

combination of active ingredients and modes of action contained in the product.

### 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 been found throughout southern New England. 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] Apply at first signs of adult activity. If repeated applications are necessary, rotate active ingredients to avoid promoting resistance in local populations. Delegate labeled for suppression only.

### 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. 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 NY in the Hudson Valley Region in 2008. Although it can be found throughout NY in and around structures and vehicles, extensive monitoring efforts in 2011 and 2012 resulted in very few detections in agricultural crops; however, reports of sightings have been increasing. 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] 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. \*Actara, \*Danitol, \*Lannate, and \*Vydate have FIFRA Section 2(ee) registrations for BMSB; the labeling must be in the possession of the user at the time of pesticide application. Only 1 application of \*Vydate allowed per season. 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.

### Tarnished Plant Bug, Pear Plant Bug

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**

[19.1] Recommended spray timing is from green cluster to white bud. For best effectiveness and insecticide resistance management, the use of pre-mixes such as \*Leverage or \*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: plant bugs—3 bleeding sites/tree, or a cumulative catch of 7 adults by white bud stage (white sticky-board trap). See [12.7].

## 12.3 Pear Spray Table

**Table 12.3.1. Pesticide Spray Table – Pears**

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

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
<b>Dormant</b>						
Fire blight/spur blight	Bordeaux mixture, 8-8-100					[2.3]
	(copper sulfate)	8 lb/100 gal		24	BL	
	(spray lime)	8 lb/100 gal				
	plus oil	1 qt/100 gal				

**Table 12.3.1. Pesticide Spray Table – Pears**

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Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comment (see text)
<b>Dormant (continued)</b>						
<b>Fire blight/spur blight</b> (continued)	OR C-O-C-S 8 lb	2-4 lb/100 gal		24	BL	
	OR Cuprofix Ultra 40 Disperss		7.5-10 lb./A pseudomonas/ 0.75 lb/acre fire blight	48	GT	
	OR Kocide 3000		5.25 – 7 lb/acre see comments	48	HIG	
	OR §Champ WG or other(§)coppers	see comments	8-16 lb./A	24	HIG	
<b>Pear psylla, European red mite</b>	(§)oil	3 gal/100 gal		12	0	[12.1]
<b>Pearleaf blister mite</b>	oil	1-1.5 gal/100 gal				[14.1]
	plus *Diazinon 50WP	1 lb/100 gal		96	21	
	OR oil	1-1.5 gal/100 gal				
	plus *Thionex 50WP or *Thionex 3EC	0.5-0.75 lb/100 gal 0.33/0.5 qt/100 gal	4 lb/acre 2.67 qt/acre	20 days 7 days	20 7	
<b>Swollen Bud</b>						
<b>Pear midge</b>	Aza-Direct 1.2L	see label	11.5-42 fl oz/A	4	0	[11.1]
	OR PyGanic 1.4EC	see label	16-64 fl oz/A	12	0	OR
<b>Pear psylla</b>	Actara 25WDG		5.5 oz/A	12	35	[12.2]
	OR *Agri-Mek 0.15EC	2.5-5.0 fl oz/100 gal		12	28	[12.5]
	OR *Calypso 4F	1-2 fl oz/100 gal		12	30	
	OR Delegate 25WG		6.0-7.0 oz./A	4	7	[12.5]
	OR Esteem 35WP		4-5 oz/A	12	45	[12.5]
	OR Movento 240SC		6-9 oz/acre	24	7	[12.5]
	OR Portal 0.4EC		2 pt/acre	12	14	[12.5]
	OR *Proaxis 0.5CS		2.6-5.1 fl oz/A	24	21	
	OR *Proclaim	0.8-1.2 oz/100	3.2-4.8 oz/A	12	14	
	OR Nexter 75WS		6.6-10.7 oz/A	12	7	
<i>Insecticide with “Fair” efficacy rating for pear psylla. Additional “Fair” options listed under Petal Fall –</i>						
	Ambush EC (or equivalent dose of Perm-Up, Pounce)		12.8-25.6 fl oz/A	12	Pre- bloom	
<b>Green Cluster</b>						
<b>Fabraea leaf spot</b>	Same materials as recommended for pear scab (except Fontelis and Merivon)					[1.2]
<b>Pear scab</b>	Topsin M WSB, 70WP	4 oz./100 gal	1 lb	48	1	[3.2]
	or Thiophanate-methyl 85WDG	3.2 oz./100 gal		72	1	
	or T-Methyl 70W	0.25 lb	1 lb	48	1	
	or Vintage SCC	4 fl oz./100 gal				

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Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comment (see text)
<b>Green Cluster (continued)</b>						
<b>Pear scab</b> (continued)	or Procure 50WP	4 oz./100gal				
	or Inspire Super		8.5-12 fl oz	12	14	
	plus					
	Dithane/*Manzate/ Penncozeb 75DF	1 lb/100 gal		24	BL, 77 (A)	[3.3]
	OR Dithane/*Manzate/ Penncozeb 75DF	1-2 lb/100 gal		24	BL, 77 (A)	[3.3]
	OR Syllit		3 pt	48	7	
	OR Tebuzol 45DF	2 oz	4-8 oz	120	75	
	OR Ziram 76DF	1.5-2 lb/100 gal		48	14	
	OR Adament 50WG		4-5 oz	12	75	
OR Fontelis		14 to 20 fl oz	12	28		
OR Merivon		4.5 to 5 fl oz	12	0		
<b>Pear Midge</b>	§Aza-Direct 1.2L	see label	11.5-42 fl oz/A	4	0	[11.1]
	OR §PyGanic 1.4EC	see label	16-64 fl oz/A	12	0	
<b>Tarnished plant bug, plant bug</b>	*Asana XL 0.66EC	2-5.8 oz/100 gal		12	28	[19.1]
	OR *Baythroid XL 1E		2.0-2.4 fl oz/A	12	7	
	OR Beleaf 50SG		2.0-2.8 oz/A	12	21	
	OR *Brigade 10WS		6.4-32 oz/A	12	14	
	OR *Danitol 2.4EC		16-21.3 fl oz/A	24	14	
	OR *Guthion 50WS	0.5-0.75 lb/100 gal		14 days (E)	14-21(A)	
	OR *Pounce 3.2E		8-16 fl oz/A	12	PB	
	OR *Proaxis 0.5CS		2.6-5.1 fl oz/A	24	21	
	OR *Warrior II 2.08 CS		1.28-2.56 fl oz/A	24	21	
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						
	*Leverage 360	see label	2.4-2.8 fl oz/A	12	7	
	OR *Voliam Xpress	see label	6-12 fl oz/A	24	21	
<b>White Bud</b>						
<b>Fabraea leaf spot</b>	See Green Cluster sprays					
<b>Pear scab</b>	Choose from materials listed under Green Cluster					
	OR Flint 50WG	0.67-0.8 oz/100 gal		12	14	[3.4]
	OR Sovran 50WG	1.0-1.6 oz/100 gal		12	30	
<b>Pear psylla</b>	See Swollen Bud sprays					
	OR Centaur	--	34.5 to 46 oz	12	14	[12.2], [12.4]
<b>Bloom</b>						
<b>Fire blight</b>	§Agri-mycin 17WP or Streptrol 17WP	0.5 lb/100 gal	24 oz./A	12	30	[2.1], [2.8]

Table continued on next page.

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

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comment (see text)	
<b>Bloom (continued)</b>							
<b>Fire blight</b> (continued)	or Firewall 17WP						
	OR §Agri-mycin 17WP or Streptrol 17WP or Firewall 17WP	0.25 lb/100 gal		12	30	[2.1], [2.8]	
	<i>plus</i> Glycerine (CP or USP grade) or Regulaid	2 qt/100 gal 0.25 pt/100 gal					
	OR Mycoshield	1.0 lb		12	60	[2.6]	
	OR §Serenade ASO		2-6 qt	4	0	[2.7]	
	OR §Bloomtime Biological FD			150 g	4	PF	[2.5]
	<b>Pear scab, Fabraea leaf spot</b>	Choose from materials listed previously					
<b>Petal Fall</b>							
<b>Pear scab, Fabraea leaf spot</b>	Choose from materials listed previously						
	OR Vintage SC	2-4 fl oz/100 gal	6-12 oz/A	24	30	[3.5]	
	<i>plus</i> Manzate/ Penncozeb 75DF	1 lb/100 gal		24	BL/77(A)	[3.3]	
	OR Syllit		3 pt	48	7		
	<i>plus</i> Manzate/ Penncozeb 75DF	1 lb/100 gal		24	BL/77(A)	[3.3]	
	OR Pristine 38WG		14.5-18.5 oz/A	12	0		
	OR Ziram 76DF	24-32 oz/100 gal		48	14		
<b>Fire blight</b>	Agrimycin 17WP, or Streptrol 17WP, or Firewall 17WP	8 oz/100 gal	24oz/A	12	30	[2.1], [2.8]	
	OR §Agrimycin 17WP, or Streptrol 17WP, or Firewall 17WP	8 oz/100 gal	24oz/A	12	30	[2.1], [2.8]	
	<i>plus</i> Glycerine (CP or USP grade) or Regulaid	2 qt/100 gal 1 pt/100 gal					
<b>Aphids, including spirea aphid</b>	Assail 30SG		2.5-4.0 oz/A	12	7		
	OR *Admire Pro 4.6SC	See label	2.8 fl oz	12	7		
	OR §Aza-Direct 1.2L		16-32 fl oz/A	4	0		
	OR Beleaf 50SG		2.0-2.8 oz/A	12	21		
	OR Calypso 4F	1-2 fl oz/100 gal		12	30	[5.2]	
	OR *Dimethoate 4EC	0.5 pt/100 gal		240	28		
	OR §M-Pede 49L	1-2 gal/100gal		12	0		
	OR Movento 240SC		6-9 oz/acre	24	7	[5.1]	

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<b>Petal Fall (continued)</b>						
<b>Aphids, including spirea aphid (continued)</b>	The following pre-mix products are also labeled for use against these pests; 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					
	*Agri-Flex SC	1.5-2.0 fl oz/100 gal	5.5-8.5 fl oz/A	12	35	[7.3]
	<i>plus</i> Horticultural spray oil	1 qt/100 gal				
	OR *Voliam Flexi WDG	see label	7 oz/A	12	35	
	Leverage 360	See label	2.4-2.8 fl oz/acre	12	7	
<b>Codling moth</b>	Pheromone disruption: Checkmate CM-F					
			2.4-4.8 oz/acre	12	7	[6.2]
<b>Comstock mealybug</b>	Actara 25WDG		4.5-5.5 oz/A	12	35	[7.3]
	OR Assail 30SG		4.0-4.8 oz/A	12	7	
	OR Calypso 4F	1-2 fl oz/100 gal		12	30	
	OR *Centaur		34.5-46 oz/acre	12	14	[12.5]
	OR *Diazinon 50WP	1 lb/100 gal		96	21	
	OR Movento 240SC		6-9 oz/acre	24	7	
	OR Portal 0.4EC		2 pt/acre	12	14	
	OR Admire Pro 4.6SC	see label	7 fl oz/A	12	7	[7.1]
	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.					
	*Agri-Flex SC	1.5-2.0 fl oz/100 gal	5.5-8.5 fl oz/A	12	35	[7.3]
<i>plus</i> Horticultural spray oil	1 qt/100 gal	1 gal/A				
OR *Voliam Flexi WDG	see label	7 oz/A	12	35		
<b>Green fruitworms</b>	Altacor 35WDG		2.5-4 oz/acre	4	5	[9.1]
	OR *Asana XL 0.66EC	2-5.8 fl oz/100 gal		12	28	[9.1]
	OR *Assail 30SG		4.0-8.0 oz/A	12	7	
	OR Baythroid XL 1E		1.4-2.0 fl oz/A	12	7	
	OR Belt 4SC	See label	3-5 fl oz/A	12	14	
	OR *Lannate 2.4L	0.75 pt/100 gal		48-96(E)	7	
	OR *Proaxis 0.5CS		2.6-5.1 fl oz/A	24	21	
	OR *Proclaim 5SG	0.8-1.2 oz/100 gal		12	14	
	OR *Thionex 50WP	1 lb/100		20 days	20	
	or Thionex 3EC	21.3 oz/100 gal		7 days	7	
OR *Warrior 1CS		2.6-5.1 fl oz/A	24	21		
or *Warrior II 2.08 CS		1.28-2.56 fl oz/A	24	21		
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 present are appropriately matched to the combination of active ingredients and modes of action contained in the product.						

Table continued on next page.

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Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comment (see text)
<b>Petal Fall (continued)</b>						
<b>Green fruitworms (continued)</b>	*Endigo ZC	See label	5-6 fl oz/acre	24	35	
	OR *Leverage 60	See label	2.4-2.8 fl oz/acre	12	7	
	OR *Voliam Flexi WDG	see label	4-7 oz/A	12	35	
	OR *Voliam Express	See label	6-12 flo oz/acre	24	21	
	OR Tourismo		15 to 17 fl oz	12	14	
<b>Pear psylla</b>	Actara 25WDG		5.5 oz/A	12	35	[12.5]
	OR Admire Pro 4.6CS	See label	7 fl oz/acre	12	7	
	OR *Agri-Mek *SC	25.0 fl oz/100 gal	2.25-4.25 fl oz/acre	12	28	[12.5]
	OR *Calypso 4F	1-2 fl oz/100 gal		12	30	
	OR Delegate 25WG		6.0-7.0 oz./A	4	7	[12.5]
	OR Esteem 35WP		4-5 oz/A	12	45	[12.5]
	OR Movento 240SC		6-9 oz/acre	24	7	[12.5]
	OR Portal 0.4EC		2 pt/acre	12	14	[12.5]
	OR *Proaxis 0.5CS		2.6-5.1 fl oz/A	24	21	
	OR *Proclaim	0.8-1.2 oz/100	3.2-4.8 oz/A	12	14	
OR Nexter 75WS		6.6-10.7 oz/A	12	7		
<i>Insecticides with “Fair” efficacy rating for pear psylla –</i>						
	Assail 30SG		4.0-8.0 oz/A	12	7	
	OR *Asana XL 0.66EC	2.0-5.8 fl oz/100 gal		12	28	
	OR *Baythroid XL 1E		2.4-2.8 fl oz/A	12	7	
	OR Belay	1.5-3 oz/100 gal	6-12 oz/A	12	7	
	OR *Brigade 10WSB or *Brigade 2EC		6.4-32 oz/A 2.6-12.8 fl oz/A	12 12	14 14	
	OR *Centaur		34.5-46 oz/acre	12	14	
	OR *Clutch	1.0-1.5 oz/100 gal	4-6 oz/acre	12	7	
	OR *Danitol 2.4EC		16-21.3 fl oz/A	24	14	
	OR *Leverage 2.7SE or *Leverage 360	see label see label	3.6-4.4 fl oz/A 2.4-2.8 fl oz/A	12 12	7 7	
	OR §M-Pede 49L	1-2 gal/100 gal		12	0	
	OR §summer oil	1.5-2 gal/100 gal		4	0	
	OR §Surround 95WP		50 lb/A	4	0	
	OR Tourismo		12-17 fl oz/A	12	14	
	OR *Warrior		2.6-5.1 fl oz/A	24	21	
	OR *Warrior II		1.3-2.5 fl oz/A	24	21	[12.2]
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.						
	*Agri-Flex SC	1.5-2.0 fl oz/100 gal	5.5-8.5 fl oz/A	12	35	[12.5]
	plus Horticultural spray oil	1 qt/100 gal	1 gal/A			

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Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comment (see text)
<b>Petal Fall (continued)</b>						
Pear rust mite	*Agri-Mek 0.15EC	2.5-5.0 fl oz/100 gal		12	28	[13.1]
	OR Nexter 75WS	5.2-10.7 oz/A		12	7	
	OR Portal 0.4EC		2 pt/acre	12	14	[8.1]
	OR *Vendex 50WP	6-8 oz/100 gal		48	14	
Plum curculio	Actara 25WDG		4.5-5.5 oz/A	12	35	
	OR *Asana XL 0.66EC	2.0-5.8 fl oz/100 gal		12	28	
	OR *Baythroid XL 1E		2.4-2.8 fl oz/A	12	7	
	OR *Brigade 10WSB		6.4-32 oz/A	12	14	
	or Brigade 2EC		2.6-12.8 fl oz/A	12	14	
	OR *Guthion 50WS	0.5-0.75 lb/100 gal		14 days(E)	14-21(A)	
	OR Imidan 70WP	0.75-1 lb/100 gal		96	7	
	OR *Proaxis 0.5CS		2.6-5.1 fl oz/A	24	21	
	OR §Surround 95WP		50 lb/A	4	0	[12.6]
	OR *Warrior 1CS		2.6-5.1 fl oz/A	24	21	
or *Warrior II 2.08 CS		1.28-2.56 fl oz/A	24	21		
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 present are appropriately matched to the combination of active ingredients and modes of action contained in the product.						
	*Agri-Flex SC	1.5-2.0 fl oz/100 gal	5.5-8.5 fl oz/A	12	35	[15.1]
	<i>plus</i>					
	Horticultural spray oil	1 qt/100 gal	1 gal/A			
OR	*Leverage 360	See label	2.4-2.8 fl oz/acre	12	7	
OR	*Voliam Flexi WDG	see label	6-7 oz/A	12	35	
OR	*Voliam Express	See label	6-12 oz/acre	24	21	
Obliquebanded leafroller	Altacor 35WDG	see label	2.5-4.5 oz/A	4	5	
	OR Belt 4SC	See label	3-5 fl oz/acre	12	14	
	OR Biobit XL 2.1FC		1.5-5.5 pt/A	4	0	
	OR Delegate 25WG		4.5-7.0 oz/A	4	7	
	OR §Deliver 18WG		0.5-2 lb/A	4	0	
	OR §Dipel 10.3DF		0.5-2 lb/A	4	0	
	OR Entrust 80WP	0.67-1.0 oz/100 gal	2-3 oz/A	4	7	
	or Entrust 2SC	see label	6-10 fl oz/A			
	OR Intrepid 2F		8-16 fl oz/A	4	14	
	OR Javelin 7.5 WDG		0.5-4 lb/A	4	0	
	OR *Lannate 2.4L	0.75 pt/100 gal		48-96(E)	7	
	or *Lannate 90SP	0.25 lb/100 gal				
	OR *Proclaim 5SG	0.8-1.2 oz/100 gal		12 or 48	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 present are appropriately matched to the combination of active ingredients and modes of action contained in the product.

Table continued on next page.

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Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comment (see text)
<b>Obliquebanded leafroller</b> (continued)	OR *Endigo ZC	see label	5-6 fl oz/acre	24	35	
	OR *Voliam Flexi WDG	see label	4-7 oz/A	12	35	
	OR *Voliam Xpress	see label	6-12 fl oz/acre	2	21	
	OR Tourismo		15 to 17 fl oz	12	14	
<b>Additional Summer Sprays</b>						
<b>Fire blight (ONLY after a hailstorm)</b>	§Agri-mycin 17WP or Streptrol 17WP or Firewall 17WP	0.5 lb/100 gal		12	30	[2.4]
<b>Pear scab, Fabraea leaf spot, Sooty blotch, Black rot</b>	Topsin M 70WSB	4 oz/100 gal		72	1	
	OR Thiophanate-methyl 85WDG	3.2oz/100 gal		72	1	
	plus: Dithane/*Manzate/Penncozeb as listed for pear scab under Green Cluster			24	BL/77 (A)	[3.6]
	OR Vintage SC	3 fl oz/100 gal		24	30	
	plus: Dithane/*Manzate/Penncozeb 75DF	1 lb/100 gal		24	BL/77 (A)	[2.4]
	OR Syllit		3 pt	48	7	
	plus: Dithane/*Manzate/Penncozeb 75DF	1 lb/100 gal		24	BL/77 (A)	[2.4]
	OR Flint 50WG	0.67-0.8 oz/100 gal		12	14	[3.4]
	OR Sovran 50WG	1.0-1.6 oz/100 gal		12	30	
	OR Pristine 38WG		14.5-18.5 oz/A	12	0	
	OR Ziram 76DF	1.5-2 lb/100 gal		48	14	
	OR Fontelis (scab only)		14 to 20 fl oz	12	28	
	OR Merivon (scab only)		4.5 to 5 fl oz	12	0	
	<b>Codling moth</b>	Altacor 35WDG	see label	2.5-4.5 oz/A	4	5
OR Assail 30SG			4.0-8.0 oz/A	12	7	[6.1]
OR Avaunt 30WDG		See label	5-6 oz/acre	12	28	
OR *Baythroid XL 1E			2.0-2.4 fl oz/A	12	7	
OR §Biobit XL 2.1FC			1.5-5.5 pt/A	4	0	
OR *Calypso 4F		1-2 fl oz/100 gal		12	30	
OR §Carpovirusine 0.99SC		0.5-1 pt/100 gal		4	0	
OR §Cyd-X 0.06SC		1-6 fl oz/A	1-6 fl oz/A	4	0	
OR *Danitol 2.4EC		16-21.3 fl oz/A	16-21.3 fl oz/A	24	14	
OR Delegate 25WG		4.5-7.0 oz/A	4.5-7.0 oz/A	4	7	
OR §Deliver 18WG		0.5-2 lb/A	0.5-2 lb/A	4	0	
OR §Dipel 10.3DF		0.5-2 lb/A		4	0	
OR §Entrust 80WP or §Entrust 2SC		0.67-1.0 oz/100 gal see label	6-10 fl oz/A	4	7	
OR *Guthion 50WS		0.5-0.75 lb/100 gal		14 days (E)	14-21 (A)	



**Table 12.3.1. Pesticide Spray Table – Pears**

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

<b>Pest</b>	<b>Product</b>	<b>Amt/100 gal</b>	<b>Amt/A</b>	<b>REI (hrs)</b>	<b>PHI (days)</b>	<b>Comment (see text)</b>
<b>Additional Summer Sprays (continued)</b>						
<b>Codling moth</b> <i>(continued)</i>	<i>OR</i> Imidan 70WP	0.75-1 lb/100 gal		96	7	
	<i>OR</i> §Javelin 7.5WDG		0.5-4 lb/A	4	0	
	<i>OR</i> *Leverage 2.7SE		3.6-4.4 fl oz/A	12	7	
	or *Leverage 360		2.4-2.8 fl oz/acre	12	7	
	<i>OR</i> §Virosoft PC4	See label	2-3.2 fl oz/acre	4	0	
	<i>OR</i> (§)Pheromone disruption: Checkmate CM-F		2.4-4.8 fl oz/acre	4	0	
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.						
	<i>OR</i> *Endigo ZC	see label	5-6 fl oz/A	24	35	
	<i>OR</i> *Leverage 360	see label	2.4-2.8 fl oz/A	12	7	
	<i>OR</i> *Voliam Flexi WDG	see label	4-7 oz/A	12	35	
	<i>OR</i> *Voliam Xpress	see label	6-12 fl oz/A	24	21	
	<i>OR</i> Tourismo		15 to 17 fl oz	12	14	
<b>Comstock mealybug</b>	Actara 25WDG		4.5-5.5 oz/A	12	35	[7.1, 7.2]
	<i>OR</i> *Admire Pro 4.6SC	see label	7.0 fl oz/A	12	7	
	<i>OR</i> Assail 30SG		4.0-8.0 oz/A	12	7	
	<i>OR</i> *Calypso 4F	1-2 fl oz/100 gal		12	30	
	<i>OR</i> *Centaur		34.5-46 oz/acre	12	14	[12.5]
	<i>OR</i> *Diazinon 50WP	1 lb/100 gal		96	21	
	<i>OR</i> Movento 240SC	see label	6-9 fl oz/A	24	7	
	<i>OR</i> Portal 0.4EC	see label	2 pt/A	12	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.						
	*Agri-Flex SC	1.5-2.0 fl oz/100 gal	5.5-8.5 fl oz/A	12	35	[7.3]
	<i>plus:</i> Horticultural spray oil	1 qt/100 gal	1 gal/A			
	<i>OR</i> *Voliam Flexi WDG	see label	7 oz/A	12	35	
<b>European red mite, Twospotted spider mite, Pear rust mite</b>	*Agri-Mek 8SC	0.5-1 fl oz/100 gal	2.25-4.25 fl oz/A	12	28	[8.1], [13.1]
	<i>OR</i> Apollo 4SC		4-8 oz/A	12	21	
	<i>OR</i> *Brigade 10WSB		12.8-32 oz/A	12	14	
	or *Brigade 2EC		5.12-12.8 fl oz/acre			
	<i>OR</i> Envirdor 2SC		16-18 fl oz/A	12	7	
	<i>OR</i> Portal 5EC		2 pt/A	12	14	
	<i>OR</i> Kanemite 15SC		21-31 fl oz/A	12	14	
	<i>OR</i> Nexter 75WS		4.4-10.7 oz/A	12	7	
	<i>OR</i> Onager 1EC		12-24 fl oz/A	12	28	

*Table continued on next page.*

**Table 12.3.1. Pesticide Spray Table – Pears**

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

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comment (see text)
<b>Additional Summer Sprays (continued)</b>						
<b>European red mite,</b>	OR Portal 0.4EC	see label	2 pt/A	12	14	
	OR Savey 50DF		3-6 oz/A	12	28	
<b>Twospotted spider mite,</b>	OR *Vendex 50WP	6-8 oz/100 gal		48	14	
	OR Zeal 72WS		2-3 oz/A	12	14	
<b>Pear rust mite (continued)</b>	The following pre-mix product is also labeled for use against these pests; 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.					
	*Agri-Flex SC	1.5-2.0 fl oz/100 gal	5.5-8.5 fl oz/A	12	35	[8.1]
	<i>plus:</i>					
	Horticultural spray oil	1 qt/100 gal	1 gal/A			
<b>Obliquebanded leafroller</b>	§Agree WG 3.8WS		1-2 lb/A	4	0	[10.2]
	OR Altacor 35WDG	see label	2.5-4.5 oz/A	4	5	
	OR *Baythroid XL 1E		2.4-2.8 fl oz/A	12	7	
	OR *Belt 4SC	see label	3-5 fl oz/A	12	14	
	OR §Biobit XL 2.1FC		1.5-5.5 pt/A	4	0	
	OR Delegate 25WG		4.5-7.0 oz/A	4	7	
	OR §Deliver 18WG		0.5-2 lb/A	4	0	
	OR §Dipel 10.3DF		0.5-2 lb/A	4	0	
	OR §Entrust 80WP	0.67-1.0 oz/100 gal		4	7	
	OR or §Entrust 2SC	see label	6-10 fl oz/A			
	OR Intrepid 2F		8-16 fl oz/A	4	0	
	OR §Javelin 7.5WDG		0.5-4 lb/A	4	0	
	OR *Lannate 2.4L	0.75 pt/100 gal		48-96(E)	7	
	OR or *Lannate 90SP	0.25 lb/100 gal				
	OR *Proclaim 5SG	0.8-1.2 oz/100 gal		12	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 present are appropriately matched to the combination of active ingredients and modes of action contained in the product.					
	*Endigo ZC	see label	5-6 fl oz/A	24	35	
OR	*Leverage 360	see label	2.4-2.8 fl oz/A	12	7	
OR	*Voliam Flexi WDG	see label	4-7 oz/A	12	35	
OR	*Voliam Xpress	see label	6-12 fl oz/A	24	21	
OR	Tourismo		15 to 17 fl oz	12	14	
<b>Pear psylla</b>	Choose from materials listed under Petal Fall, except for Esteem					[12.5]
<b>Pearleaf blister mite</b>	Sevin XLR Plus, 4F		1.5-3 qt/A	12	3	[14.2]
	or Sevin 80S, *80WS		1.88-3.75 lb/A			
	OR oil	1-1.5 gal/100 gal				
	<i>plus:</i>					
	*Diazinon 50WP	1 lb/100 gal		96	21	
OR	oil	1-1.5 gal/100 gal				

**Table 12.3.1. Pesticide Spray Table – Pears**

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

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comment (see text)
<b>Additional Summer Sprays (continued)</b>						
<b>Pearleaf blister mite (continued)</b>	<i>plus:</i>					
	*Thionex 50WP	0.5-0.75 lb/100 gal	4 lb/acre	20 days	20	
	or *Thionex 3EC	0.33-0.5 qt/100gal	2.67 qt/acre	7 days	7	
<b>Redbanded leafroller</b>	§Agree WG 3.8WS		1-2 lb/A	4	0	[16.1]
	OR *Altacor 35WDG		2.5-4.5 oz	4	5	
	OR *Baythroid XL 1E		2.4-2.8 fl oz/A	12	7	
	OR *Belt 4SC	see label	3-5 fl oz/A	12	14	
	OR §Biobit XL 2.1FC		1.5-5.5 pt/A	4	0	
	OR Delegate 25WG		4.5-7.0 oz/A	4	7	
	OR §Deliver 18WG		0.5-2 lb/A	4	0	
	OR §Dipel 10.3DF		0.5-2 lb/A	4	0	
	OR *Guthion 50WS	0.5-0.75 lb/100 gal		14 days (E)	14-21 (A)	
	OR Imidan 70WP	0.75-1 lb/100 gal		96	7	
	OR §Javelin 7.5WDG		0.5-4 lb/A	4	0	
	OR *Proclaim 5SG	0.8-1.2 oz/100 gal		12	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 present are appropriately matched to the combination of active ingredients and modes of action contained in the product.						
	*Leverage 360	see label	2.4-2.8 fl oz/A	12	7	
	OR *Voliam Xpress		6-12 oz	24	21	
	OR Tourismo		15 to 17 fl oz	12	14	
<b>Spotted wing Drosophila</b>	Delegate 25WG	see label	4.5-7 oz/A	4	7	
	OR §Entrust 80WP	see label	1.5-3 oz/A	4	7	
	or §Entrust 2SC	see label	4-10 fl oz/A			
	OR *Imidan 70WS	0.75-1 lb/100 gal	2.13-5.75 lb/A	96	7	
<b>Stink bugs, including Brown marmorated stink bug</b>	*Actara 25WDG	see label	4.5-5.5 oz/A	12	35	
	OR *Asana XL 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	21	
	OR *Baythroid XL 1EC	see label	2-2.4 fl oz/A	12	7	
	OR *Brigade 2EC	see label	2.6-12.8 fl oz/A	12	14	
	or *Brigade 10WSB	see label	6.4-32 oz/A	12	14	
	OR *Danitol 2.4EC	see label	10.7-21.3 fl oz/A	24	14	
	OR *Lannate 2.4LV	see label	2.25 pt/A	96	7	
	or *Lannate 90SP	see label	0.75 lb/A	96	7	
	OR *Proaxis 0.5CS	see label	2.6-5.1 fl oz/A	24	21	
	OR §Surround 95WP	see label	25-50 lb/A	4	0	
	OR *Vydate 2L	see label	1.5-3 pt/A	48	14	
	OR *Warrior 1CS	see label	2.6-5.1 fl oz/A	24	21	
or *Warrior II 2.08CS	see label	1.28-2.56 fl oz/A	24	21		

*Table continued on next page.*

**Table 12.3.1. Pesticide Spray Table – Pears**

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

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comment (see text)
<b>Additional Summer Sprays (continued)</b>						
<b>Stink bugs, including Brown marmorated stink bug (continued)</b>	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 present are appropriately matched to the combination of active ingredients and modes of action contained in the product.					
	*Endigo ZC	see label	5-6 fl oz/A	24	35	
	OR *Leverage 360	see label	2.4-2.8 fl oz/A	12	7	
	OR *Voliam Xpress	see label	6-12 fl oz/A	24	21	
	OR *Voliam Flexi WDG	see label	4-7 oz/A	12	35	

**Table 12.3.2. Growth Regulator Uses in Pears.**

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

Timing	Product	Concentration	Rate of Formulated Product
<b>Chemical Thinning</b>			
<b>Petal Fall to 5-7 days after petal fall</b>	Amid-Thin W	25-50 ppm	4-8 oz/100 gal
For thinning Bartlett and Bosc. Apply at petal fall or within 5-7 days after petal fall.			
<b>7-28 days after full bloom</b>	Fruitone-N or Fruitone-L	10-15 ppm	4-6 oz/100 gal
Directions for use on Bartlett and Bosc pears. NAA is more effective at early timings and should be applied as soon as fruit set is apparent for greatest success. Late applications may result in reduced fruit size. Do not apply when temperature is below 60°F or above 85°F. NAA will not usually adequately thin Bartlett, but the addition of a surfactant will improve thinning.			
<b>Fruit Size 8-14 mm(7-28 days after full bloom)</b> Maxcel, RiteWay 125-200 ppm 4-6 oz/100 gal			
Do not apply when temperature is below 60°F or above 85°F.			
<b>Induction of Lateral Branching in Young Trees</b>			
<b>1-2" of terminal shoot growth</b>	Promalin, Perlan, Typy	125-1000 ppm	0.25-2 pt/5 gal
Include a non-ionic surfactant and apply as a directed spray to areas where additional branching is desired. This practice is more effective in the second and third growing seasons after planting. Response on weak or low-vigor trees is usually disappointing. For nursery stock treat after trees have reached a terminal height at which lateral branching is desired.			
<b>Preharvest Fruit Drop Control</b>			
<b>1-2 weeks before anticipated harvest</b>	ReTain		0.74 lb/acre or 333 g/acre or (1 pouch)
Apply in sufficient water to ensure thorough but not excessive coverage. An organosilicone surfactant (12 oz/100 gal) must be used with ReTain.			
<b>5-7 days before harvest</b>	Fruitone-N, Fruitone-L	10-15ppm	4-6 oz /100 gal
Apply 7 days before harvest on D'Anjou, Bosc, and Bartlett. Make separate sprays to early and late maturing varieties.			
* To convert ounces to grams multiply ounces by 28.3. To convert fluid ounces to milliliters multiply fluid ounces by 29.57.			