FIGURE 14.1.1

GROWTH STAGES IN PEACH

1. Dormant
2. Swollen bud
3 Bud burst
4. Pink
5. Bloom
6. Petal fall
7a. Fruit set – shucks on
7b. Fruit set – shucks off

14 Peaches and Nectarines

14.1 Insecticides and Fungicides for Peaches and Nectarines

See Sections 14.2, 14.3, and 14.4 for comments reltated to this table.

Table 14.1.1. Pesticide Spray Table – Peaches and Nectarines.

Refer to back of book for key to abbreviations and footnotes.
Refer to label for registration status before applying any pesticide to nectarines.

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Dormant						
Bacterial Spot	C-O-C-S WDG	4.0 lb/100 gal	12-16 lb/A	24	PF	[1.2]
	Kocide 2000		6-12 lb/A	48	21	
	Kocide 3000		3.5-7.0 lb/A	48	0	
	Cuprofix Ultra 40D		5.0-7.5 lb/A	48	SS	
	§Champ WG		8-16 lb/A	48	21	
	or other (§)copper formulations (see label)					
Peach leaf curl	Bravo Ultrex 82.5WDG	0.9-1.25 lb/100 gal	2.8-3.8 lb/A	12 hr-7days (E)	SS	[3.1]
	or Bravo Weather Stik 6F	1.0-1.4 pt/100 gal	3.1-4.1 pt/A			
	or other chlorothalonil formulations (see labels)					
	C-O-C-S	4 lb/100 gal	12-16 lb/A	24	PF	
	or other (§)copper formulations; see labels					
	Echo 720	1.0-1.4 pt/100 gal	3.1-4.1 pt/A	12hr/7 days (E)	SS	
	or Echo 90DF	0.75-1.2 lb/100 gal	2.25-3.5 lb/A			
	Ferbam Granuflo	1.5 lb/100 gal	4.5 lb/A	24	21	
	Kocide 2000		6-12 lb/A	48	21	
	Kocide 3000		3.5-7.0 lb/A	48	0	
	Thiram Granuflo	1.2 lb/100 gal	3.5 lb/A	24	7	
	Ziram 76DF	1.25-2.7 lb/100 gal	3.75-8 lb/A	48	14	
Phytophthora root, crown, and collar rots	Ridomil Gold SL 4EC		2 qt/A	48	0	[6.2]
Cottony peach scale, European fruit lecanium, San Jose scale, European red mite	(§)oil	2-3 gal/100 gal		12	0	[11.1], [11.1],[12.1]
	Centaur		34.5 oz/A	12	14	
Pink						
Brown rot (blossom blight)	Bravo WeatherStik 6F	1.0-1.4 pt/100 gal	3.1-4.1 pt/A	12hr/7 days (E)	SS	
	or other chlorothalonil formulations (see labels)					
	Captan 50WP	1-2 lb/100 gal	4-8 lb/A	24	0	
	or Captan 80WDG		2.5-5 lb/A	24	0	
	or Captec 4L	0.75-1 qt/100 gal		24	0	
	Echo 720	1.0-1.4 pt/100 gal	3.1-4.1 pt/A	12 hr/7 days(E)	SS	
	or Echo 90DF	0.75-1.2 lb/100 gal	2.25-3.5 lb/A			
	Elevate 50WDG		1.5 lb/A	12	0	
	Fontelis 1.67		14-20 fl oz/A	12	0	
	Gem 500SC		1.9-3.8 oz/A	12	1	[2.8]
	Indar 2F		6 fl oz/A	12	0	[2.8]
	Inspire Super		16-20 fl oz/A	12	2	
	Merivon		4.0-6.7 fl oz/A	12	0	

Table 14.1.1. Pesticide Spray Table – Peaches and Nectarines.

Refer to back of book for key to abbreviations and footnotes.
Refer to label for registration status before applying any pesticide to nectarines.

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Pink (continued)						
Brown rot (blossom blight) (*continued*)	Meteor 4F		1-2 pt/A	24	PF	
	Pristine 38 WDG		10.5-14.5 oz/A	12	0	
	Quash 50WDG		2.5-3.5 oz/A	12	14	
	Rally 40WSP		2.5-6 oz/A	24	0	[2.8]
	Rovral 4F		1-2 pt/A	24	PF	[2.3]
	Scala SC		9-18 fl oz/A	12	2	
	Sulfur 92WP	5-10 lb/100 gal		24	0	
	§Microthiol Disperss or other (§)sulfur products	 See labels	10-20 lb/A	24		
	Thiram Granuflo	1.2 lb/100 gal	3.5 lb/A	24	7	[2.3]
	Tilt 3.6 EC		4 fl oz/A	12	0	[2.8]
	Topsin M 70 WP,WSB or Topsin 4.5 Fl	0.33-0.5 lb/100 gal 6.7-10 fl oz/100 gal	1-1.5 lb/A 20-30 fl oz/A	48 48	1 1	
Tarnished plant bug	*Asana XL 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14	[21.1],[21.2]
	Assail 30SG		5.3-8.0 oz/A	12	7	
	*Baythroid XL 1 EC		2.0-2.4 fl oz/A	12	7	
	Beleaf 50 SG		2.0-2.8 oz/A	12	14	
	*Pounce 25WP		6.4-16 oz/A	12	14	
	*Proaxis 0.5 CS		2.6-5.1 fl oz/A	24	14	
	*Warrior II 2.08 CS		1.3-2.5 fl oz/A	24	14	
	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.					
	*Voliam Xpress		6-12 fl oz/A	24	14	
Bloom						
Brown rot (blossom blight)	See materials listed under Pink					
Oriental fruit moth	See comments [16.1] regarding pheromone disruption					
Petal Fall						
Brown rot (blossom blight)	See materials listed under Pink					[2.5]
American plum borer, Peachtree borer, Lesser peachtree borer	Asana XL 0.66Ec	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14	[10.1]
	*Baythroid XL 1EC		[see comment]	12	7	[10.2]
	*Lorsban 4EC	3 qt/100 gal		96	14	[10.1]
	or *Lorsban Advanced 3.8EC	3 qt/100 gal		96	14	
	or Lorsban 75 WG	4 lb/100		96	14	
	*Pounce 25WP		6.4-16.0 oz/A	12	14	[10.2]
	*Proaxis		2.6-5.1 fl oz/A	24	14	
	Scorpion		5.25-7 fl oz/A	12	7	[10.3]
	*Warrior II		1.3-2.6 fl oz/A	24	14	
	(§)Pheromone disruption ties: Isomate PTB-Dual		 150 ties/A			 [17.1]

Table 14.1.1. Pesticide Spray Table – Peaches and Nectarines.

Refer to back of book for key to abbreviations and footnotes.
Refer to label for registration status before applying any pesticide to nectarines.

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Petal Fall (continued)						
American plum borer, Peachtree borer, Lesser peachtree borer (*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.					
	*Endigo ZC		5-5.5 fl oz/A	24	14	
	*Leverage 360		2.4-2.8 fl oz/A	12	7	
	*Voliam Xpress		6-12 fl oz/A	24	14	
Green peach aphid	Actara		3.0-4.0 oz/A	12	14	[13.1]
	Assail 30SG		2.5-5.3 oz/A	12	7	
	Beleaf 50SG		2.0-2.8 oz/A	12	14	
	*Lannate LV 2.4L	0.75 pt/100 gal	3 pt/A	96	4	[13.1]
	or *Lannate 90SP	0.25 lb/100 gal	1 lb/A	96	4	
	Movento SC		6.0-9.0 fl oz/A	24	7	[13.1]
	The following pre-mix products are 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.					
	*Endigo ZC		5-5.5 fl oz/A	24	14	
	Voliam Flexi WDG		4.0-7.0 oz/A	12	14	
Oriental fruit moth	See materials listed under Shuck Split					
Tarnished plant bug	See materials listed under Pink plus					
	Actara		4.5-5.5 oz/A	12	14	[21.3]
	Belay 2.1 EC		6 fl oz/A	12	21	[21.3]
	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.					
	*Leverage 360		2.4-2.8 fl oz/A	12	7	
Western flower thrips	Actara 25WDG		4.5-5.5 oz/A	12	14	
	Delegate 25 WG		4.5-7 oz/A	4	1	
	§Entrust 80WP	0.4-0.8 oz/100 gal	1.25-2.5 oz/A	4	1	
	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.					
	*Endigo ZC		5-5.5 fl oz/A	24	14	
	Voliam Flexi		4.0-7.0 oz/A	12	14	
	*Voliam Express		6-12 fl oz/A	24	14	
Shuck Split						
Brown rot	Bravo WeatherStik 6F	1.0-1.4 pt/100 gal	3.1-4.1 pt/A	12hr/7	SS	[2.6]
	or other chlorothalonil formulations (see labels)			days(E)		
	Captan 50WP	1-2 lb/100 gal	4-8 lb/A	24	0	
	or Captan 80 WDG		2.5-5 lb/A	24	0	
	or Captec 4L	0.75- 1 qt/100 gal		24	0	
	Echo 720	1.0-1.4 pt/100 gal	3.1-4.1 pt/A	12hr/7	SS	
	or Echo 90DF	0.75-1.2 lb/100 gal	2.25-3.5 lb/A	days(E)	SS	
	Elevate 50WDG		1.5 lb/A	12	0	

Table 14.1.1. Pesticide Spray Table – Peaches and Nectarines.

Refer to back of book for key to abbreviations and footnotes.
Refer to label for registration status before applying any pesticide to nectarines.

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Shuck Split (continued)						
Brown rot (*continued*)	Fontelis 1.67		14-20 fl oz/A	12	0	
	Indar 2F		6 fl oz/A	12	0	[2.8]
	Inspire Super		16-20 fl oz/A	12	2	
	Merivon		4.0-6.7 fl oz/A	12	0	
	Pristine 38WDG		10.5-14.5 oz/A	12	0	
	Quash 50 WDG		2.5-3.5 oz/A	12	14	
	Rally 40WSP		2.5-6 oz/A	24	0	[2.8]
	Sulfur 92WP	5-10 lb/100 gal		24	0	[2.6]
	§Microthiol Disperss		10-20 lb/A	24	0	
	or other (§)sulfur products	See labels				
	Thiram Granuflo	1.2 lb/100 gal	3.5 lb/A	24	7	
	Tilt 3.6EC		4 fl oz/A	12	0	[2.8]
	Topsin M 70 WP, WSB	0.33-0.5 lb/100 gal	1-1.5 lb/A	48	1	
	Topsin 4.5 FL	6.7-10 fl oz/100 gal	20-30 fl oz/A	48	1	
Bacterial spot	§Mycoshield 17WP	12 oz/100 gal		12	21	[1.3]
	FireLine 17 WP	12 oz/100 gal		12	21	
	(§)copper products	See comments				[1.4]
Peach scab	Bravo Ultrex 82.5WDG	0.9-1.25 lb/100 gal	2.8-3.8 lb/A	12 hr/7	SS	[4.2]
	or Bravo Weather Stik 6F	1.0-1.4 pt/100 gal	3.1-4.1 pt/A	days(E)		
	or other chlorothalonil formulations (see labels)					
	Echo 720	1.0-1.4 pt/100 gal	3.1-4.1 pt/A	12hr/7	SS	
	or Echo 90DF	0.75-1.2 lb/100 gal	2.25-3.5 lb/A	days(E)	SS	
	Captan 50WP	1-2 lb/100 gal	4-8 lb/A	24	0	
	or Captan 80 WDG		2.5-5 lb/A	24	0	
	or Captec 4L	0.75-1 qt/100 gal		24	0	
	Gem 500SC		1.9-3.8 oz/A	12	1	
	Indar 2F		6 fl oz/A	12	0	
	Inspire Super		16-20 fl oz/A	12	2	
	Sulfur 92WP	5-10 lb/100 gal		24	0	
	or §Microthiol Disperss 80DF		6-12 lb/A	24	0	
	or other (§)sulfur products	See labels				
	Quash		2.5-3.5 oz/A	12	14	
	Thiram Granuflo	1.2 lb/100 gal	3.5 lb/A	24	7	[2.3]
	Topsin M 70WP		0.5-0.75 lb/A	48	1	
	plus					
	Captan 80 WDG		1.25-2.5 lb/A	24	0	
Obliquebanded leafroller	Altacor 35 WDG		3.0-4.5 oz/A	4	10	[15.1]
	*Baythroid XL 1EC		2.4-2.8 fl oz/A	12	7	
	Belt SC		3.0-4.0 fl oz/A	12	7	
	§Biobit HP		0.5-2.0 lb/A	4	0	
	*Danitol 2.4EC		10.7-21.3 fl oz/A	24	3	
	Delegate 25 WG		4.5-7.0 oz/A	4	1	[15.1]
	§Deliver		0.5-2.0 lb/A	4	0	
	§Dipel DF		0.5-2.0 lb/A	4	0	
	§Entrust 80WP	0.4-0.8 oz/100 gal	1.25-2.5 oz/A	4	1	[15.1]

Table 14.1.1. Pesticide Spray Table – Peaches and Nectarines.

Refer to back of book for key to abbreviations and footnotes.
Refer to label for registration status before applying any pesticide to nectarines.

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Shuck Split (continued)						
Obliquebanded leafroller (*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.					
	*Leverage 360		2.4-2.8 fl oz/A	12	7	
	Tourismo		10-14 fl oz/A	12	14	
	*Voliam Xpress		6-12 fl oz/A	24	14	
Oriental fruit moth, Lesser peachtree borer, Plum curculio	Actara		4.5-5.5 oz/A	12	14	[16.2]
	Altacor 35 WDG		3.0-4.5 oz/A	4	10	[16.2],[17.2]
	*Asana XL 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14	
	Assail 30SG		5.3-8.0 oz/A	12	7	[17.2]
	Avaunt 30WDG		5.0-6.0 oz/A	12	14	[16.2]
	§Aza-Direct 1.2L		1-2 pts/A	4	0	
	Azatin XL 3L		10-21 fl oz/A	4	0	
	*Baythroid XL 1EC					[10.2],[17.3]
	for lesser peachtree borer:		1.4-2.0 fl oz/A	12	7	
	for oriental fruit moth:		2.0-2.4 fl oz/A	12	7	
	for plum curculio:		2.4-2.8 fl oz/A	12	7	
	Belay		6.0 fl oz/A	12	21	[18.1],[16.2], [17.2]
	Belt SC		3.0-4.0 fl oz/A	12	14	[16.2]
	*Danitol 2.4EC		10.7-21.3 fl oz/A	24	3	
	Delegate 25WG		6.0-7.0 oz/A	4	1	[16.2]
	Imidan 70W	0.75-1.0 lb/100 gal	2.1-4.25 lb/A	96	14	[16.4]
	Intrepid 2F		10-16 fl oz/A	4	7	[16.2]
	*Pounce 25WP		6.4-16.0 oz/A	12	14	[10.2]
	*Proaxis 0.5CS		2.6-5.1 fl oz/A	24	14	
	Sevin XLR Plus, 4F		2-3 qt/A	12	3	
	§Surround 95WP		25-50 lb/A	4	0	[18.2]
	*Warrior II		1.3-2.6 fl oz/A	24	14	
	(§)Pheromone disruption:					
	§Checkmate OFM Dispenser		100-200 dispensers/A			[16.1]
	or Checkmate OFM Flowable		1.3-2.9 fl oz/A			[16.1]
	or Isomate-M 100		100 ties/A			[16.1]
	or Isomate PTB-Dual		150 ties/A			[17.1]
	The following pre-mix products are 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.					
	*Endigo ZC		5-5.5 fl oz/A	24	14	
	*Leverage 360		2.4-2.8 fl oz/A	12	7	
	Tourismo		10-14 fl oz/A	12	14	
	Voliam Flexi		4.0-7.0 oz/A	12	14	
	*Voliam Xpress		6-12 fl oz/A	24	14	

Table 14.1.1. Pesticide Spray Table – Peaches and Nectarines.

Refer to back of book for key to abbreviations and footnotes.
Refer to label for registration status before applying any pesticide to nectarines.

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Shuck Split (continued)						
San Jose Scale, Lecanium Scale	Centaur		34.5-46.0 oz/A	12	14	[11.2]
	Admire Pro		1.4-2.8 fl oz/A	12	0	
	Esteem 0.86EC		13-16 fl oz/A	12	14	
	Movento		6.0-9.0 fl oz/A	24	7	
Tarnished plant bug	See materials listed under Petal Fall					
Additional Summer Sprays						
Bacterial spot	§Mycoshield 17WP	12 oz/100 gal		12	21	[1.3]
	FireLine 17WP	12 oz/100 gal		12	21	
	(§)copper products	See comments				[1.4]
Brown rot	Captan 50WP	1-2 lb/100 gal	4-8 lb/A	24	0	[2.8]
	or Captan 80 WDG		2.5-5 lb/A	24	0	
	or Captec 4L	0.75-1 qt/100 gal		24	0	
	Elevate 50WDG		1.5 lb/A	12	0	
	Fontelis 1.67		14-20 fl oz/A	12	0	
	Indar 2F		6 fl oz/A	12	0	
	Inspire Super		16-20 fl oz/A	12	2	
	Merivon		4.0-6.7 fl oz/A	12	0	
	Pristine 38WDG		10.5-14.5 oz/A	12	0	
	Quash 50WDG		2.5-4.0 oz/A	12	14	
	Rally 40WSP		2.5-6 oz/A	24	0	
	Thiram Granuflo	1.2 lb/100 gal	3.5 lb/A	24	7	[2.3]
	Tilt 3.6EC		4 fl oz/A	12	0	
	Sulfur 92WP	5-10 lb/100 gal		24	0	
	§Microthiol Disperss		10-20 lb/A	24	0	
	or other (§)sulfur products	See labels				
Peach scab	Captan 50WP	1-2 lb/100 gal	4-8 lb/A	24	0	[4.2]
	or Captan 80 WDG		2.5-5 lb/A	24	0	
	or Captec 4L	0.75-1 qt/100 gal		24	0	
	Gem 500SC		1.9-3.8 oz/A	12	1	
	Inspire Super		16-20 fl oz/A	12	2	
	Sulfur 92WP	6-8 lb/100 gal		24	0	
	or §Microthiol Disperss 80DF		6-12 lb/A	24	0	
	Thiram Granuflo	1.2 lb/100 gal	3.5 lb/A	24	7	[2.3]
	Topsin M 70WP		0.5-0.75 lb/A	48	1	
	plus:					
	Captan 80 WDG		1.25-2.5 lb/A	24	0	
Powdery mildew (rusty spot)	Sulfur 92WP	5-10 lb/100 gal		24	0	[7.2]
	§Microthiol Disperss		10-20 lb/A	24	0	
	Inspire Super		16-20 fl oz/A	12	2	
	Quintec 2.08EC		7 fl oz/A	12	7	
European red mite, Twospotted spider mite	Acramite 50WS		0.75-1.0 lb/A	12	3	[12.2]
	Apollo 4SC		2.0-8.0 oz/A	12	21	
	Envidor 2SC		16-18 fl oz/A	12	7	[12.2]
	Nexter 75WS		4.4-10.7 oz/A	12	7	[12.2]
	Onager 1EC		12-24 fl oz/A	12	28	
	Portal		2 pts/A	12	365	[12.3]

Table 14.1.1. Pesticide Spray Table – Peaches and Nectarines.

Refer to back of book for key to abbreviations and footnotes.
Refer to label for registration status before applying any pesticide to nectarines.

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Additional Summer Sprays (continued)						
European red mite, Twospotted spider mite (*continued*)	Savey 50DF		3.0-6.0 oz/A	12	28	
	*Vendex 50WP		1.0-2.0 lb/A	48	14	
	Zeal 72 WS		2.0-3.0 oz/A	12	7	
Green peach aphid	Actara		3.0-4.0 oz/A	12	14	[13.1]
	Admire Pro		1.4-2.8 fl oz/A	12	0	
	Assail 30SG		2.5-5.3 oz/A	12	7	
	Beleaf 50SG		2.0-2.8 oz/A	12	14	
	*Lannate LV 2.4L	0.75 pt/100 gal	3 pt/A	96	4	[13.1]
	or *Lannate 90SP	0.25 lb/100 gal	1 lb/A	96	4	
	Movento		6.0-9.0 fl oz/A	24	7	
	The following pre-mix products are 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.					
	*Endigo ZC		5-5.5 fl oz/A	24	14	
	Voliam Flexi WDG		4.0-7.0 oz/A	12	14	
Japanese Beetle	Admire Pro		1.4-2.8 fl oz/A	12	0	[14.2]
	Assail 30SG		5.3-8.0 oz/A	12	7	
	Imidan 70W	0.75-1.0 lb/100 gal	2.1-4.25 lb/A	4-14 days	14	[14.3]
	Sevin XLR Plus, 4F		2-3 qt/A	12	3	
	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.					
	*Endigo ZC		5-5.5 fl oz/A	24	14	
	*Leverage 360		2.4-2.8 fl oz/A	12	7	
	*Voliam Express		6-12 fl oz/A	24	14	
Lecanium scale, San Jose scale	Admire Pro		1.4-2.8 fl oz/A	12	0	[11.2]
	Centaur		34.5-46 oz/A	12	14	
	Esteem 0.86EC		13-16 fl oz/A	12	14	
	Movento		6.0-9.0 fl oz/A	24	7	
Oriental fruit moth	(§)Pheromone disruption:					[16.1]
	§Checkmate OFM Dispenser		100-200 dispensers/A			
	or Checkmate OFM Flowable		1.3-2.9 fl oz/A			
	or Isomate-M 100		100 ties/A			
	Altacor 35 WDG		3.0-4.5 oz/A	4	10	[16.2], [16.3]
	*Asana XL 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14	
	Assail 30SG		5.3-8.0 oz/A	12	7	
	Avaunt 30 WDG		5.0-6.0 oz/A	12	14	
	*Baythroid XL 1L		2.0-2.4 fl oz/A	12	7	
	Belt SC		3.0-4.0 fl oz/A	12	14	
	*Danitol 2.4EC		10.7-21.3 fl oz/A	24	3	
	Delegate 25 WG		6.0-7.0 oz/A	4	1	

Table 14.1.1. Pesticide Spray Table – Peaches and Nectarines.

Refer to back of book for key to abbreviations and footnotes.
Refer to label for registration status before applying any pesticide to nectarines.

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Additional Summer Sprays (continued)						
Oriental fruit moth *(continued)*	§Entrust 80WP	0.4-0.8 oz/100 gal	1.25-2.5 oz/A	4	1	
	Imidan 70W	0.75-1.0 lb/100 gal	2.1-4.25 lb/A	14 days	14	[16.4]
	Intrepid 2F		10-16 fl oz/A	4	7	
	Proaxis 0.5CS		2.6-5.1 fl oz/A	24	14	
	Sevin XLR Plus, 4F		2-3 qt/A	12	3	
	*Warrior II		1.3-2.6 fl oz/A	24	14	
	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.					
	*Endigo ZC		5-5.5 fl oz/A	24	14	
	*Leverage 360		2.4-2.8 fl oz/A	12	7	
	Tourismo		10-14 fl oz/A	12	14	
	Voliam Flexi WDG		4.0-7.0 oz/A	12	14	
	*Voliam Xpress		6-12 fl oz/A	24	14	
American plum borer, Peachtree borer, Lesser Peachtree borer	*Asana XL 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14	[17.3]
	*Baythroid XL 1EC		1.4-2.0 fl oz/A	12	7	
	*Lorsban 4EC	3 qt/100 gal		96	14	
	or Lorsban 75WG	4 lb/100 gal		96	14	
	or *Lorsban Advanced 3.8EC	3 qt/100 gal		96	14	
	*Pounce 25WP		6.4-16 oz/A	12	14	
	Proaxis 0.5CS		2.6-5.1 fl oz/A	24	14	
	*Warrior II		1.3-2.6 fl oz/A	24	14	
	The following pre-mix products are 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.					
	*Endigo ZC		5-5.5 fl oz/A	24	14	
	*Leverage 360		2.4-2.8 fl oz/A	12	7	
	*Voliam Xpress		6-12 fl oz/A	24	14	
Spotted wing Drosophila	*Asana XL 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14	[19.3]
	Actara		4.5-5.5 oz/A	12	14	
	Admire Pro		1.4-2.8 oz/A	12	0	
	Assail	5.3-8 oz/100 gal		12	7	
	*Baythroid XL		2.4-2.8 fl oz/A	12	7	
	*Danitol 2.4EC		10.7-21.3 fl oz/A	24	3	
	Delegate 25WG		6-7 oz/A	4	1	
	*Diazinon AG500	1 pt/100 gal		96	21	
	§Entrust 80WP	0.4-0.8 oz/100 gal	1.25-2.5 oz/A	4	1	
	Imidan 70W	0.75-1 lb/100 gal	2.13-4.25 lb/A	96	14	[19.4]
	*Lannate 2.4LV		3 pt/A	96	4	[19.3]
	or *Lannate 90SP		1 lb/A	96	4	
	Malathion 5EC		2.5-4.8 pts/A	24	7	
	Mustang Max		4 oz./A	12	14	
	Pyganic		1 pt- 2 qt/A	12	0	[19.3]
	Sevin XLR Plus		2-3 qts/A	12	3	

Table 14.1.1. Pesticide Spray Table – Peaches and Nectarines.

Refer to back of book for key to abbreviations and footnotes.
Refer to label for registration status before applying any pesticide to nectarines.

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Additional Summer Sprays (continued)						
Spotted wing Drosophila *(continued)*	Venom		2-4 oz	12	3	[19.5]
	The following pre-mix product is 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.					
	*Leverage 360		2.4-2.8 fl oz/A	12	7	
Stink bugs, including Brown marmorated stink bug	Actara		3.0-4.0 oz/A	12	14	[20.2]
	Assail 30SG		5.3-8.0 oz/A	12	7	
	Belay		6.0 fl oz/A	12	21	[20.2]
	*Danitol 2.4EC		10.7-21.3 fl oz/A	24	3	[20.2]
	*Lannate 2.4LV		2.25 pt/A	96	4	[20.2]
	or *Lannate 90SP		0.75 lb/A	96	4	
	Scorpion		5.25-7 fl oz/A	12	3	
	*Warrior IICS		1.28-2.56 fl oz/A	24	14	
	The following pre-mix products are 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.					
	*Endigo ZC		5-5.5 fl oz/A	24	14	
	*Leverage 360		2.4-2.8 fl oz/A	12	7	
	Voliam Flexi		6-7 fl oz/A	12	14	
Tarnished plant bug	Actara		4.5-5.5 oz/A	12	14	[21.2, 21.3]
	*Asana XL 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14	
	Assail 30SG		5.3-8.0 oz/A	12	7	
	*Baythroid XL 1 L		2.0-2.4 fl oz/A	12	7	
	Belay 2.1 EC		6 fl oz/A	12	21	[21.3]
	Beleaf 50SG		2.0-2.8 oz/A	12	14	
	*Danitol 2.4EC		10.7-21.3 fl oz/A	24	3	
	*Lannate LV 2.4L	0.75 pt/100 gal	3 pt/A	96	4	[21.3]
	or *Lannate 90SP	0.25 lb/100 gal	1 lb/A	96	4	
	*Pounce 25WP		6.4-16.0 oz/A	12	14	
	Proaxis 0.5CS		2.6-5.1fl oz/A	24	14	
	*Warrior II 2.08 CS		1.3-2.5 fl oz/A	24	14	
	The following pre-mix products are 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.					
	*Endigo ZC		5-5.5 fl oz/A	24	14	
	*Leverage 360		2.4-2.8 fl oz/A	12	7	
	Voliam Flexi WDG		4.0-7.0 oz/A	12	14	
	*Voliam Xpress		6-12 fl oz/A	24	14	
Western flower thrips	Actara 25WDG		4.5-5.5 oz/A	12	14	[22.2]
	§Entrust 80WP		1.25-2.5 oz/A	4	1	
	Delegate WG		4.5-7 oz/A	4	1	

Table 14.1.1. Pesticide Spray Table – Peaches and Nectarines.

Refer to back of book for key to abbreviations and footnotes.
Refer to label for registration status before applying any pesticide to nectarines.

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Additional Summer Sprays (continued)						
Western flower thrips *(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.					
	*Endigo ZC		5-5.5 fl oz/A	24	14	
	Voliam Flexi WDG		4.0-7.0 oz/A	12	14	
	*Voliam Xpress		6-12 oz/A	24	14	
X-Disease	Remove chokecherries	See comments				[9.1], [9.2]
Control of Storage Disorders						
Storage rots	Scholar SC	16 fl oz/100 gal (see comments & label)				[23.1]
After Harvest, Before Leaf Drop						
Prunus stem pitting virus	Product 2,4-D as described in the weed control section for "Dandelion and other broadleaf weeds in sod cover"					

14.2 Diseases

14.2.1 Bacterial Spot

• Biology & Cultural

[1.1] Bacterial spot is a devastating disease of peaches and nectarines as well as plums, prunes and apricots. This disease is most likely to be a problem on susceptible varieties (e.g., Autumnglo, Babygold 5, Redhaven, California white-fleshed varieties, nectarines). Any variety developed in drier climates and then grown in the more humid climate of New England has a strong likely hood of being susceptible. Also, this disease will be more severe in the warmer southern portions of New England, in wet years, in orchards with lighter (sandy) soils, and in windy orchard sites. The bacterial spot pathogen, *Xanthomonas arboricola* pv. *pruni* infects leaf scars at leaf drop and overwinters in infected twigs. Bacteria populations subsequently multiply during warm weather and ooze out during spring rains. Immature tissues are less susceptible to the bacterial infection, and as such, infections will not begin until petal fall/shuck split. Early season §copper applications are quite effective for controlling the bacterial populations, but are also likely to induce phytotoxicity if one is not careful. Moreover, copper phytotoxicity can cause symptoms similar to that of bacterial spot. Do not plant susceptible peach varieties near plums, prunes, or apricots. Prunes, plum, and apricots are also susceptible to bacterial spot, and no materials are registered for use on bacterial spot of prunes, plum, and apricots.

• Pesticide Application Notes

[1.2] Where susceptible varieties are planted, a delayed dormant application of (§)copper may help reduce bacterial spot disease pressure for the season. Along these lines, if applications of copper were made to manage peach leaf curl, these applications will substitute for those needed for bacterial spot. Apply copper with caution. Peaches are very susceptible to copper injury, especially after bud break. Copper phytotoxicity will be exacerbated by cool wet weather and environmental acidity.

[1.3] Where control is needed, apply sprays of oxytetracycline products such as Mycoshield or FireLine every 7-10 days from shuck split until 3 wk before harvest. The sprays immediately after shuck split are the most important for protecting the fruit. Thorough coverage is essential. Copper sprays applied for peach leaf curl at leaf drop should also aid in bacterial spot control.

[1.4] Low rates of copper can be applied post-bloom to reduce harvest damage and build up of bacterial populations in susceptible varieties. Take caution with post-bloom copper applications. These copper applications may result in phytotoxicity, especially if no rains occur between applications. If copper sprays are applied under acidic conditions (e.g., with LI-700 or other acidifiers) these may be more phytotoxic than copper applied alone. Copper products should be alternated with oxytetracycline products (e.g. Mycoshield, FireLine) for resistance management. See 1.3 above. This approach also reduces phtotoxicity from the copper and lowers the overall cost as compared to using oxytetracycline alone.

Kocide 3000 is the only copper product that can be applied up to six times after bloom. However, the recommended rate for foliar applications is only 0.75 to 1.5 oz/A which is **much lower** than label rates. The low rates are needed to prevent damage to the leaves and fruit, especially on nectarines. Other copper products allow postbloom applications but are limited to first and second covers. If other copper products are used, the rates need to be much lower than those stated on the label. Consult with your state fruit specialist or crop advisor for rate information.

14.2.2 Brown Rot (Blossom Blight)

• Biology & Cultural

[2.1] Blossom blight is most likely to occur when the weather is warm (above 60° F) and wet during bloom or when significant numbers of fruit were left unharvested the previous year. Blossom blight may also be serious at lower temperatures if prolonged wetting periods occur. However, blossom sprays on peaches may often be reduced or eliminated if these conditions do not occur. Nectarines are more susceptible to brown rot than most peach cultivars.

[2.2] Good insect control is important to prevent formation of entry points for the brown rot fungus. Pay special attention to control of plum curculio, oriental fruit moth, and tarnished plant bug. Fruits thinned after pit hardening are likely to become infected on the orchard floor and provide a source of inoculum for spread to ripening fruits in the tree; in contrast, fruits thinned prior to pit hardening are much less likely to do so.

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

[2.3] When used at a rate of 10 oz/100 gal dilute, Rovral 50WP provides 24-48 hr kickback activity against blossom blight infections at 68° F. Meteor applied at 2 pt/A provides 24-48 hr kickback. Only 2 applications of Rovral are allowed per year. Indar, Quash, and Tilt also have significant kickback activity. Also, note that Thiram Granuflo is not labeled for use on nectarines

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

[2.5] If a previous brown rot spray was applied, a petal fall application is necessary on peaches only if warm and wet weather persists.

[2.6] Fruit are very susceptible to infection for the first 3 wk after shuck split; therefore, the shuck split and 1st cover sprays are important for controlling brown rot, particularly in wet weather. Chlorothalonil (Bravo, Echo) has longer residual activity than captan or sulfur, but do not use Chlorothalonil after shuck split. Indar is also highly effective.

[2.7] Indar and Tilt can be used until the day of harvest. Fruit becomes increasingly susceptible to infection the last 3 wk before harvest. It is therefore suggested that spray intervals be tightened up during this period and that Indar, Quash or Tilt be used if disease pressure is high.

• Pesticide Resistance

[2.8] For resistance management purposes, the SI fungicides (Indar, Quash, Tilt and Rally) should not be used routinely throughout the season for BOTH blossom blight AND fruit rot control. Where peaches within the same block ripen over an extended season, continued use of SI fungicides as preharvest sprays for successive varieties will also create selection pressure for fungicide resistance. Use captan, Gem or Pristine to break the string of preharvest SI fungicides applied to varieties with varied ripening or harvest dates.

14.2.3 Peach Leaf Curl

• Pesticide Application Notes

[3.1] Leaf curl sprays are especially important in years following crop failures because inoculum can build in orchards that do not receive brown rot sprays. Leaf curl sprays can be applied anytime between leaf fall and bud swell. Treatment applied after bud swell may not provide 100% control. (§)Fixed copper compounds applied at leaf fall should also improve bacterial spot control by reducing the inoculum that overwinters in leaf scars. Several other commercial copper formulations in addition to those listed may be labeled for this use on peaches. Most copper formulations should give comparable rates of control at comparable rates of metallic copper.

14.2.4 Peach Scab

• Biology & Cultural

[4.1] Most likely to develop if weather is warm and wet the first several weeks following shuck split. Generally more of a problem on later varieties, and following a year when spring frosts destroyed the crop and no fungicides were applied.

• Pesticide Application Notes

[4.2] Where control is needed, apply sprays at 10- to 14-day intervals beginning at shuck split and continuing until 6 wk before harvest. Spray intervals can be lengthened during extended periods of dry weather. Bravo or Echo applied at shuck split will provide at least 14 days of protection for young fruits. Do not use Bravo, Echo or other chlorothalonil products after shuck split.

14.2.5 Perennial (Cytospora, Valsa) Canker

• Biology & Cultural

[5.1] Perennial canker is the most destructive disease of peach trees in New England and other cold-climate regions. Infections usually become established in pruning wounds or winter-injured tissue, from which they slowly expand and girdle the infected trunk or limbs. The most common point of entry is small, weak shoots that develop in the centers of the trees, then become killed during the winter. Thus, the most effective means of controlling this disease is to prune trees so that their centers are open. Other control practices include establishing new plantings at a distance from old, cankered blocks; training to promote wide crotch angles (reduced breakage and winter injury); delaying annual pruning until bloom or later, to allow pruning cuts to "heal" quickly; and standard horticultural practices to promote winter hardiness, such as the application of white trunk paint. Some fungicides applied for brown rot control after pruning may help protect these wounds from infection, but such benefits are unproven and likely to be minor. *This disease is controlled almost entirely through horticultural practices!!!*

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.

14.2.6 Phytophthora Root, Crown, and Collar Rots

• Biology & Cultural

[6.1] Peach rootstocks are significantly more susceptible to Phytophthora root, crown, and collar rots than are apples (peach is similar to cherry in susceptibility). The main defense 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. Ridomil will provide additional protection in wet years, on marginal sites, or in wetter sections of the orchard. See comment about application.

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.

• Pesticide Application Notes

[6.2] 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 assure good coverage (material is moved into the soil by subsequent rain or irrigation). See label for further details.

14.2.7 Powdery Mildew (Rusty Spot)

• Biology & Cultural

[7.1] Only a problem on certain susceptible varieties (e.g., Rio-Oso-Gem, Redskin). Can be particularly severe if peaches are planted adjacent to mildew-susceptible apple cultivars.

• Pesticide Application Notes

[7.2] Where disease has been a problem, add sulfur to each spray from petal fall through pit hardening. This rate of sulfur may be combined with 1 lb captan/100 gal in the early cover sprays for brown rot protection. When applied for brown rot control, the SI fungicides (Indar, Quash, Tilt) also should provide control of powdery mildew.

14.2.8 Prunus Stem Pitting Virus

• Biology & Cultural

[8.1] Prunus stem pitting virus is spread from broadleaf weed species to trees by the dagger nematode. The virus is seed-transmitted and enters orchards via windblown seeds from infected weed species. Broadleaf weeds in the sodded row middles should be controlled annually using 2,4-D after harvest to minimize the potential sources of virus in the orchard.

14.2.9 X-Disease

• Biology & Cultural

[9.1] The only effective control for X-disease of peach, nectarine, and cherry is the destruction of infected host plants within a 500-ft radius of the orchard. Chokecherry (*Prunus virginianae*) and wild sweet cherry seedlings are the wild hosts that provide most of the inoculum for leafhopper vectors of this disease. Wild black cherry (*Prunus serotina*) is not a host for X-disease. Infected sweet and tart cherry trees (particularly those on Mazzard rootstock) and wild sweet cherry seedlings can also serve as inoculum sources, but leafhoppers cannot acquire the disease from infected peach or nectarine trees. Where X-disease is a concern, new peach and nectarine plantings should be isolated from plantings of sweet cherries that might harbor X-disease.

All chokecherry and wild sweet cherry seedlings within 500 ft of peach, nectarine, and cherry orchards should be eradicated either by physically removing the plants or through use of brush killers. DO NOT USE BRUSH KILLERS WITHIN THE ORCHARD. Where chokecherries have been removed or treated with brush killers, check for regrowth of chokecherry sprouts during the season following treatment. Some broadleaf weeds can also harbor the X-disease pathogen, and weeds encourage high populations of X-disease vectors. To minimize risks of X-disease, stone fruit orchards should be treated annually (in autumn) with 2,4-D herbicide to eliminate broadleaf weeds in the grass ground cover.

• Pesticide Application Notes

[9.2] There are a number of brush killers labeled for non-crop sites. However, Garlon (triclopyr) specifically lists chokecherries on the label. Also, Crossbow (a mixture of triclopyr and 2,4-D) lists cherries on the label. These herbicides should be applied as a spot treatment to chokecherries only in areas **outside** the orchard in early to mid-summer. **DO NOT USE BRUSH KILLERS IN THE ORCHARD.**

14.3 Insects and Mites

14.3.1 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

[10.1] Apply spray against newly emerging adults, shortly after petal fall. For *Asana and *Lorsban products, apply as a coarse, low-pressure spray to give uniform coverage of tree trunks and lower limbs. Particularly a problem in trees with split trunks from Perennial canker or winter injury. Will also contribute to control of peachtree borer and lesser peachtree borer; see comment [17.3]. Only 1 application of Lorsban permitted per season on peaches and nectarines.

[10.2] *Pounce not labeled for American plum borer; *Baythroid, *Leverage, and *Pounce not labeled for peachtree borer. Rate of Baythroid XL 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.

14.3.2 Brown Marmorated Stink Bug - refer to section on Stink Bugs

14.3.3 Cottony Peach Scale, European Fruit Lecanium Scale, San Jose Scale

• Pesticide Application Notes

[11.1] Low rate of (§)oil during dormant period for European fruit lecanium, high rate for cottony peach scale.

[11.2] One application at completion of crawler hatch in mid-June, directed to leaf undersides, trunk, and scaffold limbs. Movento must be used with a horticultural mineral oil or nonionic spray adjuvant. Admire Pro labeled only for San Jose scale.

[10.3] Scorpion is suppression only.

14.3.4 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

[12.1] High rate of (§)oil during dormant period.

[12.2] Apply as mites appear in summer; use lower rate of Nexter for European red mite, higher rate for twospotted spider mite (see label). Acramite, Apollo, Envidor, Onager, and Savey limited to 1 application per season.

[12.3] Portal has a supplemental label for bearing stone fruit.

14.3.5 Green Peach Aphid

• Pesticide Application Notes

[13.1] Apply spray postbloom, before excessive leaf curling occurs. Do not apply Actara between the pre-bloom (swollen bud) and post bloom (petal fall) growth stages. Lannate not registered for nectarines. Movento must be used with a horticultural mineral oil or nonionic spray adjuvant.

For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Endigo, *Leverage and Voliam Flexi 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.

14.3.6 Japanese Beetle

• Biology & Cultural

[14.1] Adults emerge from the soil between early July and mid-August to feed on numerous trees and shrubs. In peach trees, beetles devour the tissue between the veins, leaving a lace-like skeleton, and also feed on the surface of the fruit. 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

[14.2] 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, Imidan, *Leverage, or Admire Pro; 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.

[14.3] Persons not covered by the Worker Protection Standard (WPS), such as members of the general public involved in “pick-your-own”, “U-pick” or similar operations, cannot enter a treated area for 14 days after application of Imidan.

14.3.7 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

[15.1] Up to 3 sprays may be needed: end of May (shuck split), 1st hatch (mid-late June: 360 DD43 after 1st trap catch), and 2 wk later. Best results obtained if materials are alternated by chemical class. Control with Entrust or Delegate may be improved by addition of an adjuvant. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Leverage, Tourismo 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.

14.3.8 Oriental Fruit Moth

• 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

[16.1] (§)Pheromone disruption is economically justified if 2-3 sprays are normally applied, and if no other

insecticide sprays are routinely needed for other pests after petal fall. For this reason, disruption may not be economical for the 1st brood. If chosen correctly, certain plum curculio sprays used at this time will also control oriental fruit moth. Pheromones should be applied in mid-June before initiation of the 2nd flight; the need for re-application depends on residual field life of specific formulations: Isomate-M 100 and §Checkmate OFM Dispenser, 90 days; Checkmate OFM Flowable, 30 days. Border insecticide sprays may be needed in orchards adjacent to sources of adult immigration or in other high pressure situations.

• Pesticide Application Notes

[16.2] Against adults, beginning at petal fall. Use 2 applications at a 10-14-day interval. Do not apply Actara between the pre-bloom (swollen bud) and post bloom (petal fall) growth stages. Actara should also control tarnished plant bug and plum curculio. Altacor, Belt, Intrepid and Tourismo will only control oriental fruit moth. Pyrethroids should also control plum curculio, lesser peachtree borer, and tarnished plant bug. Belay will only control plum curculio. Belay is not registered for nectarines in New England. Avaunt will provide suppression of oriental fruit moth and control of plum curculio. Sevin will not control lesser peachtree borer. Imidan, Avaunt and Delegate not registered for lesser peachtree borer.

[16.3] Summer sprays should be timed to start approximately at the 10% hatch point, 175-200 DD (base 45°F) after the first sustained adult catch of the second brood, with a second application in 10-14 days. In high pressure blocks, a final spray should be applied 2 wk before harvest to control late season larvae. Suggested action threshold: Avg. of >10 adults/week caught per pheromone trap.

[16.4] Persons not covered by the Worker Protection Standard (WPS), such as members of the general public involved in “pick-your-own”, “U-pick” or similar operations, cannot enter a treated area for 14 days after application of Imidan.

[16.5] For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Endigo, *Leverage, Tourismo, 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.

14.3.9 Peachtree Borers (Including 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

[17.1] Hang (§)pheromone ties at shucksplit before moth flight begins. Pruning should be done before hanging dispensers. Use Isomate PTB-Dual at a rate of 150 per acre. Use a higher rate (200-250/A) for outside edges of border blocks, areas that haven’t been disrupted before and have high populations, and in blocks smaller than 5 acres. Isomate PTB-Dual is effective on both Peachtree Borer and Lesser Peachtree Borer.

• Pesticide Application Notes

[17.2] Against adults, when first shucks start to split. Will also control plum curculio, oriental fruit moth, and tarnished plant bug. Altacor registered for oriental fruit moth only. Sevin will not control lesser peachtree borer. Imidan, Avaunt and Assail not registered for lesser peachtree borer. Belay will only control plum curculio. Belay is not registered on nectarines in new England.

[17.3] Up to 3 sprays of pyrethroids to trunk and scaffold limbs against larvae: June 1-10, July 7-15, and August 1-10. 1 application of Lorsban to trunk at any time from petal fall to August or post-harvest. Do not apply *Lorsban to fruit. Only 1 application of Lorsban permitted per season. *Baythroid, *Leverage and *Pounce not labeled for peachtree borer.

For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Leverage and *Voliam 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: 1st emergence of adults plus 8 days or 1-2 larvae or pupal cases/tree.

Note: Preplant dipping of roots and crowns of peach tree seedlings before planting has given complete control of the peachtree borer for the 1st growing season and has reduced borers during the 2nd season. The only product labeled for this use is Lorsban. See the labels for each Lorsban product for specific rates and instructions for Preplant Dip Application. SPECIAL PRECAUTIONS: Wear full PPE to avoid exposing skin to insecticide. Dispose of excess material with extreme care.

14.3.10 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 and Forecasting

Monitor for adults beginning at bloom using beating trays. Examine fruit, especially along border rows, beginning at shuck-split. Suggested threshold is 1-2 % new damage. Use degree day model to determine when immigration into orchard should be complete. This is at 308 DD (base 50^0) from apple petal fall.

• Pesticide Application Notes

[18.1] Against adults, when first shucks start to split; continue at 7- to 10-day intervals. Use 2-3 applications. Pyrethroids will also control oriental fruit moth, lesser peachtree borer, and tarnished plant bug.

Altacor registered for oriental fruit moth only. Belay is not registered for nectarines in New England.

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

[18.2] Frequent applications (7-10-day intervals) of §Surround and maximal coverage (minimum of 100 gal/A) are advised while there is active foliar growth. If fresh market stone fruit cannot be washed according to label instructions, discontinue Surround sprays when the fruit are approximately ¾ inch in diameter.

14.3.11 Spotted Wing Drosophila

• Biology & Cultural

[19.1] 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 and on the farmstand shelf. It is also a pest of berry fruit crops. Originally known from Japan, it has been found throughout New England since 2011. Refer to the reference materials list (17.4) at the end of this publication for fact sheets containing details on the biology and management of this species.

• Monitoring

[19.2] Vinegar-baited traps are not effective as an indicator of first emergence. There is a baited trap that is more effective: Standard Yeast Bait consisting of water+sugar+active dried yeast+unscented dishwasher soap. Inspect ripening fruit for larvae.

• Pesticide Application Notes

[19.3] Apply at first signs of adult activity when fruits are beginning to ripen. If repeated applications are necessary, rotate active ingredients to avoid promoting resistance in local populations. Pyganic can provide adult knockdown but has a very short residual of 0-2 days. Lannate not registered on nectarines.

[19.4]] Persons not covered by the Worker Protection Standard (WPS), such as members of the general public involved in “pick-your-own”, “U-pick” or similar operations, cannot enter a treated area for 14 days after application of Imidan.

[19.5] Venom supplemental label through August 2015.

14.3.12 Stink Bugs (including Brown Marmorated Stink Bug)

• Biology & Cultural

[20.1] A number of native stink bug species (Brown, Dusky and Green Stink Bugs) 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 egglaying.

The brown marmorated stink bug is an invasive species from Asia that was first documented in Allentown, PA in 2001. It has caused extensive damage to apple and peach crops in the Mid-Atlantic states in recent years. It has a wide host range and is more likely to reproduce in orchards as compared to native species. This insect has spread across a number of eastern US States, and now extends to the west coast as well. It was first documented in Connecticut in 2008. Although it can be found throughout Connecticut in and around structures, extensive monitoring efforts in 2011 - 2013 resulted in few detections in agricultural crops; however, reports of sightings have been increasing. Refer to the reference materials list (17.4) at the end of this publication for fact sheets containing details on the biology and management of brown marmorated stink bug.

• Pesticide Application Notes

[20.2] Apply at first signs of infestation; BMSB are very mobile pests, and may reinfest 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 Xpress and Voliam Flexi 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.

14.3.13 Tarnished Plant Bug

• 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. Satisfactory control requires adequate management of orchard weeds that attract tarnished plant bugs and act as alternate hosts. This includes broadleaved winter annuals and legumes in and around the orchard.

• Monitoring & Forecasting

[21.1] Most catfacing injury is caused before shuck split. Later season feeding generally results in only minor surface scarring.

[21.2] Apply spray as insects appear and if the action threshold is reached.. Suggested action threshold: At pink, 3 bleeding sites/tree; at petal fall, 3 bleeding sites/tree; or 1-2% of fruit with new injury.

• Pesticide Application Notes

[21.3] Do not apply Actara between the prebloom (swollen bud) and post bloom (petal fall) growth stages. Lannate and Belay not registered for nectarines. Actara will also control plum curculio. Do not apply *Leverage pre-bloom or during bloom when bees are actively foraging. 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.

14.3.14 Western Flower Thrips

• Biology & Cultural

Drought conditions and high temperatures may encourage damaging populations in nectarines, although it has not been a particular problem in New England. Adults move from alternate weed or crop hosts to fruit just prior to and during harvest, feed on the fruit surface in protected sites, such as in the stem end, the suture, under leaves and branches, and between fruit. Feeding results in silver stippling or patches; injury is particularly obvious on highly colored varieties.

• Pesticide Application Notes

[22.1] In orchards with severe infestations, a petal fall application may be warranted against thrips feeding in fruit clusters. Control using §Entrust or Delegate may be improved by addition of an adjuvant.

[22.2] An application after the first harvest may prevent subsequent losses; however, an additional application may be needed if pressure is severe. Control with §Entrust or Delegate may be improved by addition of an adjuvant.

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

14.4 Storage Rots

• Pesticide Application Notes

[23.1] A postharvest treatment with Scholar SC via dipping, 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 to 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.

14.5 Growth Regulation of Peaches and Nectarines

Table 14.5.1. Growth Regulator Uses in Peaches and Nectarines.

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

Refer to label for registration status before applying any pesticide to nectarines.

Timing	Product	Concentration	Rate of Formulated Product	Comments
Chemical Thinning				
50-80% Bloom	ATS (foliar nutrient)		4-6 gal/100 gal	Apply 100 gal/acre.
Preharvest Fruit Drop Control				
1-2 weeks before anticipated harvest	ReTain	132 ppm	333 g/acre (1 pouch)	Apply in sufficient water to ensure thorough but not excessive coverage. An organosilicone surfactant (12 oz/100 gal) should be used with ReTain.