FIGURE 16.1.1

GROWTH STAGES IN PLUM AND PRUNE

1. Dormant
2. Swollen bud
3 Bud burst
4. Green cluster
5. White bud
6. Bloom
7. Petal fall
8. Fruit set

16 Plums and Prunes

16.1 Insecticides and Fungicides for Plums and Prunes

See Sections 16.2, 16.3, and 16.4 for comments related to this table.

Table 16.1.1 Pesticide Spray Table – Plums and Prunes.

Refer to inside back cover for key to abbreviations and footnotes

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Bud Burst						
European red mite, European lecanium scale, San Jose scale	(§)oil	2 gal/100 gal		12	0	[8.2],[14.1]
	Centaur		34.5 oz/A	12	14	
White Bud to Petal Fall						
Black knot	Bravo Ultrex 82.5 WDG 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	2.8-3.8 lb/A 3.1-4.1 pt/A	12 hr/ 7days (E)	SS	[1.1],[1.2] [1.3],[1.4]
	Topsin M 70WP/WSB or Topsin M 4.5F	5.3-8.0 oz/100 gal 6.7-10 fl oz/100 gal	1.0-1.5 lb/A 20-30 fl oz/A	48 48	1 1	[1.4]
Brown rot (blossom blight)	Bravo Weather Stik 6F or other chlorothalonil formulations (see labels)	1.0-1.4 pt/100 gal	3.1-4.1 pt/A	12 hr/ 7days (E)	SS	[2.1]
	Captan 50WP or Captan 80WDG or Captec 4L	2 lb/100 gal 1.25 lb/100 gal 1 qt/100 gal	6.0 lb/A 3.75 lb/A 3 qt/A	24 24 24	0 0 0	[2.2]
	Echo 720 6F or Echo 90DF	1.0-1.4 pt/100 gal 0.75-1.2 lb/100 gal	3.1-4.1 pt/A 2.25-3.5 lb/A	12hr/7 days (E)	SS	
	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]
	Inspire Super		16-20 fl oz/A	12	2	
	Merivon		4.0-6.7 fl oz/A	12	0	
	Meteor		1-2 pt/A	24	PF	
	Pristine 38WDG		10.5-14.5 oz/A	12	0	[2.4]
	Quash 50 WDG		2.5-3.5 oz/A	12	14	[2.6]
	Rally 40 WSP		2.5-6.0 oz/A	24	0	
	Scala 600SC		9.0-18.0 fl oz/A	12	2	
	Tilt 3.6EC		4.0 fl oz/A	12	0	[2.5]
	Sulfur 92WP	5-10 lb/100 gal		24	0	
	§Microthiol Disperss		10-20 lb/A	24	0	
Leaf spot	(See comments)					[1.4]
Shuck Split						
Brown rot, Black knot, Peach scab	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	2.8-3.8 lb/A 3.1-4.1 pt/A	12 hr/ 7days (E)	SS	[2.3],[3.1]
	Captan 50WP or Captec 4L	2 lb/100 gal 1 qt/100 gal	6.0 lb/A 3 qt/A	24 24	0 0	

Table 16.1.1 Pesticide Spray Table – Plums and Prunes.

Refer to inside back cover for key to abbreviations and footnotes

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Shuck Split (continued)						
Brown rot, Black knot, Peach scab *(continued)*	Topsin M 70WP/WSB	4 oz/100 gal		48	1	
	or Topsin M 4.5F	5 fl oz/100 gal		48	1	
	plus:					
	Captan 50WP	1.5 lb/100 gal		24	0	
	or Captec 4L	1.5 pt/100 gal		24	0	
	Fontelis 1.67		14-20 fl oz/A	12	0	
	Gem 500SC		1.9-3.8 oz/A	12	1	
	Inspire Super		16-20 fl oz/A	12	2	
	Merivon		4.0-6.7 fl oz/A	12	0	
	Quash 50WDG		2.5-3.5 oz/A	12	14	
European red mite, Twospotted spider mite	Acramite 50 WS		0.75-1.0 lb/A	12	3	[8.2]
	*Agri-Mek 0.15EC	2.5-5.0 fl oz/100 gal	10-20 fl oz/A	12	21	
	plus: oil					
	Envidor		16.0-18.0 fl oz/A	12	7	
	Nexter 75WS		4.4-10.7 oz/A	12	7	[8.2]
	Onager 1 EC		12-24 oz/A	12	7	
	Portal		2 pt/A	12	7	
	Savey 50DF		3.0-6.0 oz/A	12	28	
	*Vendex 50WP		1.0-2.0 lb/A	48	14	
Oriental fruit moth, Plum curculio	Actara		4.5-5.5 oz/A	12	14	[12.2]
	Altacor 35 WDG		3.0-4.5 oz/A	4	10	[11.2]
	*Asana 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14	
	Assail 30 SG		5.3-8.0 oz/A	12	7	
	Avaunt 30 WDG		5.0-6.0 oz/A	12	14	
	§Aza-Direct		1.0-2.0 pt/A	4	0	
	or Azatin XL 3L		10-21 fl oz/A	4	0	
	*Baythroid XL 1EC					
	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	
	Belt 4SC		3-4 fl oz/A	12	7	
	*Danitol 2.4EC		10.7-21.3 fl oz/A	24	3	
	Delegate 25WG		6.0-7.0 oz/A	4	7	[12.4]
	§Entrust 80WP	0.4-0.8 oz/100 gal	1.25-2.5 oz/A	4	7	
	Imidan 70W	0.75-1.0 lb/100 gal	2.1-4.25 lb/A	7-14 days	7	[12.5]
	Intrepid 2F		10.0-16.0 fl oz/A	4	7	[11.2]
	Sevin XLR Plus, 4F		2-3 qt/A	12	3	
	§Surround 95WP		25-50 lb/A	4	0	[12.3]
	(§)Pheromone disruption for OFM:					
	Checkmate OFM-F		1.3-2.9 fl oz/A			[11.1]
	or §Checkmate OFM Dispenser		100-200 dispensers/A			
	or Isomate-M 100		100 ties/A			

Table 16.1.1 Pesticide Spray Table – Plums and Prunes.

Refer to inside back cover for key to abbreviations and footnotes

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Shuck Split (continued)						
Oriental fruit moth, Plum curculio *(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 Flexi WDG		4.0-7.0 oz/A	12	14	
	*Voliam Xpress		6-12 fl oz/A	24	14	
Peachtree Borer, Lesser Peachtree Borer	(§)Pheromone disruption: Isomate PTB-Dual		150 ties/A			[10.1]
Additional Summer Sprays						
Black knot	Topsin M 70WSB/WP	5.3-8.0 oz/100 gal	1.0-1.5 lb/A	48	1	
	or Topsin M 4.5F	6.7-10 fl oz/100 gal	20-30 fl oz/A	48	1	
Brown rot	Captan 50WP	2.0 lb/100 gal	6.0 lb/A	24	0	[2.2]
	or Captec 4L	1 qt/100 gal	3 qt/A	24	0	
	Elevate 50WDG		1.5 lb/A	12	0	
	Fontelis 1.67		14-20 fl oz/A	12	0	
	Indar 2F		6.0 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		2.5-3.5 oz/A	12	14	
	Rally 40 WSP		2.5-6.0 oz/A	24	0	
	Sulfur 92WP	5-10 lb/100 gal		24	0	
	§Microthiol Disperss		10-20 lb/A	24	0	
	Tilt 3.6EC		4.0 fl oz/A	12	0	[2.5]
Apple maggot	Imidan 70W	0.75-1.0 lb/100 gal	2.1-4.25 lb/A	7-14 days	7	[6.2],[12.5]
	*Voliam Xpress		6-12 fl oz/A	24	14	[6.2]
European red mite, Twospotted spider mite	Acramite 50WS		0.75-1.0 lb/A	12	3	[8.2]
	Envidor		16.0-18.0 fl oz/A	12	7	
	Nexter 75WS		4.4-10.7 oz/A	12	7	
	Onager 1 EC		12-24 fl oz/A	12	7	
	Portal		2.0 pt/A	12	365	[8.3]
	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	
Japanese beetle	Admire Pro		1.4-2.8 fl oz/A	12	7	[9.2]
	Assail 30 SG		5.3-8.0 oz/A	12	7	
	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	

Table 16.1.1 Pesticide Spray Table – Plums and Prunes.

Refer to inside back cover for key to abbreviations and footnotes

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Additional Summer Sprays (continued)						
Lecanium scale, San Jose scale	Admire Pro		1.4-2.8 fl oz/A	12	7	[7.1],[14.2]
	Centaur 0.7WDG		34.5 oz/A	12	14	
	Esteem 35WP		4.0-5.0 oz/A	12	14	[14.2]
	Movento 240SC		6.0-9.0 fl oz/A	24	7	
Lesser peachtree borer, Peachtree borer, American plum borer	*Asana 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14	[10.2]
	*Baythroid XL 1EC					
	for lesser peachtree borer:		1.4-2.0 fl oz/A	12	7	
	for American plum borer:		2.4-2.8 fl oz/A	12	7	
	(§)Pheromone disruption:					
	Isomate PTB-Dual		150 ties/A			[10.1]
	*Proaxis 0.5CS		2.6-5.1 fl oz/A	24	14	
	*Warrior II		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, 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 Xpress		6-12 fl oz/A	24	14	[10.2]
Oriental fruit moth	(§)Pheromone disruption:					[11.1]
	or Checkmate OFM-F		1.32-2.93 fl oz/A			
	or §Checkmate OFM dispensers		100-200 dispensers/A			
	or Isomate-M 100		100 ties/A			
	Altacor 35 WDG		3.0-4.5 oz/A	4	10	[11.2]
	*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	
	Avaunt 30 WDG		6.0 oz/A	12	14	
	*Baythroid XL 1EC		2.0-2.4 fl oz/A	12	7	
	Belt 4SC		3-4 fl oz/A	12	7	
	*Danitol 2.4EC		10.7-21.3 fl oz/A	24	3	
	Delegate 25 WG		6.0-7.0 oz/A	4	7	
	§Entrust 80WP	0.4-0.8 oz/100 gal	1.25-2.5 oz/A	4	7	
	Imidan 70W	0.75-1.0 lb/100 gal	2.1-4.25 lb/A	7 -14 days	7	[12.5]
	Intrepid 2F		10.0-16.0 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		1.28-2.56 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, 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 Flexi WDG		4.0-7.0 oz/A	12	14	
	*Voliam Xpress		6-12 fl oz/A	24	14	
Redbanded leafroller	*Baythroid XL 1EC		2.4-2.8 fl oz/A	12	7	[12.1]
	Belt 4SC		3-4 fl oz/A	12	7	

Table 16.1.1 Pesticide Spray Table – Plums and Prunes.

Refer to inside back cover for key to abbreviations and footnotes

Pest	Product	Amt/100 gal	Amt/A	REI (hrs)	PHI (days)	Comments (see text)
Additional Summer Sprays (continued)						
Redbanded leafroller (*continued*)	*Danitol 2.4EC		10.7-21.3 fl oz/A	24	3	
	Delegate 25 WG		4.5-7.0 oz/A	4	7	
	§Entrust 80WP		1.25-2.5 oz/A	4	7	
	Imidan 70W	0.75-1.0 lb/100 gal	2.1-4.25 lb/A	7 -14 days	7	[12.5]
	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 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	
	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		12	7	
	*Baythroid XL 1 L		2.4-2.8fl oz/A	12	7	
	*Danitol 2.4EC		10.7-21.3 fl oz/A	24	3	
	Delegate 25WG		4.5-7 oz/A	4	7	[15.3]
	*Diazinon AG500	1 pt/100 gal		96	21	
	§Entrust 80WP		1.25-2.5 oz/A	4	7	[15.3]
	Imidan 70W	0.75 lb/100 gal	2.13 lb/A	7-14 days	7	[15.4]
	Mustang Max		4 oz./A	12	14	
	Pyganic		1 pt- 2 qt/A	12	0	[15.3]
	Sevin XLR Plus		2-3 qts/A	12	3	
	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 25WDG		4.5-5.5 oz/A	12	14	[16.2]
	Assail 30SG		5.3-8.0 oz/A	12	7	
	*Danitol 2.4EC		10.7-21.3 fl oz/A	24	3	[16.2]
	*Warrior 1I CS		1.28-2.56 fl oz/A	24	14	
	The following pre-mix products are also labeled for use against these pests; however, for best effectiveness and insecticide resistance management, their use should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.					
	*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	
Control of Storage Disorders						
Storage rots	Scholar SC	16-32 fl oz/100 gal				[17.1]

16.2 Diseases

16.2.1 Bacterial Spot (*Xanthomonas arboricola* pv. *pruni*)

• Biology & Cultural

Bacterial spot can be devastating to plums and prunes. Plum or prune varieties developed in drier climates and then grown in the more humid climate of New England are the most likely to be susceptible. 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 applied to manage bacterial blast are quite effective for controlling the bacterial spot populations, but also likely to induce phytotoxicity if one is not careful.

• Pesticide Application Notes

Unfortunately, there are no materials registered for bacterial spot on prunes and plums. Despite the effectiveness, do not make a dormant (§)copper application for bacterial spot. Copper applications to manage bacterial blast are still allowed whether or not the planting has bacterial spot.

16.2.2 Black Knot

• Biology & Cultural

[1.1] Fungicide sprays will be relatively ineffective in controlling black knot unless old knots are pruned and removed or burned, preferably before bud break. Make pruning cuts at least 6-8 inches below visible swellings. Destroy wild plum and cherry trees along fence rows, for these are major sources of black knot inoculum.

[1.2] The most important period for black knot sprays is from white bud through shuck split. Black knot infection periods require rain and are most likely at temperatures above 55° F; thus, 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

[1.3] Bravo is the most effective fungicide for black knot control. Topsin M is only moderately effective. Bravo is not labeled for use on plums after shuck split.

[1.4] If leaf spot has been a problem in previous years, include captan, sulfur, or Topsin M in each spray from petal fall until terminal growth stops. Pristine also controls leaf spot. A petal fall spray of Bravo is recommended if wet weather and inoculum availability favor black knot infection. This spray will also protect against early season brown rot infections of the green fruit.

[1.5] If black knot is present in the orchard or nearby, apply an appropriate fungicide in the first 2 cover sprays if weather conditions are favorable for infection (wet).

16.2.3 Brown Rot

• Biology & Cultural

[2.1] Blossom blight is most likely to be a problem when the weather is warm (above 60° F) and wet or when large numbers of fruit were not harvested the previous year. Blossom blight may also be a problem at lower temperatures if prolonged wetting periods occur. If these conditions do not occur, it is recommended that the white bud, bloom, and petal fall sprays be directed primarily at black knot. Bravo and Echo give superior control of black knot and will also control blossom blight.

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] Captan may cause injury on Stanley and Japanese-type plums if used repeatedly in early season sprays.

[2.3] Some plum cultivars are very susceptible to brown rot for the first few wk after setting; therefore, the shuck split and first cover sprays are important for control of this disease unless the weather is very dry. Do not apply Topsin M without captan.

[2.4] Spray intervals should be shortened during wet periods and the last 3 wk before harvest, because this is when fruit are most susceptible to infection. Pristine and Tilt are the best materials for brown rot control if high disease pressure develops near harvest, because of their partially systemic and antisporulant activities.

[2.5] Note the label warning that Tilt may affect the size and shape of "Stanley" plums.

[2.6] Do not apply Quash to "Stanley" type plums.

16.2.4 Peach Scab

• Biology & Cultural

Peach scab can infect Japanese plum fruit in southern New England if spring weather is warm and wet and no fungicides are applied at shuck split and first cover. The disease is more common following a year when spring frosts caused a crop failure, because trees grown for an entire summer without fungicides are more likely to carry peach scab infections the following year. Fungicides applied to control black knot are usually sufficient to control peach scab.

• Pesticide Application Notes

[3.1] Apply 2 or 3 sprays at 10-14-day intervals beginning at shuck split. Under light disease pressure, a single application of Bravo or Echo applied at shuck split may provide season-long control. Bravo and Echo cannot be applied after shuck split.

16.2.5 Perennial (cytospora, valsa) Canker

• Biology & Control

[4.1] Perennial canker can be serious on Japanese-type plums and some prune cultivars. Refer to the discussion on this disease under Peaches. Also, 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 disease.

16.2.6 Phytophthora Root and Crown Rots

• Biology & Control

[5.1] Although plum rootstocks are relatively resistant to these diseases, Japanese-type plums that are planted on peach rootstocks are at the same risk as peach and apricot trees. Refer to the section on this disease under Peaches.

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 disease.

16.3 Insects and Mites

16.3.1 Apple Maggot

• 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

[6.1] Suggested action threshold: 1 adult capture on yellow board or red sphere trap.

• Pesticide Application Notes

[6.2] Up to 3 sprays at 10-day intervals, beginning app. July 1 in southern New England. If Assail, Asana, Baythroid, Danitol or Warrior are used for other pests (e.g. oriental fruit moth, plum curculio), they should also control apple maggot.

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

16.3.2 Brown Marmorated Stink Bug – refer to section on Stink bugs

16.3.3 European Fruit Lecanium Scale

• Pesticide Application Notes

[7.1] 1 spray at the end of crawler hatch (mid-June), about 16-20 days after the 2nd plum curculio spray. Admire Pro not labeled for Lecanium scale.

16.3.4 European Red Mite, Twospotted Spider 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.

• Monitoring

[8.1] Suggested action thresholds:
Bud Burst – 10% of spurs with eggs
Shuck Split and later – 6 motile forms/leaf.

• Pesticide Application Notes

[8.2] Apply oil to overwintering eggs. Apply acaricides when mites first surpass threshold; do not apply Acramite, Envidor, Onager or Savey more than once; or Nexter or *Vendex more than 2 times per season. Use lower rate of Nexter for European red mite, higher rate for twospotted spider mite (see label).

[8.3] Portal Has a supplemental label for stone fruits.

16.3.5 Japanese Beetle

• Biology & Cultural

[9.1] Adults emerge from the soil between early July and mid-August to feed on numerous trees and shrubs. In plum 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 part of the day and prefer to feed on plants that are fully exposed to the sun.

• Pesticide Application Notes

[9.2] Although pheromone traps are available and can be hung 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 Admire Pro, Sevin, Assail, or *Leverage ; 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.

16.3.6 Lesser Peachtree Borer, Peachtree Borer, American Plum Borer

• Biology & Cultural

Refer to the reference materials list at the end of this publication for Fact Sheets containing details on the biology and management of these pests. American plum borer can be a problem particularly in orchards adjacent to other stone fruit plantings.

• Biological & Non-chemical Control

[10.1] Hang (§)pheromone ties at shuck split 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

[10.2] Up to 3 sprays of *Asana or *Warrior to trunk and scaffold limbs against larvae: June 1-10, July 7-15, and August 1-10. *Baythroid and *Leverage not labeled for peachtree borer.

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

Suggested action threshold: 1st emergence of adults plus 8 days or 1-2 larvae or pupal cases/tree.

16.3.7 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

[11.1] (§)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, as plum curculio sprays at this time normally would 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-F, 30 days. Insecticide sprays or a double rate of pheromones may be needed in border rows of orchards adjacent to sources of adult immigration or in other high pressure situations.

• Pesticide Application Notes

[11.2] Summer sprays should be timed to start approximately at the 10% hatch point, 175-200 DD (base 45°F) after the first 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. Avaunt will provide suppression only. Altacor will provide suppression only against plum curculio. Intrepid not effective on plum curculio.

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.

Suggested action threshold: Avg. of >10 adults/week caught per pheromone trap.

16.3.8 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°) from apple petal fall.

• Pesticide Application Notes

[12.1] Also effective against redbanded leafroller.

[12.2] Actara not effective on Oriental fruit moth. Do not apply Actara between the prebloom (swollen bud) and post bloom (petal fall) growth stages.

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

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

[12.4] Delegate is for plum curculio suppression only.

[12.5] Although the restricted entry interval (REI) is 7 days, hand harvesting is prohibited for 14 days after application. 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.

16.3.9 Redbanded Leafroller

• Biology & Cultural

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

• Monitoring

[13.1] Suggested action threshold: 10% infested terminals from petal fall to shucks off; 5% infested terminals in late August.

• Pesticide Application Notes

[13.2] Imidan applied as the 2nd plum curculio spray controls this pest. May also need a spray 3 wk before harvest.

For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Endigo and *Voliam Xpress should be reserved for those situations when the pest complex to be treated is appropriately matched to the combination of active ingredients and modes of action contained in the product.

16.3.10 Scales, including European Lecanium and San Jose Scale

• 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 San Jose scale.

• Pesticide Application Notes

[14.1] Apply (§)oil against overwintering stage.

[14.2] One application 4-6 weeks after shuck split against hatching crawlers. Movento must be used with a horticultural mineral oil or nonionic spray adjuvant.

16.3.11 Spotted Wing Drosophila

• Biology & Cultural

[15.1] 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

[15.2] 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

[15.3] 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.

[15.4] Although the restricted entry interval (REI) is 7 days, hand harvesting is prohibited for 14 days after application.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.

16.3.12 Stink Bugs (including Brown Marmorated Stink Bug)

• Biology & Cultural

[16.1] 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 stink bug 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

[16.2] 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. *Danitol has a FIFRA Section 2(ee) registration for BMSB; the labeling must be in the possession of the user at the time of pesticide application. 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.

16.4 Storage Rots

[17.1] 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 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.

16.5 Growth Regulation of Plums and Prunes

Table 16.5.1. Plant Growth Regulator Use in Plums and Prunes

Refer to inside back cover for key to abbreviations and footnotes.

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