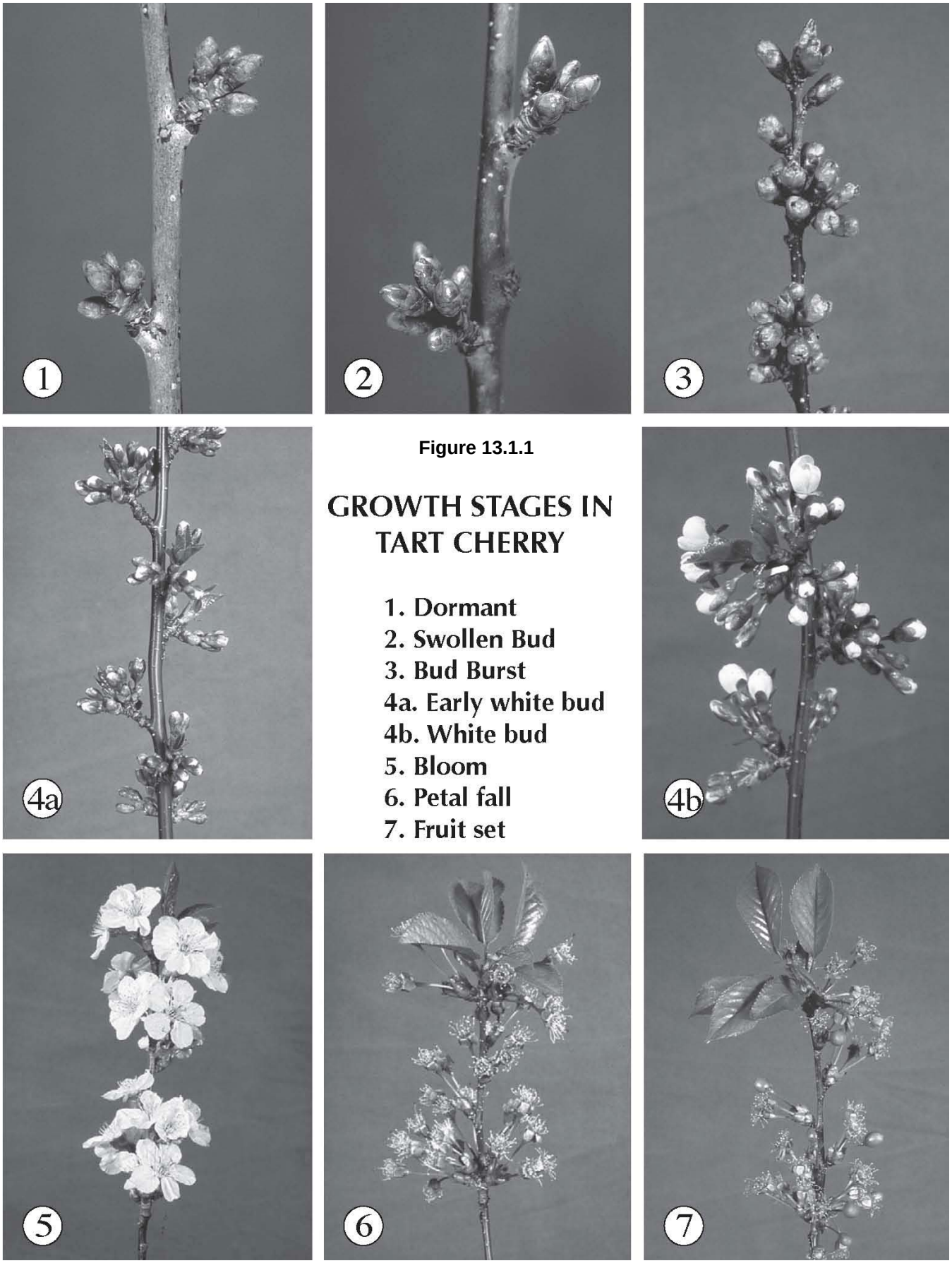

Figure 13.1.1

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

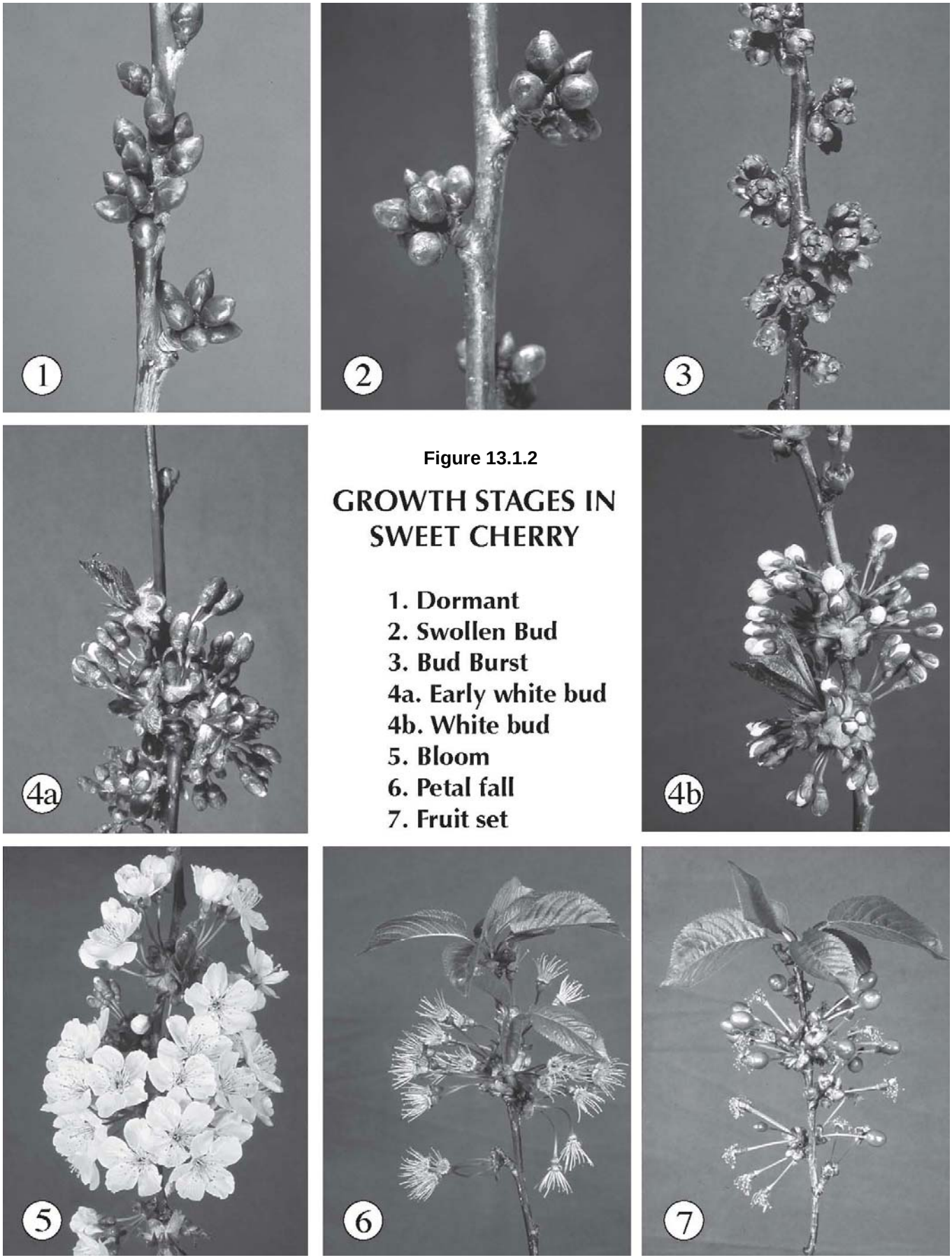
1
2
3
4a
GROWTH STAGES IN SWEET CHERRY
1. Dormant
2. Swollen Bud
3. Bud Burst
4a. Early white bud
4b. White bud
5. Bloom
6. Petal fall
7. Fruit set
4b
5
6
7

Figure 13.1.2

13 General Pest Management Considerations – Cherries

13.1 Diseases

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.

The optimum timing and effectiveness of copper applications for control of bacterial canker is during the fall (after leaf fall) and spring (before bud burst). Label directions specify one application in the fall "before heavy rains begin" and another at late dormant. A third application before bud burst in the spring is also recommended. (For more information on bacterial canker and control, see the fact sheet at: http://www.fruitadvisor.info/pubs/bacterialcanker.pdf) 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.

• 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 York 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.

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.

Brown Rot (Blossom 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.

• 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, Orbit, and Elite also have significant kickback activity. For resistance management purposes, it is recommended that the SI fungicides (Elite, Indar, Orbit, Rally) 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, Applause, Concorde, 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.

[3.7] Fruit becomes increasingly susceptible to brown rot during the last 3 wk 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. Orbit, Elite, 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.

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 11) throughout this time. Chlorothalonil fungicides (Bravo, Applause, Concorde, Echo, Equus) have the longest residual activity. They also provide some control of black knot.

Rubigan, Indar, and Elite have approximately 3 days of after-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, Applause, Concorde, 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.

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 Gisela rootstocks (G.5, G.6) are not particularly susceptible. 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.

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. Nova is most effective.

[6.2] Do not use copper on sweet cherries.

X-Disease

• Pesticide Application Notes

[6.1] Refer to "Early Spring" section in Pesticide Spray Table for Peaches and Nectarines.

13.2 Insects and Mites

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. Apply as a coarse, low-pressure spray to give uniform coverage of tree trunks and lower limbs. *Ambush 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 products for lesser peachtree borer: 1.4-2.0 fl oz/A; for American plum borer: 2.4-2.8 fl oz/A.

[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].

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. Suggested action threshold: 4 infested terminals/tree.

[9.2] No separate spray recommended at petal fall. See comment [15].

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

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.

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

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

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 and Savey limited to 1 application per season.

[11.5] Supplemental label must be in possession.

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 or *Provado; repeated applications may be required.

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 at 100/acre in late May before flight begins.

• 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; 6-day PHI for *Lorsban 4EC, 21 days for Lorsban 75WG, 14 days for *Asana and *Warrior, 3 days for *Ambush and *Pounce. For *Thionex, a single spray post-harvest. The July and August sprays will additionally provide control of 2nd brood American plum borer.

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.

• Pesticide Application Notes

[14.1] Apply in early July when larvae are small (approximately 360-450 DD [base 43° F] after 1st trap catch.

[14.2] Lorsban not labeled in sweet cherries.

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.

• Pesticide Application Notes

[15.1] Apply sprays when last petals are falling (early fruit set) and at 8- to 10-day intervals. Use 2-4 sprays. Sweet cherrry fruit will incur considerable damage from the early migration of plum curculio if not protected with a recommended insecticide. Imidan is for use on tart cherries only; causes severe foliage injury to sweet cherries. Sevin and Imidan will also control black cherry aphid.

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

[15.3] Not labeled for use on sweet cherries.

Storage Rots

• Pesticide Application Notes

[16.1] 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 exposed treated fruit to direct sunlight. This will cause the fungicide to break down.

13.3. Cherry Spray Table

Table 13.3.1. Pesticide Spray Table – Cherries

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

Pest		Product	Rate	REI (hrs)	PHI (days)	Comments (see text)
Late Dormant						
Bacterial canker (Pseudomonas syringae)		Kocide 40DF or Kocide 50WP	2-4 lb/100 gal (max 12 lb/A)	24	BL, PH (C)	[1.1]
		or §Cuprofix Disperss 40DF	10-16 lb/A	24	BL, PH (C)	24
		or other coppers	see comments			
Phytophthora root, crown and collar rots		Ridomil Gold 4EC	1.5 fl oz/1,000 sq ft treated	12	0	[5.2]
Bud Burst						
European red mite		§oil	2 gal/100 gal	12	0	[11.1]
White Bud						
Brown rot (blossom blight)		Bravo Ultrex 82.5WDG	0.9-1.25 lb/100 gal	12 hr/ 7 days(E)	SS	
		or Bravo Weather Stik 6F	1.0-1.4 pt/100 gal			
		or other chlorothalonil formulations (see labels)				
	OR	Captan 50WP	2 lb/100 gal (max 4 lb/A)	96(E)	0	[3.1, 3.2]
	OR	Echo 6F	1.09-1.4 pt/100 gal	12 hr/ 7 days(E)	SS	
		or Echo 90DF	0.75-1.2 lb/100 gal			
	OR	Elevate 50WDG	0.33-0.5 lb/100 gal (max 6 lb/A)	12	0	
	OR	Elite 45DF	2 oz/100 gal	12	0	[3.3]
	OR	Indar 75WS	0.5-0.8 oz/100 gal (max 2 oz/A)	12	0	
	OR	Orbit 3.6EC	1.0-1.6 fl oz/100 gal (max 4 fl oz/A)	24	0	
	OR	Pristine 38WDG	10.5-14.5 oz/A	12	0	
	OR	Quash	2.5 to 4 oz/A	12	14	
	OR	Rally 40 W/WSP	2.5-6 oz/acre	12	0	
	OR	Rovral 50WP	8-10 oz/100 gal (max 2 lb/A)	24	PF	
		or Rovral 4F	8-10 fl oz/100 gal (max 2 pt/A)			
	OR	§Sulfur 95WP	5 lb/100 gal	24	0	

Table 13.3.1. Pesticide Spray Table – Cherries

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

Pest		Product	Rate	REI (hrs)	PHI (days)	Comments (see text)
Late Dormant						
Black cherry aphid		Asana XL 0.66 EC	4.8-14.5 fl oz/acre	12	14	
	OR	Assail 30 SG	2.5-5.3 oz/Acre	12	7	
	OR	§Aza-Direct 1.2L	12.5-42 fl oz/A	4	0	[9.1]
		§Azatin XL Plus 3L	10-21 fl oz/A	4	0	
	OR	or *Baythroid XL 1EC	2.4-2.8 fl oz/A	12	7	
	OR	Beleaf 50 SG	2.0-2.8 oz/acre			
	OR	Leverage 2.7 SE	4.4-5.1 fl oz/acre	12	7	
	OR	or Malathion 57EC	1.5 pt/100 gal	12	3	
	OR	§M-Pede 49L	2 gal/100 gal	12	0	
	OR	§Neemix 4.5L	7-16 fl oz/A	12	0	
	OR	Proaxis 0.5 CS	2.56-5.12 fl oz/acre	24	14	
	OR	*Thionex 3EC	0.67 qt/100 gal	48	21	
		or *Thionex 50WP	1 lb/100 gal	96		
	OR	Movento	6 to 9 oz per Acre	24	7	
	OR	Warrior II	1.28 to 2.56 fl oz/Acre	24	14	
Bloom						
Black knot		Bravo Ultrex 82.5WDG	0.9-1.25 lb/100 gal	12 hr/7 days(E)	SS	[2.1, 2.2]
		or Bravo Weather Stik 6F	1.0-1.4 pr/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 White Bud				[2.1], [2.2]
Brown rot		See recommendations under White Bud				[3.3], [3.5]
Leaf spot		Bravo Ultrex 82.5WDG	0.9-1.25 lb/100 gal	12 hr/7 days(E)	SS, PH	[4.1]
		or Bravo Weather Stik 6F	1.0-1.4 pt/100 gal			
		or other chlorothalonil formulations (see labels)				
	OR	Captan 50WP	1-2 lb/100 gal (max 4 lb/A)	96 (E)	0	
	OR	Captan 50WP *plus* Sulfur 95WP	1-1.5 lb/100 gal 3 lb/100 gal	96 (E)	0	
	OR	Echo 6F	1.0-1.4 pt/100 gal	12 hr/7 days(E)	SS	
		or Echo 90DF	0.75-1.2 lb/100 gal			
	OR	Elite 45DF	2 oz/100 gal	12	0	
	OR	Indar 75WS	0.5-0.8 oz/100 gal (max 2 oz/A)	12	0	
	OR	Orbit 3.6EC	1.0-1.6 fl oz/100 gal (max 4 fl oz/A)	24	0	

Table 13.3.1. Pesticide Spray Table – Cherries

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

Pest		Product	Rate	REI (hrs)	PHI (days)	Comments (see text)
Leaf spot	*OR*	Rally 40 W/WSP	2.5-6 oz/acre	12	0	
(continued)	*OR*	Rovral 50WP	8-10 oz/100 gal (max 2 lb/A)	24	PF	
		or Rovral 4F	8-10 fl oz/100 gal (max 2 pt/A)			
	OR	Rubigan 1EC	3 fl oz/110 gal	12	0	
	OR	§Sulfur 95WP	6 lb/100 gal	24	0	
	OR	Syllit 65WP	4 oz/100 gal	48	0	
	OR	Flint 50WDG	2-4 oz/A	12	1	
	OR	Gem 500SC	1.9-3.8 oz/A	12	1	
	OR	Pristine 38WDG	10.5-14.5 oz/A	12	0	
American plum		Ambush 25 WP	6.4-12.8 oz/acre	12	3	[8.1]
borer, Lesser	*OR*	Asana XL 0.66 EC	4.8-15.4 fl oz/acre	12	14	
Peachtree borer		or *Baythroid XL 1EC	[see Comment 8.1]	12	7	
		or Baythroid 2 EC				
	OR	*Lorsban 4EC	1.5-3 qt/100 gal	96	6	
		or Lorsban 50WS	2-3 lb/A	96	14	
		or Lorsban 75WG	1.3-2.0 lb/A	96	21	
	OR	Warrior II	1.28 to 2.56 fl oz/Acre	24	14	
	OR	Pheromone disruption ties:				
		§Isomate-LPTB	100/A			[12.1]
Black cherry aphid		(See comment 9.2)				[9.2]
Plum curculio		*Ambush 25WP	6.4-12.8 oz/100 gal	12	3	[14.1]
	OR	*Asana XL 0.66EC	2-5.8 oz/100 gal	12	14	
	OR	Assail 30SG	5.3-8 oz/Acre	12	7	
	OR	Avaunt 30 WDG	5-6 oz/acre	12	14	
	OR	*Baythroid XL 1EC	2.4-2.8 fl oz/A	12	7	
		or Baythroid 2 EC				
	OR	*Guthion 50WS	0.5 lb/100 gal	15 days(E)		
	OR	*Imidan 70WP	0.75 lb/100 gal	72	7(C)	[14.3]
	OR	Leverage 2.7 SE	4.4-5.1 fl oz/acre	12	7	
	OR	Lorsban 75WG	2 lb/A	96	28	[14.3]
	OR	or *Pounce 25WP	6.4-12.8 oz/100 gal	12	3	
	OR	*Proaxis 0.5CS	2.6-5.1 fl oz/A	24	14	
	OR	Sevin XLR Plus, 4F	2-3 qt/A	12	3	
		or Sevin 80S, *80WS	2.5-3.75 lb/A			
	OR	§Surround 95WP	50 lb/100 gal	4	0	[14.2]
	OR	*Warrior II	1.28 to 2.56 fl oz/Acre	24	14	

Table 13.3.1. Pesticide Spray Table – Cherries

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

Pest		Product	Rate	REI (hrs)	PHI (days)	Comments (see text)
Shuck Split						
Brown rot, Leaf spot		Bravo Ultrex 82.5WDG or Bravo Weather Stik 6F or other chlorothalonil formulations (see labels)	0.9-1.25 lb/100 gal 1.0-1.4 pt/100 gal	12 hr/ 7days (E)	SS	[3.1, 3.2]
	OR	Captan 50WP	1-2 lb/100 gal (max 4 lb/A)	96 (E)	0	
	OR	Captan 50WP *plus* Sulfur 95WP	1 lb/100 gal 3 lb/100 gal	96 (E)	0	
	OR	Echo 6F or Echo 90DF	1.0-1.4 pt/100 gal 0.75-1.2 lb/100 gal	12 hr/ 7 days(E)	SS	
	OR	Ferbam 76WDG	1.5 lb/100 gal	24	0	
	OR	Ferbam 76WDG *plus* Sulfur 95WP	1 lb/100 gal 3 lb/100 gal	24	0	
	OR	Gem 500SC	1.9-3.8 oz/A	12	1	
	OR	Indar 75WS	2 oz/A	12	0	
	OR	Quash	2.5 to 4 oz/A	12	14	
	OR	Rally 40 W/WSP	2.5-6 oz/acre	12	0	
Black knot		Bravo Ultrex 82.5WDG or Bravo Weather Stik 6F or other chlorothalonil formulations (see labels)	0.9-1.25 lb/100 gal 1.0-1.4 pt/100 gal	12 hr/7 days(E)	SS	[2.1, 2.2]
Black cherry aphid		Asana XL 0.66 EC	4.8-14.5 fl oz/acre	12	14	
	OR	Assail 30 SG	2.5-5.3 oz/acre	12	7	
	OR	§Aza-Direct 1.2L	12.5-42 fl oz/A	4	0	[9.1]
	OR	§Azatin XL Plus 3L	10-21 fl oz/A	4	0	
	OR	Assail 30 SG	2.5-5.3 oz/Acre	12	7	
	OR	or *Baythroid XL 1EC or Baythroid 2 EC	2.4-2.8 fl oz/A	12	7	
	OR	Beleaf 50 SG	2.0-2.8 oz/acre	12	14	
	OR	Leverage 2.7 SE	4.4-5.1 fl oz/acre			
	OR	Lorsban 75WG	2 lb/A	96	28	[9.3]
	OR	or Malathion 57EC	1.5 pt/100 gal			
	OR	§M-Pede 49L	2 gal/100 gal	12	0	
	OR	Movento	6 to 9 oz per Acre	24	7	
	OR	§Neemix 4.5L	7-16 fl oz/A	12	0	
	OR	Provado 1.6F	2 oz/100 gal	12	0	
	OR	Sevin XLR Plus, 4F or Sevin 80S, *80WS	2-3 qt/A 2.5-3.75 lb/A	12	3	
	OR	*Thionex 3EC or *Thionex 50WP	0.67 qt/100 gal 1 lb/100 gal	48 96	21	
	OR	Warrior II	1.28 to 2.56 fl oz/Acre	24	14	
Plum curculio		See materials under Petal Fall				[14.1]

Table 13.3.1. Pesticide Spray Table – Cherries

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

Pest		Product	Rate	REI (hrs)	PHI (days)	Comments (see text)
Additional Summer Sprays						
Brown rot		Captan 50WP	1-2 lb/100 gal (max 4 lb/A)	96 (E)	0	[3.7]
	OR	Captan 50WP *plus* Sulfur 95WP	1 lb/100 gal 3 lb/100 gal	96 (E)	0	
	OR	Carbamate 76WDG	1.5 lb/100 gal	24	0	
	OR	Carbamate 76WDG *plus* Sulfur 95WP	1.5 lb/100 gal 3 lb/100 gal	24	0	
	OR	Elevate 50WDG	1.0-1.5 lb/A	12	0	
	OR	Elite 45DF	2 oz/100 gal	12	0	
	OR	Indar 75WSP	0.5-0.8 oz/100 gal (max 2 oz/acre)	12	0	
	OR	Orbit 3.6EC	1.0-1.6 fl oz/100 gal (max 4 fl oz/A)	24	0	
	OR	Pristine 38WDG	10.5-14.5 oz/A	12	0	
	OR	Quash	2.5 to 4 oz/Acre	12	14	
	OR	Rally 40 W/WSP	2.5-6 oz/acre	12	0	
Leaf spot		Choose from materials listed at Petal Fall.				[4.3]
Powdery mildew		Elite 45DF	2 oz/100 gal	12	0	[6.1]
	OR	Rally 40 W/WSP	1.25-2 oz/100 gal (max 6 oz/A)	24	0	
	OR	Orbit 3.6EC	1.0-1.6 fl oz/100 gal (max 4 fl oz/A)	24	0	
	OR	Rubigan 1EC	3 fl oz/100 gal	12	0	
	OR	§Sulfur 95WP	3 lb/100 gal	12	0	
	OR	*Procure 50W	10-16 oz/A	12	1	
	OR	Flint 50WDG	2-4 oz/A	12	1	
	OR	Gem 500SC	1.9-3.8 oz/A	12	1	
	OR	Pristine 38WDG	10.5-14.5 oz/A	12	0	
	OR	Quash	2.5 to 4 oz /Acre			
American plum borer		Ambush 25 WP	6.4-12.8 oz/acre	12	3	[8.1]
	OR	Asana XL 0.66 EC	4.8-15.4 fl oz/acre	12	14	
	OR	*Baythroid XL 1EC or Baythroid 2 EC	2.4-2.8 fl oz/A	12	7	
	OR	Leverage 2.7 SE	4.4-5.1 fl oz/acre	12	7	
	OR	*Lorsban 4EC	1.5-3 qt/100 gal	96	0	
		or Lorsban 75WG	2-4 lb/100 gal	96	21	
	OR	Warrior II	1.28 to 2.56 fl oz/Acre	24	14	
Black cherry fruit fly		*Ambush 25WP#	1.6-3.2 oz/100 gal	12	3	[10.1]
Cherry fruit fly	*OR*	*Asana XL 0.66EC	2-5.8 oz/100 gal	12	14	
	OR	Assail 30 SG	2.5-8 oz/Acre	12	7	
	OR	or *Baythroid XL 1EC or Baythroid 2 EC	2.4-2.8 fl oz/A	12	7	

Table 13.3.1. Pesticide Spray Table – Cherries

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

Pest		Product	Rate	REI (hrs)	PHI (days)	Comments (see text)
Black cherry fruit fly	*OR*	Delegate 25 WG	4.5-7.0 oz/acre	4	7	
Cherry fruit fly	*OR*	*Diazinon 50WP#	1 lb/100 gal	24	21	
(continued)	*OR*	*Guthion 50WS	0.5 lb/100 gal	15 days (E)	15	
	OR	*Imidan 70WP	0.75 lb/100 gal	72	7(c)	
	OR	Lorsban 50WS	2-3 lb/A	96	21	[10.3]
	OR	*Proaxis 0.5CS	2.6-5.1 fl oz/A	24	14	
	OR	Sevin XLR Plus, 4F	2-3 qt/A	12	3	
		or Sevin 80S, *80WS	2.5-3.75 lb/A			
	OR	§Surround 95WP	50 lb/100 gal	4	0	[10.2]
	OR	*Warrior II	1.28 to 2.56 fl oz/Acre	24	14	
European red mite, Twospotted spider mite		Apollo 4SC	2-8 oz/A	12	21	[11.4]
	OR	Onager 1 EC	12-24 fl oz/acre	12	28	
	OR	Nexter 75WS	4.4-10.7 oz/A	12	300(PH)	
	OR	Savey 50DF	3-6 oz/A	12	28	[11.4]
	OR	*Vendex 50WP	4-8 oz/100 gal	48	14	[11.2]
	OR	Envidor	16-18 oz/A	12	7	
	OR	Portal	1-2 pt/A	12	365	[11.3]
	OR	Zeal 72 WS	2 to 3 oz/Acre	12	7	[11.5]
Japanese beetle		Assail 30 SG	5.3-8 oz/acre	12	7	12.2
	OR	Leverage 2.7 SE	3.6-4.4 fl oz/acre	12	7	
	OR	Provado 1.6 F	4.0-8.0 fl oz/acre	12	7	
	OR	Sevin XLR Plus, 4F	see label	2-3 qt/A	12	3
		or Sevin 80S, *80WS	see label	2.5-3.75 lb/A		
Lesser peachtree borer		Pheromone disruption ties: §Isomate-LPTB	100/A			[13.1]
	OR	*Ambush 25WP	6.4-12.8 oz/A	12	3	[13.2]
		or *Ambush 2EC	6.4-12.8 fl oz/A			
	OR	*Asana XL 0.66EC	2-5.8 oz/100 gal	12	14	
	OR	Lorsban 4EC	1.5-3 qt/100 gal	96		
		or Lorsban 75WG	1.3-2 lb/A	96	21	
	OR	*Pounce 25WP	6.4-12.8 oz/A	12	3	
	OR	*Proaxis 0.5CS	2.6-5.1 fl oz/A	24	14	
	OR	*Thionex 3EC	1 qt/100 gal	48	21	
		or *Thionex 50WP	2.6-5.1 fl oz/100 gal	96		
	OR	*Warrior II	1.28 to 2.56 fl oz/Acre	24	14	
Obliquebanded leafroller		*Baythroid XL 1EC	2.4-2.8 fl oz/A	12	7	
		or Baythroid 2 EC				
	OR	§Biobit XL 2.1FC	1.5-5.5 pt/A	4	0	[14.1]
	OR	Delegate 25 WG	4.5-7.0 oz/acre	4	7	
	OR	§Deliver 18WG	0.5-2 lb/A	4	0	
	OR	§Entrust 80WP	1.25-2.5 oz/A	4	7	

Table 13.3.1. Pesticide Spray Table – Cherries

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

Pest		Product	Rate	REI (hrs)	PHI (days)	Comments (see text)
Obliquebanded leafroller ***(continued)***	*OR*	§Javelin 7.5 WDG	0.25-4 lb/A	4	0	
	OR	Lorsban 50WS	2 lb/A	96	21	[13.2]
	OR	Leverage 2.7 SE	4.4-5.1 fl oz/acre	12	7	
	OR	Lorsban 75WG	1.3-2 lb/A	96	21	
	OR	Spin Tor 2SC	8 fl oz/A	4	7	
	OR	Belt	3 to 4 oz/Acre	12	7	
Postharvest						
Leaf spot		Bravo Ultrex 82.5 WDG or Bravo Weather Stik 6F	0.9-1.25 lb/100 gal 1.0-1.4 pt/100 gal	12 hr/ 7days(E)	SS	
	OR	Captan 50WP	1-2 lb/100 gal (max 4 lb/A)	96 (E)	0	
	OR	C-O-C-S *plus* hydrated lime	1.5 lb/100 gal 3 lb/100 gal	24	PH(C)	[4.4]
	OR	Echo 6F or Echo 90DF	1.0-1.4 pt/100 gal 0.75-1.2 lb/100 gal	12 hr/ 7days(E)	SS	
	OR	Rally 40WP	1.25-2 oz/100 gal	24	0	
	OR	Rubigan 1EC	3 fl oz/100 gal	12	0	
	OR	Syllit 65WP	0.5 lb/100 gal	48	0	
	OR	Flint 50WDG	2-4 oz/A	12	1	
	OR	Gem 500SC	1.9-3.8 oz/A	12	1	
	OR	Pristine 38WDG	10.5-14.5 oz/A	12	0	
Powdery mildew		C-O-C-S *plus* hydrated lime	1.5 lb/100 gal 3 lb/100 gal	24	PF, PH(C)	[4.4]
	OR	Rally 40WP	1.25-2 oz/100 gal	24	0	
	OR	Rubigan 1EC	3 fl oz/100 gal	12	0	
	OR	§Sulfur 95WP	3 lb/100 gal	12	0	
	OR	*Procure 50W	10-16 oz/A	12	1	
	OR	Flint 50WDG	2-4 oz/A	12	1	
	OR	Gem 500SC	1.9-3.8 oz/A	12	1	
	OR	Pristine 38WDG	10.5-14.5 oz/A	12	0	
	OR	Quash	2.5 to 4 oz/Acre	12	14	
European red mite, Twospotted spider mite		Nexter 75WS	4.4-10.7 oz/A	12	300(PH)	
Storage rots		Scholar SC	32 fl oz/100 gal (see comments & label)			[15.1]
Autumn						
Bacterial canker (Pseudomonas syringae)		Kocide 40DF	2-4 lb/100 gal	24	BL, PH (C)	[1.1]
		or Kocide 50WP	(max 12 lb/A)	24	BL, PH (C)	
		or §Cuprofix Ultra Disperss 40DF	10-16 lb/A			
		or other coppers	(see comments)			

Table 13.3.2. Growth Regulator Uses in Cherries

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

Timing	Product	Concentration Product	Rate of Formulated
PROMOTE LATERAL BRANCHING IN TART CHERRY: *(to counteract the adverse effects of tart cherry yellows virus on formation of vegetative buds)*			
14-21 days	Pro-Gibb 4%, Falgro 4L	10-15 ppm	4-6 fl oz/100 gal
after petal fall	Pro-Gibb Plus 2X, Falgro 20SP	10-15 ppm	0.67-1 oz (lb)/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.			
PROMOTE VEGETATIVE GROWTH OF YOUNG NON-BEARING TREES			
2-4 weeks	Pro-Gibb 4%, Falgro 4L	50-100 ppm	20-40 fl oz/100 gal
after bloom	Pro-Gibb Plus 2X, Falgro 20SP	50-100 ppm	3.34-6.67 oz (lb)/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	250-1,000 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	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 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 Plus 2X, Falgro 20SP	10-30 ppm	80-240g/acre
	Pro-Gibb 40%	10-15ppm	40-120g/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.