3A	*Baythroid XL 1EC	2.4-2.8 fl oz/A	12	7	high	
	9C	Beleaf 50SG	2-2.8 oz/A	12	14	high	
	1B	Malathion 57EC	1.5 pt/A	12	3	moderate	
	-	§M-Pede 49L	2 gal/100 gal	12	0	moderate	
	23	Movento	6-9 fl oz/acre	24	7	high	
	3A	*Warrior II 2.08 CS	1.28-2.56 fl oz/A	24	14	high	
	28	Exirel	13.5-20.5 fl oz/A	12	3		
	-	§Des-X	2% vol/vol	12	0		
	-	§PFR 97	1-2 lb/A	4	0		
	The following pre-mix product is also labeled for use against this pest; however, for best effectiveness and insecticide resistance management, its use should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.						
	3A/28	*Voliam Xpress	6-12 fl oz/A	24	14	high	[9.1]
Bloom							
Black knot	M5	Bravo Ultrex 82.5 WDG	0.9-1.25 lb/100 gal or 2.8-3.8 lb/A	12	SS		[2.1],[2.2]
	M5	or Bravo Weather Stik 6F	1.0-1.375 pt/100 gal				
Brown rot (blossom blight)	See materials listed under White Bud						[3.1],[3.3], [3.4]
Petal fall							
Black knot	See recommendations under Bloom						[2.1],[2.2]
Brown rot	See recommendations under White Bud						[3.3],[3.5]
Leaf spot	M5	Bravo Ultrex 82.5 WDG	0.9-1.25 lb/100 gal or 2.8-3.8 lb/A	12	SS, PH		[4.1]
	M5	or Bravo Weather Stik 6F or other chlorothalonil formulations (see labels)	1.0-1.375 pt/100 gal				
	4	Captan 50WP	1-2 lb/100 gal or 4 lb/A	24	0		
	4	or Captan 80 WDG	2.5 lb/A	24	0		
	4	or Captec 4L	0.75-1 qt/100 gal or 2 qt/A	24	0		
	M5	Echo 720	1.0-1.4 pt/100 gal	12	SS		
	M5	or Echo 90DF	2.25-3.5 lbs/A				
	7	Fontelis SC	14-20 fl oz /A	12	0		[3.8]
	3	Indar 2F	6- fl oz/A	12	0		

Table 13.1.1. Pesticide Spray Table – Cherries

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

Pest	IRAC/ FRAC Code	Product	Rate(s)	REI (hrs)	PHI (days)	Efficacy	Comments (see text)	
Petal fall (continued)								
Leaf spot (continued)	3	Tilt	1.0-1.6 fl oz/100 gal or 4 fl oz/A	12	0			
	3	Rally 40 WSP	1.25-2 oz/100 gal or 2.5-6 oz/A	24	0			
	11	Gem 500SC	1.9-3.8 oz/A	12	1			
	7,11	Pristine 38WDG	10.5-14.5 oz/A	12	0			
	3	Quash	4 oz/A	12	14			
	M2	Sulfur 92WP	5-10 lb/100 gallons	24	0			
	M2	§Microthiol Disperss	10-20 bl/100 gallons	24	0			
	American plum borer, Lesser peachtree borer	3A	*Ambush 25WP	6.4-12.8 oz/A	12	3	moderate	[8.1],
3A		*Asana XL 0.66EC	2-5.8 fl oz/100 gal or 4.8-14.5 fl oz/A	12	14	high	[13.2]	
3A		*Baythroid XL 1EC	1.4-2.8 fl oz/A [see Comment 8.1]	12	7	high		
1B		*Lorsban Advanced 3.76EC	1.5-3 qt/100 gal	96	21	high		
1B		or Lorsban 75WG	1.3-2 lb/A	96	21	high		
3A		*Pounce 25WP	6.4-12.8 oz/A	12	3	moderate		
3A		*Warrior II 2.08 CS	1.28-2.56 fl oz/A	24	14	high		
		§Pheromone disruption ties:						
–		Isomate-PTB Dual	150 ties/A			high	[13.1]	
The following pre-mix products are also labeled for use against these pests; however, for best effectiveness and insecticide resistance management, their use should be reserved for situations when multiple pest species present are appropriately matched to the combination of active ingredients and modes of action contained in the product.								
	3A/6	*Gladiator EC	1.5-4.75 fl oz/100 gal or 6-19 fl oz/A	12	21	high		
	3A/28	*Voliam Xpress	6-12 fl oz/A	24	14	high	[8.1]	
Black cherry aphid	[see Comment 9.2]						[9.2]	
Plum curculio	4A	Actara 25WDG	4.5-5.5 oz/A	12	14	high	[15.1]	
	3A	*Ambush 25WP	6.4-12.8 oz/A	12	3	high		
	3A	*Asana XL 0.66EC	2-5.8 fl oz/100 gal or 4.8-14.5 fl oz/A	12	14	high		
	22A	Avaunt 30WDG	5-6 oz/A	12	14	high		
	3A	*Baythroid XL 1EC	2.4-2.8 fl oz/A	12	7	high		
	1B	Imidan-70W (tart cherry only!)	0.75 lb/100 gal or 2.13 lb/A	72	7(C)	high	[15.3]	
	1B	Lorsban 75WG	2 lb/A	96	14	high	[15.3]	
	3A	*Pounce 25WP	6.4-12.8 oz/A	12	3	high		
	1A	Sevin XLR Plus, 4F	2-3 qt/A	12	3	moderate		
	1A	or Sevin 80S	2.5-3.75 lb/A			moderate		
	–	Surround 95WP	50 lb/A	4	0	moderate	[15.2]	
	3A	*Warrior II 2.08 CS	1.28-2.56 fl oz/A	24	14	high		
	The following pre-mix products are also labeled for use against this pest; however, for best effectiveness and insecticide resistance management, their use should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.							

Table 13.1.1. Pesticide Spray Table – Cherries

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

Pest	IRAC/ FRAC Code	Product	Rate(s)	REI (hrs)	PHI (days)	Efficacy	Comments (see text)
Petal fall (continued)							
Plum curculio (continued)	3A/6	*Gladiator EC	1.5-4.75 fl oz/100 gal or 6-19 fl oz/A	12	21	high	
	3A/4A	*Leverage 360	2.4-2.8 fl oz/A	12	7	high	[15.1]
	4A/28	Voliam Flexi WDG	6-7 oz/A	12	14	high	
	3A/28	*Voliam Xpress	6-12 fl oz/A	24	14	high	
Shuck split							
Brown rot, Leaf spot	M5	Bravo Weather Stik 6F or other chlorothalonil formulations (see labels)	1.0-1.375 pt/100 gal or 3.1-4.1 pt/A	12	SS		[3.1],[3.2]
	4	Captan 50WP	1-2 lb/100 gal or 4 lb/A	24	0		
	4	or Captan 80 WDG	2.5 lb/A	24	0		
	4	or Captec 4L	0.75-1 qt/100 gal or 2 qt/A	24	0		
	M5	Echo 720	1.0-1.4 pt/100 gal	12	SS		
	M5	or Echo 90DF	2.25-3.5 lbs/A				
	7	Fontelis SC	14-20 fl oz /A	12	0		[3.8]
	7,11	Merivon	4-6.7 fl oz/acre	12	0		
	3	Rally 40 WSP (brown rot only)	2.5-6 oz/acre	24	0		
	11	Gem 500SC	1.9-3.8 oz/A	12	1		
	7,11	Pristine 38WDG	10.5-14.5 oz/A	12	0		
	11	Cabrio EG	9.55 oz/A	12	0		
	3	Indar 2F	6fl oz/A	12	0		
	3	Quash	2.5-4. oz/A	12	14		
	M2	Sulfur 92WP	5-10 lb/100 gallons	24	0		
M2	§Microthiol Disperss	10-20 bl/100 gallons	24	0			
Black knot	M5	Bravo Ultrex 82.5 WDG	0.9-1.25 lb/100 gal or 2.8-3.8 lb/A	12	SS		[2.1],[2.2]
	M5	or Bravo Weather Stik 6F or other chlorothalonil formulations (see labels)	1.0-1.375 pt/100 gal or 3.1-4.1 pt/A				
Black cherry aphid	4A	Admire Pro 4.6SC	1.4-2.8 fl oz/A	12	7	high	[9.1]
	3A	*Asana XL 0.66EC	2-5.8 fl oz/100 gal or 4.8-14.5 fl oz/A	12	14	high	
	4A	Assail 30SG	2.5-5.3 oz/A	12	7	high	
	–	§Aza-Direct 1.2L	11.5-42 fl oz/A	4	0	moderate	
	–	Azatin XL Plus 3L	10-21 fl oz/A	4	0	moderate	
	3A	*Baythroid XL 1EC	2.4-2.8 fl oz/A	12	7	high	
	9C	Beleaf 50SG	2-2.8 oz/A	12	14	high	
	1B	Lorsban 75WG	2 lb/A	96	14	moderate	[9.3]
	1B	Malathion 57EC	1.5 pt/A	12	3	moderate	
	–	§M-Pede 49L	2 gal/100 gal	12	0	moderate	
	23	Movento 240SC	6-9 fl oz/A	24	7	high	
	1A	Sevin XLR Plus, 4F or Sevin 80S	2-3 qt/A 2.5-3.75 lb/A	12	3	high high	
	28	Exirel	13.5-20.5 fl oz/A	12	3		

Table 13.1.1. Pesticide Spray Table – Cherries

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

Pest	IRAC/ FRAC Code	Product	Rate(s)	REI (hrs)	PHI (days)	Efficacy	Comments (see text)	
Shuck split (continued)								
Black cherry	-	§PFR 97	1-2 lb/A	4	0			
aphid (continued)	-	§Des-X	25% vol/vol	12	0			
The following pre-mix products are also labeled for use against this pest; however, for best effectiveness and insecticide resistance management, their use should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.								
	3A/4A	*Endigo ZC	5-5.5 fl oz/A	24	14	high	[9.1]	
	3A/4A	*Leverage 360	2.4-2.8 fl oz/A	12	7	high		
	4A/28	Voliam Flexi WDG	4-7 oz/A	12	14	high		
	3A/28	*Voliam Xpress	6-12 fl oz/A	24	14	high	[15.1]	
Plum curculio	See materials under Petal Fall							
Additional summer sprays								
Brown rot	4	Captan 50WP	1-2 lb/100 gal or 4 lb/A	24	0		[3.7]	
	4	or Captan 80 WDG	2.5 lb/A	24	0			
	4	or Captec 4L	0.75-1 qt/100 gal or 2 qt/A	24	0			
	17	Elevate 50WDG	1.0 lb/A	12	0			
	7	Fontelis SC	14-20 fl oz /A	12	0		[3.8]	
	3	Indar 2F	6 oz/A	12	0			
	7,11	Merivon	4-67 fl oz/acre	12	0			
	3	Tilt	1.0-1.6 fl oz/100 gal or 4 fl oz/A	12	0			
	11	Cabrio EG	9.55 oz/A	12	0			
	3	Gem 500 SC	2.9-3.8 oz/A	12	1			
	7,11	Pristine 38WDG	10.5-14.5 oz/A	12	0			
	3	Quash	2.5-4 oz/A	12	14			
	3	Rally 40 WSP	1.25-2 oz/100 gal or 2.5-6 oz/A	24	0			
Leaf spot	Choose from materials listed at Petal Fall.							[4.3]
Powdery mildew		Quintec	7fl oz/A	12	7		[6.1]	
		Rally 40WSP	1.25-2 oz/100 gal or 2.5-6 oz/A	24	0			
		Tilt	1.0-1.6 fl oz/100 gal or 4 fl oz/A	12	0			
		Procure 480SC	8-16 oz/A	12	1			
		Fontelis SC	14-20 fl oz /A	12	0		[3.8]	
		Gem 500SC	1.9-3.8 oz/A	12	1			
		Cabrio EG	9.55 oz/A	12	0			
		Pristine 38WDG	10.5-14.5 oz/A	12	0			
		Quash	2.5-4 oz/A	12	14			
		Sulfur 92WP	5-10 lb/100 gal	24	0			
	U8	Vivando	15.4 fl o/A	12	7			
		§Microthiol Disperss	10-20 lb/100 gal	24	0			
American plum borer	3A	*Asana XL 0.66EC	2-5.8 fl oz/100 gal or 4.8-14.5 fl oz/A	12	14	moderate	[8.1]	
	3A	*Baythroid XL 1EC	2.4-2.8 fl oz/A	12	7	moderate		

Table 13.1.1. Pesticide Spray Table – Cherries

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

Pest	IRAC/ FRAC Code	Product	Rate(s)	REI (hrs)	PHI (days)	Efficacy	Comments (see text)
Additional summer sprays (continued)							
American plum borer (continued)	1B	Lorsban 75WG	2-3 lb/A	96	21	high	
	The following pre-mix products are also labeled for use against this pest; however, for best effectiveness and insecticide resistance management, their use should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.						
	3A/4A	*Endigo ZC	5-5.5 fl oz/A	24	14	high	[8.1]
	3A/6	*Gladiator EC	1.5-4.75 fl oz/100 gal or 6-19 fl oz/A	12	21	moderate	
	3A/4A	*Leverage 360	2.4-2.8 fl oz/A	12	7	moderate	
	3A/28	*Voliam Xpress	6-12 fl oz/A	24	14	moderate	
Black cherry fruit fly, Cherry fruit fly	4A	Actara 25WDG	4.5-5.5 oz/A	12	14	moderate	[10.1]
	4A	Admire Pro 4.6SC	1.4-2.8 fl oz/A	12	7	moderate	
	3A	*Asana XL 0.66EC	2-5.8 fl oz/100 gal or 4.8-14.5 fl oz/A	12	14	high	
	4A	Assail 30SG	5.3-8 oz/A	12	7	high	
	3A	*Baythroid XL 1EC	2.4-2.8 fl oz/A	12	7	high	
	5	Delegate 25WG	4.5-7 oz/A	4	7	high	
	1B	*Diazinon 50WP	1 lb/100 gal	96	21	high	
	5	§Entrust 80WP	0.42-0.83 oz/100 gal or 1.25-2.5 oz/A	4	7	moderate	
	5	or §Entrust 2SC	1.3-2.7 fl oz/100 gal or 4-8 fl oz/A			moderate	
	1B	Imidan 70-W (tart cherry only)	0.75 lb/100 gal or 2.13 lb/A	72	7(C)	high	[10.3]
	1B	Lorsban 75WG	2 lb/A	96	14	high	[10.3]
	1A	Sevin XLR Plus, 4F	2-3 qt/A	12	3	high	
	1A	or Sevin 80S	2.5-3.75 lb/A			high	
	–	§Surround 95WP	50 lb/A	4	0	moderate	[10.2]
		3A	*Warrior II 2.08 CS	1.28-2.56 fl oz/A	24	14	high
	28	Exirel	10-17 fl oz/A	12	3		
	21A	Apta	14-27 fl oz/A	12	14		
The following pre-mix products are also labeled for use against these pests; however, for best effectiveness and insecticide resistance management, their use should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.							
	3A/4A	*Endigo ZC	5-5.5 fl oz/A	24	14	moderate	[10.1]
	3A/4A	*Leverage 360	2.4-2.8 fl oz/A	12	7	high	
	4A/28	Voliam Flexi WDG	6-7 oz/A	12	14	moderate	
	3A/28	*Voliam Xpress	6-12 fl oz/A	24	14	high	
European red mite, Twospotted spider mite	10A	Apollo 4SC	2-8 oz/A	12	21	high/poor (ERM/TSSM)	[11.4]
	3A	*Danitol 2.4EC	10.7-21.3 fl oz/A	24	3	moderate	
	21	Nexter 75WS	4.4-10.67 oz/A	12	300(PH)	high/mod	[11.3]
	10A	Onager 1EC	12-24 fl oz/A	12	7	high/poor	
	21	Portal 0.4EC	2 pt/A	12	7	high	
	10A	Savey 50DF	3-6 oz/A	12	28	high/poor	[11.4]
	12B	*Vendex 50WP	1-5-3 lb/A	48	14	moderate	[11.2]

Table 13.1.1. Pesticide Spray Table – Cherries

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

Pest	IRAC/ FRAC Code	Product	Rate(s)	REI (hrs)	PHI (days)	Efficacy	Comments (see text)
Additional summer sprays (continued)							
European red mite, Twospotted spider mite (continued)	10B	Zeal 72WS	2-3 oz/A	12	7	high	[11.4]
	-	§PFR 97	1-2 lb/A	4	0		
	-	§Des-X	25% vol/vol	12	0		
The following pre-mix product is also labeled for use against this pest; however, for best effectiveness and insecticide resistance management, its use should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.							
	3A/6	*Gladiator EC	4.75 fl oz/100 gal 19 fl oz/A	12	21	moderate	
Japanese beetle	4A	Admire Pro 4.6SC	1.4-2.8 fl oz/A	12	7	moderate	[12.2]
	4A	Assail 30SG	5.3-8 oz/A	12	7	high	
	1B	Imidan 70-W (tart cherry only)	0.75 lb/100 gal or 2.13 lb/A	72	7(C)	moderate	
	1A	Sevin XLR Plus, 4F or Sevin 80S	2-3 qt/A 2.5-3.75 lb/A	12	3	high	
	The following pre-mix products are also labeled for use against this pest; however, for best effectiveness and insecticide resistance management, their use should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.						
	3A/4A	*Endigo ZC	5-5.5 fl oz/A	24	14	high	[12.2]
	3A/4A	*Leverage 360	2.4-2.8 fl oz/A	12	7	high	
	3A/28	*Voliam Xpress	6-12 fl oz/A	24	14	high	
San Jose scale	4A	Admire Pro 4.6SC	2.8 fl oz/A	12	7	moderate	[16.2]
	4A	Assail 30SG	8 oz/A	12	7	moderate	
	16	Centaur 0.7WDG	34.5-46 oz/A	12	14	high	
	7C	Esteem 35WP	4-5 oz/A	12	14	high	
	23	Movento 240SC	6-9 fl oz/A	24	7	high	
	-	§Des-X	25% vol/vol	12	0		
	The following pre-mix product is also labeled for use against this pest; however, for best effectiveness and insecticide resistance management, its use should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.						
	3A/4A	*Leverage 360	2.4-2.8 fl oz/A	12	7	moderate	
Lesser peachtree borer	-	§Pheromone disruption ties: Isomate-PTB Dual	150 ties/A			high	[13.1]
	3A	*Ambush 25WP	6.4-12.8 oz/A	12	3	moderate	[13.2]
	3A	*Asana XL 0.66EC	2-5.8 fl oz/100 gal or 4.8-14.5 fl oz/A	12	14	high	
	3A	*Baythroid XL 1EC	1.4-2 fl oz /A	12	7	high	
	1B	or Lorsban 75WG	1.3-2 lb/A	96	14	high	
	3A	*Pounce 25WP	6.4-12.8 oz/A	12	3	moderate	
	3A	*Warrior II 2.08 CS	1.28-2.56 fl oz/A	24	14	high	
	The following pre-mix products are also labeled for use against this pest; however, for best effectiveness and insecticide resistance management, their use should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.						
	3A/4A	*Endigo ZC	5-5.5 fl oz/A	24	14	high	[13.2]

Table 13.1.1. Pesticide Spray Table – Cherries

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

Pest	IRAC/ FRAC Code	Product	Rate(s)	REI (hrs)	PHI (days)	Efficacy	Comments (see text)
Additional summer sprays (continued)							
Lesser peachtree borer (continued)	3A/6	*Gladiator EC	1.5-4.75 fl oz/100 gal or 6-19 fl oz/A	12	21	moderate	
	3A/28	*Voliam Xpress	6-12 fl oz/A	24	14	high	
Obliquebanded leafroller	28	Altacor 35WDG	3-4.5 oz/A	4	10	high	[14.1]
	3A	*Baythroid XL 1EC	2.4-2.8 fl oz/A	12	7	moderate	
	28	Belt 4SC	3-4 fl oz/A	12	7	high	
	3A	*Danitol 2.4EC	10.7-21.3 fl oz/A	24	3	moderate	
	5	Delegate 25WG	4.5-7 oz/A	4	7	high	
	11A	Deliver 18WG	0.5-2 lb/A	4	0	high	
	5	§Entrust 80WP	0.42-0.83 oz/100 gal or 1.25-2.5 oz/A	4	7	moderate	
	5	or §Entrust 2SC	1.3-2.7 fl oz/100 gal or 4-8 fl oz/A			moderate	
	11A	Javelin 7.5 WDG	0.25-4 lb/A	4	0	high	
	-	§Grandevo DF	3 lb/A	4	0		
	-	§Venerate XC	1-8 qt/A	4	0		
	28	Exirel	10-20.5 fl oz/A	12	3		
	21A	Apta	21-27 fl oz/A	12	14		
	28,16	Tourismo	10-14 fl oz/A	12	14		
-	§Deliver	0.5-2 lb/A	4	0			
1B	Lorsban 75WG	1.3-2 lb/A	96	14	moderate	[14.2]	
The following pre-mix products are also labeled for use against this pest; however, for best effectiveness and insecticide resistance management, their use should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.							
	3A/4A	*Endigo ZC	5-5.5 fl oz/A	24	14	moderate	[14.1]
	3A/6	*Gladiator EC	1.5-4.75 fl oz/100 gal or 6-19 fl oz/A	12	21	moderate	
	3A/4A	*Leverage 360	2.4-2.8 fl oz/A	12	7	moderate	
	3A/28	*Voliam Xpress	6-12 fl oz/A	24	14	high	
Spotted wing Drosophila	5	Delegate 25WG	4.5-7 oz/A	4	7	moderate	[17.2]
	5	§Entrust 80WP	0.42-0.83 oz/100 gal or 1.25-2.5 oz/A	4	7	high	[17.2]
	5	or §Entrust 2SC	1.3-2.7 fl oz/100 gal or 4-8 fl oz/A			high	
	1B	Imidan 70WS	0.75 lb/100 gal or 2.13 lb/A	72	7(C)	moderate	[17.2]
	3	Baythroid XL	2.4-2.8 oz/A	12	7	high	
	28	Exirel	13.5-20.5 fl oz/A	12	3	high	
	3	Mustang Max	4 oz/A	12	14	high	
	Stink bugs, including Brown marmorated stink bug	4A	Actara 25WDG	4.5-5.5 oz/A	12	14	moderate
3A		*Asana XL 0.66EC	2-5.8 fl oz/100 gal or 4.8-14.5 fl oz/A	12	14	moderate	
3A		*Baythroid XL 1EC	2-2.4 fl oz/A	12	7	moderate	
3A		*Danitol 2.4EC	10.7-21.3 fl oz/A	24	3	moderate	[18.2]
3A		*Warrior II 2.08CS	1.28-2.56 fl oz/A	24	14	moderate	

Table 13.1.1. Pesticide Spray Table – Cherries

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

Pest	IRAC/ FRAC Code	Product	Rate(s)	REI (hrs)	PHI (days)	Efficacy	Comments (see text)
Additional summer sprays (continued)							
Stink bugs, including Brown marmorated stink bug (continued)	The following pre-mix products are also labeled for use against this pest; however, for best effectiveness and insecticide resistance management, their use should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.						
	3A/4A	*Endigo ZC	5-5.5 fl oz/A	24	14	high	
	3A/4A	*Leverage 360	2.4-2.8 fl oz/A	12	7	moderate	
	4A/28	Voliam Flexi WDG	6-7 oz/A	12	14	moderate	
	3A/28	*Voliam Xpress	6-12 fl oz/A	24	14	moderate	
Postharvest							
Leaf spot	M5	Bravo Ultrex 82.5 WDG	0.9-1.25 lb/100 gal or 2.8-3.8 lb/A	12	–		
	M5	or Bravo Weather Stik 6F	0.75-1 lb/100 gal				
	4	Captan 50WP	1-2 lb/100 gal or 4 lb/A	24	–		
	4	or Captan 80 WDG	2.5 lb/A	24	–		
	4	or Captec 4L	0.75-1 qt/100 gal or 2 qt/A	24	–		
	M	C-O-C-S <i>plus:</i> hydrated lime formulations (see labels)	8-15.5 lbs/A 3 lb/100 gal	48	–		[4.4]
	M5	Echo 720 or Echo 90DF	1.0-1.4 pt/100 gal 2.25-3.5 lbs/A	12	–		
	3	Rally 40WSP	1.25-2 oz/100 gal or 2.5-6 oz/A	24	–		
	7	Fontelis SC	14-20 fl oz /A	12	0		[3.8]
	3	Indar 2F	6 fl oz/A	12	–		
	M7	Syllit FL	1.5-3 pint/A	48	–		
	7,11	Pristine 38WDG	10.5-14.5 oz/A	12	–		
	1	Topsin 4.5FL	7.5-10 fl oz/100 gal or 22.5-30 fl oz/A	48	–		
	1	Topsin M WSB	0.375-0.5 lb/100 gal or 1.125-1.5 lb/A	48	–		
	M2	Sulfur 92WP	5-10 lb/100 gallons	24	0		
	M2	§Microthiol Disperss	10-20 bl/100 gallons	24	0		
Powdery mildew	3	Rally 40WSP	1.25-2 oz/100 gal or 2.5-6 oz/A	24	–		[4.4]
	3	Procure 480SC	10-16 oz/A	12	–		
	11	Gem 500SC	1.9-3.8 oz/A	12	–		
	7	Fontelis SC	14-20 fl oz /A	12	0		[3.8]
	11	Cabrio EG	9.55 oz/A	12	0		
	7,11	Pristine 38WDG	10.5-14.5 oz/A	12	–		
	13	Quintec	7fl oz/A	12	7		
	U8	Vivando	15.4 fl oz/A	12	7		
	M2	Sulfur 92WP	5-10 lb/100 gallons	24	0		
	M2	§Microthiol Disperss	10-20 bl/100 gallons	24	0		

Table 13.1.1. Pesticide Spray Table – Cherries

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

Pest	IRAC/ FRAC Code	Product	Rate(s)	REI (hrs)	PHI (days)	Efficacy	Comments (see text)
Postharvest (continued)							
European red mite, Twospotted spider mite	21	Nexter 75WS	4.4-10.67 oz/A	12	300(PH)	high/mod	[11.3]
	3A	*Danitol 2.4EC	10.7-21.3 fl oz/A	24	3	moderate	
Control of Storage Disorders							
Storage rots	12	Scholar SC	16 fl oz/100 gal (see comments & label)				[19.1]
Autumn							
Bacterial canker (<i>Pseudomonas syringae</i>)	M	Kocide 3000	1.1-2.3 lb/100 gal (max 12 lb/A)	48	BL, PH (C)		[1.1]
	M	or Cuprofix Ultra 40 Disperss or other coppers	5-8 lb/A (see comments)	48	BL, PH (C)		[1.2]

13.2 Cherry Disease Notes

13.2.1 Bacterial Canker (*Pseudomonas syringae*)

• Biology & Cultural

[1.1] The pathogen causing bacterial canker is favored by cool, wet weather (spring and fall). It can invade leaf scars in fall and fresh pruning wounds in spring if pruning is done under cool, wet conditions. When pruning, make sure to leave a 6-inch stub, especially when removing scaffold branches as the bacteria appear to be arrested within the stub. Avoid flush cut pruning.

• Pesticide Application Notes

[1.2] We recommend copper applications at 20% and 80% leaf drop in the fall, and one application in the spring late dormant. Position the two applications around any fall pruning. If you are treating sweet cherries, just make one application at 50% leaf drop. Try to time these applications to a warm, dry period. An additional application is also labeled for use after harvest in orchards where disease is severe, although this application should be avoided on sweet cherries in New England due to the potential for leaf injury. Several other commercial copper formulations in addition to those listed may be labeled for this use on cherries. Although they have not been tested, research on other crops suggests that most copper formulations should give comparable rates of control at comparable rates of metallic copper.

13.2.2 Black Knot

• Biology & Cultural

[2.1] Black knot has become an increasingly important problem on sour cherries in recent years. It is a difficult disease to control completely, but good sanitation – removing and destroying infected (knotted) limbs as they appear (make pruning cuts at least 6-8 in below visible

swellings), destroying infected fence row trees and adjacent abandoned orchards (when possible) – is critical. Fungicide sprays are unlikely to provide satisfactory control without good sanitation practices. The most critical time for protecting against infection with fungicides is between white bud and shuck split. Black knot infection periods require rain and temperatures above 55°F; thus, fungicide sprays are most likely to be beneficial under these conditions.

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 disease.

• Pesticide Application Notes

[2.2] Bravo is the most effective fungicide for black knot control. Note that a minimum 10-day re-treatment interval is specified on the label.

13.2.3 Brown Rot (Blossom & Shoot Blight)

• Biology & Cultural

[3.1] Blossom blight is most likely to occur when the weather is warm (above 60°F) and wet during bloom or when large numbers of fruit were not harvested the previous year. Blossom blight may also be serious at lower temperatures if prolonged wetting periods occur. Blossom sprays on tart cherries may often be reduced or eliminated if none of these conditions occur. Blossom blight is much more serious on sweet cherry than on sour cherry.

[3.2] Sweet (but not sour) cherry fruit are very susceptible to brown rot for the first few weeks after they set. Protection is therefore important at this time, particularly in wet weather.

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 disease.

[3.3] *Monlinia laxa* commonly referred to as European brown rot is present in the region and can cause extensive blossom and shoot blight in cool wet weather at

bloom. *M. laxa* may affect both sweet and tart cherries, but is primarily a problem on European or dark-fleshed tart cherry varieties.

• **Pesticide Application Notes**

[3.3] When used at a rate of 10 oz/100 gal, Rovral provides 24-48 hr kickback activity against blossom blight infections. Only 2 sprays of Rovral are allowed per season. Indar, and Tilt also have significant kickback activity. For resistance management purposes, it is recommended that the SI fungicides (Indar, Tilt, Rally, Quash) should not be used routinely throughout the season for BOTH blossom blight AND fruit rot control.

[3.4] More than one blossom blight spray is rarely needed unless disease pressure is extreme.

[3.5] Young sweet cherry fruit are very susceptible to brown rot. Thus, a petal fall spray is recommended on sweet cherries if weather is wet; much less necessary on sour cherries.

[3.6] Do not use chlorothalonil (Bravo, Echo, Equus) after shuck split; may resume use after harvest. Chlorothalonil has much longer residual activity than other fungicides labeled at shuck split, and is recommended if prolonged protection is needed. Indar is the most effective fungicide against brown rot on cherries. Also, chlorothalonil has a limited effect on *Monlinia laxa*, and should be used in combination with a material from 3.7 in orchards where both *M. laxa* and *M. fructicola* are present.

[3.7] Fruit becomes increasingly susceptible to brown rot during the last 3 wks before harvest. It is therefore recommended that spray intervals be tightened during this period and that superior brown rot fungicides be used if disease pressure is high (warm and wet), especially on sweet cherries.

Indar is the most effective fungicide for control of brown rot under high disease pressure, and provides excellent residual activity. It may be applied at 7-10-day intervals as needed. Tilt, Quash, Gem, Cabrio, and Pristine are also excellent brown rot fungicides with no preharvest interval restrictions. Sulfur, captan plus sulfur, and ferbam plus sulfur do not provide adequate control on sweet cherries. The maximum allowable rate of 4 lb/A for captan is inadequate on trees greater than 10 ft tall, particularly on sweet cherries.

[3.8] Fontelis has excellent protectant activity against stone fruit diseases. Fontelis is most effective against stone fruit diseases when applied at 7-14-day intervals to control primary and secondary scab. Reports out of Michigan suggest that Fontelis is not as strong against cherry leaf spot as other fungicides, but it is effective. There have been reports of phytotoxicity with tank mixes of Fontelis in apple. However, university trials throughout the region and extensive grower reports suggest that Fontelis is safe for stone fruit even under slow drying conditions.

13.2.4 Leaf Spot

• **Pesticide Application Notes**

[4.1] Primary leaf spot infections can occur from petal fall until after harvest; it is, therefore, important to maintain adequate spray deposits prior to infection periods (see Table 6.2.5) throughout this time. Chlorothalonil fungicides (Bravo, Echo, Equus) have the longest residual activity. They also provide some control of black knot.

Indar, and Tilt have approximately 3 days of post-infection activity, and can be used in this manner when necessary. However, leaf spot has shown resistance to SI fungicides in some orchards in Michigan, and regular use of post-infection timing will spread selection for resistance. Thiophanate-methyl (Topsin M) is no longer recommended for use on cherries because of widespread brown rot resistance and suspected leaf spot resistance. Captan may cause leaf injury on Schmidt, Emperor Francis, and Giant sweet cherries if used between petal fall and harvest. Sulfur has short residual activity and must be reapplied frequently in wet seasons. Syllit has little effect against brown rot.

[4.2] Do not use chlorothalonil (Bravo, Echo, Equus) after shuck split; may resume use after harvest. Chlorothalonil has much longer residual activity than other fungicides labeled at shuck split, and is recommended if prolonged protection is needed.

[4.3] Do not use captan on sensitive sweet cherry varieties in the preharvest sprays. Do not use chlorothalonil between shuck split and harvest.

[4.4] Do not use copper on sweet cherries.

13.2.5 Phytophthora Root, Crown, and Collar Rots

• **Biology & Cultural**

[5.1] Cherry rootstocks are significantly more susceptible to Phytophthora root, crown, and collar rots than are apples. Mahaleb is more susceptible than Mazzard or Colt. The main defenses against these diseases should be providing good soil drainage through proper site selection and physical manipulations such as tiling or planting on berms; in marginal sites or very wet years, berms are much more effective than tiling. Highly susceptible rootstocks (e.g., Mahaleb) also should be avoided on marginal sites. However, Ridomil will provide additional protection in wet years, on marginal sites, or in wetter sections of the orchard. See comment 5.2 about applications.

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 disease.

• **Pesticide Application Notes**

[5.2] Ridomil applications should be made just before growth starts in the spring and at 2-3-month intervals thereafter if soil conditions are very wet. Apply to the soil beneath the tree canopy in sufficient water to ensure good coverage (material is moved into the soil by subsequent rain or irrigation). Do not apply Ridomil to newly planted trees. See label for further details.

13.2.6 Powdery Mildew

- **Pesticide Notes**

[6.1] To control mildew, include an appropriate fungicide in each spray from 2nd fruit fly spray through the postharvest application. Rally is most effective.

[6.2] Do not use copper on sweet cherries.

13.2.7 X-Disease

- **Pesticide Application Notes**

[7.1] Refer to “Early Spring” section in the Pesticide Spray Table for Peaches and Nectarines.

13.3 Cherry Insect and Mite Notes

13.3.1 American Plum Borer

- **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**

[8.1] Application recommended against newly emerging adults, shortly after petal fall. If fresh borer activity is noted in early July, follow up with an additional application by mid-July. For *Lorsban Advanced and *Asana, apply as a coarse, low-pressure spray to give uniform coverage of tree trunks and lower limbs. *Ambush and *Pounce not labeled for American plum borer. Avoid Lorsban contact with foliage in sweet cherries; 50WS and 75WG formulations not labeled in sweet cherries. Rate of *Baythroid for lesser peachtree borer: 1.4-2.0 fl oz/A; for American plum borer: 2.4-2.8 fl oz/A. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Endigo, *Leverage and *Voliam Xpress should be reserved for those situations when the pest complex to be treated is appropriately matched to the combination of active ingredients and modes of action contained in the product.

[8.2] The July and August lesser peachtree borer sprays will additionally provide control of 2nd brood American plum borer. Refer to comment [13.2].

13.3.2 Black Cherry Aphid

- **Pesticide Application Notes**

[9.1] Prebloom spray recommended, just before blossoms open, and during summer if needed. Because of toxicity to bees, Sevin is not recommended for prebloom aphid treatments. Movento must be used with a spray adjuvant having spreading and penetrating properties. Do not exceed 0.172 lb a.i./A of thiamethoxam-containing products per acre per growing season. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Endigo, *Leverage, Voliam Flexi and *Voliam Xpress should be reserved for those situations when the pest complex to be treated is appropriately matched to the combination of active ingredients and modes

of action contained in the product. Suggested action threshold: 4 infested terminals/tree.

[9.2] No separate spray recommended at petal fall. Sevin and Imidan applied for plum curculio will also control black cherry aphid.

[9.3] Lorsban not labeled for foliar use on sweet cherries.

13.3.3 Black Cherry Fruit Fly, Cherry Fruit Fly

- **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 these pests.

- **Pesticide Application Notes**

[10.1] Make 1st spray 7 days after flies emerge (when Early Richmond starts to color); 2nd and 3rd sprays at 7- to 10-day intervals. Sevin is recommended as an emergency treatment near harvest. Imidan is for use on tart cherries only; not registered for black cherry fruit fly. Do not exceed 0.172 lb a.i./A of thiamethoxam-containing products per acre per growing season. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Endigo, *Leverage, Voliam Flexi and *Voliam Xpress should be reserved for those situations when the pest complex to be treated is appropriately matched to the combination of active ingredients and modes of action contained in the product.

[10.2] Frequent applications (7-10-day intervals) of Surround and maximal coverage (minimum of 100 gal/A) are advised in New England while there is active foliar growth.

[10.3] Use Imidan and Lorsban on tart cherries only.

13.3.4 Brown Marmorated Stink Bug – refer to section 13.3.12 Stink Bugs

13.3.5 European Red Mite

- **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**

[11.1] Apply oil against overwintering eggs.

[11.2] Do not apply *Vendex more than 2 times per season.

[11.3] Use lower rate of Nexter for European red mite, higher rate for twospotted spider mite; postharvest use only.

[11.4] Apollo, Savey and Zeal limited to 1 application per season.

13.3.6 Japanese Beetle

• Biology & Cultural

[12.1] Adults emerge from the soil between early July and mid-August to feed on numerous trees and shrubs. In cherry trees, beetles devour the tissue between the veins, leaving a lace-like skeleton. Severely injured leaves turn brown and often drop. Adults are most active during the warmest parts of the day and prefer to feed on plants that are fully exposed to the sun.

• Pesticide Application Notes

[12.2] Although pheromone traps are available and can be hung in the orchard in early July to detect the beetles' presence, they are generally NOT effective at trapping out the beetles. Fruit and foliage may be protected from damage by applying Sevin, Assail, *Leverage, Admire Pro or *Provado; repeated applications may be required. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Endigo, *Leverage and *Voliam Xpress should be reserved for those situations when the pest complex to be treated is appropriately matched to the combination of active ingredients and modes of action contained in the product.

13.3.7 Lesser Peachtree Borer

• 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.

• Biological & Non-chemical Control

[13.1] In orchards where lesser peachtree borer is the primary borer pest, hang pheromone ties in late May before flight begins. Use 250/A rate in high-pressure (e.g., border) areas.

• Pesticide Application Notes

[13.2] For Lorsban and pyrethroids, apply as a coarse spray to trunk and lower limbs in up to 3 sprays; June 1-10, July 7-15, and August 1-10. Do not spray fruit; 21-day PHI for *Lorsban 4EC and Lorsban 75WG, 14 days for Lorsban 50WS, *Asana and *Warrior, 3 days for *Ambush and *Pounce. The July and August sprays will additionally provide control of 2nd brood American plum borer. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Endigo and *Voliam Xpress should be reserved for those situations when the pest complex to be treated is appropriately matched to the combination of active ingredients and modes of action contained in the product.

13.3.8 Obliquebanded Leafroller

• 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.

• Monitoring & Forecasting

Refer to the NEWA Apple Insect Models website (newa.cornell.edu/index.php?page=apple-insects) for current information on the occurrence, development and management of this pest in your specific location.

• Pesticide Application Notes

[14.1] Apply in early July when larvae are small (approximately 360-450 DD [base 43°F] after 1st trap catch. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Endigo, *Leverage and *Voliam Xpress should be reserved for those situations when the pest complex to be treated is appropriately matched to the combination of active ingredients and modes of action contained in the product.

[14.2] Lorsban not labeled in sweet cherries.

13.3.9 Plum Curculio

• 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.

• Monitoring & Forecasting

Refer to the NEWA Apple Insect Models website (newa.cornell.edu/index.php?page=apple-insects) for current information on the occurrence, development and management of this pest in your specific location.

• Pesticide Application Notes

[15.1] Apply sprays when last petals are falling (early fruit set) and at 8- to 10-day intervals. Use 3-4 sprays. Do not exceed 0.172 lb a.i./A of thiamethoxam-containing products per acre per growing season. Imidan is for use on tart cherries only; causes severe foliage injury to sweet cherries. Sevin and Imidan will also control black cherry aphid. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Leverage, Voliam Flexi and *Voliam Xpress should be reserved for those situations when the pest complex to be treated is appropriately matched to the combination of active ingredients and modes of action contained in the product.

[15.2] Frequent applications (7-10 day intervals) of Surround and maximal coverage (minimum of 100 gal/A) are advised in New England while there is active foliar growth.

[15.3] Not labeled for use on sweet cherries.

13.3.10 Scales, including European Lecanium and San Jose Scale

• Pesticide Application Notes

[16.1] Apply oil at budburst against overwintering immatures; thorough coverage improves efficacy. Addition of oil improves performance of Assail, Esteem, and Lorsban.

[16.2] Apply 4-6 weeks after shuck split against crawler stages. Movento must be used with a spray adjuvant that has spreading and penetrating properties.

13.3.11 Spotted Wing Drosophila

•Biology & Cultural

[17.1] This is an exotic species of vinegar fruit fly, a group normally attracted to damaged and rotting fruit. But in contrast to endemic Drosophila fruit flies, it has a serrated ovipositor and will lay eggs in intact ripening fruit on the tree; it is also a pest of berry fruit crops. Originally known from Japan, it has now found in New England, and much of the U.S. Refer to the reference materials list (17.4.2, Other References) at the end of this publication for fact sheets containing details on the biology and management of this species.

• Pesticide Application Notes

[17.2] Contact your local Cooperative Extension for information on the latest trapping techniques. Once adult SWD are trapped or observed, and fruit begin to ripen, apply insecticides weekly through harvest, rotating between insecticide classes. Choose insecticides based on efficacy and pre-harvest interval. Most insecticides will be made more effective by adding sugar to stimulate SWD feeding. Add 1-2 pounds of white sugar per 100 gallons of spray mixture. Imidan is for use on tart cherries only.

13.3.12 Stink Bugs (including Brown Marmorated Stink Bug)

• Biology & Cultural

[18.1] A number of native stink bug species can sometimes cause fruit damage in all tree fruits under conditions that are not fully understood. Adult feeding during bloom and shuck split can cause the fruit to abort, and feeding later in the summer can cause a deep catfacing injury such as that caused by tarnished plant bug, or depressed, dimpled, corky or water-soaked areas on the skin. All tree fruits are attacked, especially peaches and apples. Other species of stink bugs are predators. Elimination of alternate host broadleaf weeds, especially legumes, in the orchard will contribute to management

efforts. If control is needed, insecticides should be timed to kill immigrating adults as they appear in the orchards to prevent feeding damage and subsequent mating and egg laying.

The brown marmorated stink bug is an invasive species from Asia that was first documented in Allentown, PA in 2001. BMSB has become a serious insect pest throughout much of the mid-Atlantic states and southern New York. In 2014, BMSB was known to be in all New England states and became an agricultural pest in Connecticut. Refer to the reference materials list (17.4.2, Other References) at the end of this publication for fact sheets containing details on the biology and management of brown marmorated stink bug.

• Pesticide Application Notes

[18.2] A provisional threshold has been established. Apply pesticides when trap captures are 10 BMSB adults/trap or 1 BMSB per 100 ft of orchard perimeter border. BMSB are very mobile pests, and may re-infest the treated area quickly. If repeated applications are necessary, rotate active ingredients to avoid promoting resistance in local populations. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Endigo, *Leverage, Voliam Flexi and *Voliam Xpress should be reserved for those situations when the pest complex to be treated is appropriately matched to the combination of active ingredients and modes of action contained in the product.

13.4 Storage Rot Notes

• Pesticide Application Notes

[19.1] A postharvest treatment with Scholar SC via flooders, T-jet, or similar system for control of storage rots is recommended for fruit coming from orchards where sporulating brown rot was observed, or when one hopes keep fruit in cold storage for a few days prior to sale. Holding tanks in postharvest treatment equipment must have excellent agitation to keep fungicides in suspension. Solutions must be replenished regularly as directed on the product label. Never expose treated fruit to direct sunlight. This will cause the fungicide to break down.

13.5 Growth Regulation of Cherries

Table 13.5.1. Growth Regulator Uses in Cherries

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

Timing	Product	Concentration	Product	Rate of Formulated Product
PROMOTE LATERAL BRANCHING IN TART CHERRY: (to counteract the adverse effects of tart cherry yellows virus on formation of vegetative buds)				
14-21 days after petal fall	Pro-Gibb 4%, Falgro 4L	10-15 ppm		4-6 fl oz/100 gal
Apply at the 3-5 leaf stage or 1-3 inches of terminal extension on bearing trees. Apply with a nonionic surfactant as a dilute spray using 200-300 gal/acre. Use low rate on vigorous trees and high rate on low vigor trees.				

Table 13.5.1. Growth Regulator Uses in Cherries

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Timing	Product	Concentration	Product	Rate of Formulated Product
Promote vegetative growth of young non-bearing trees				
2-4 weeks after bloom	Pro-Gibb 4%, Fargo 4L	50-100 ppm		20-40 fl oz/100 gal
Apply at the 5-7 leaf stage. Reduces crop in year after treatment. Do not spray first year trees. For low vigor trees make two applications no closer than 7 days apart.				
Induction of lateral branching in nursery trees				
SWEET CHERRIES				
When terminal shoot is 26-32" long	Promalin, Perlan, Typy, Maxcel	250-1,000 ppm (Maxcel 500 ppm)		0.5-2 qt/5 gal
Include a non-ionic surfactant and apply as a directed spray to top part of tree after trees have reached a terminal height at which lateral branching is desired.				
Induction of lateral branching in young non-bearing trees				
SWEET CHERRIES				
Bud Swell	Promalin, Perlan, Typy, Maxcel	5,000-7,500 ppm		3.2-5.3 fl oz/1pt latex paint
Mix with latex paint and paint on buds. Do not apply the Promalin-latex paint mixture after bud break which may cause some injury to tender shoot tips. The best results in New York are obtained by scoring above the bud and then painting the cut and the bud with the Promalin-latex paint mixture.				
Delay harvest and increase firmness and size of sweet cherries				
Fruit is light green to straw color (about 3-4 weeks before harvest)	Pro-Gibb 4%, Falgro 4L	10-30 ppm		16-48 fl oz/acre
	Pro-Gibb 4%	10-15ppm		16-48g/acre
High rates may delay fruit color development but give the maximum delay in harvest. Apply lower rates for less delay in ripening and less inhibition of color. Do not apply within 1 week of harvest				
Promote fruit loosening for mechanical harvesting				
TART CHERRIES				
7-14 days before anticipated harvest	Ethrel	150 ppm		0.5 pt/100 gal
Apply with a nonionic surfactant. Do not apply to weak trees or trees under heat or moisture stress.				
SWEET CHERRIES				
7-14 days before anticipated harvest	Ethrel	300-450 ppm		1-1.5 pt/100 gal
Apply with a nonionic surfactant. Do not apply to weak trees or trees under heat or moisture stress.				

To convert ounces (lb) to grams multiply ounces by 28.3. To convert fluid ounces to milliliters multiply fluid ounces by 29.57.