



14 General Pest Management Considerations – Peaches and Nectarines

14.1 Diseases

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., Autumnnglo, 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 likelihood 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, Flameout 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, Flameout, FireLine) for resistance management. See 1.3 above. This approach also reduces phytotoxicity 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.

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. Only 2 applications of Rovral are allowed per year. Orbit, Indar, and Elite 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] Elite, Indar and Orbit 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 Elite, Indar, or Orbit be used if disease pressure is high.

• Pesticide Resistance

[2.8] For resistance management purposes, the SI fungicides (Indar, Elite, Orbit, Tebuzol, 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 or Pristine to break the string of preharvest SI fungicides applied to varieties with varied ripening or harvest dates.

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.

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.

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.

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.

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 (Elite, Indar, Orbit) also should provide control of powdery mildew.

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.

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 virginiana*) 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 recommended brush killers 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**

[9.3] Peach and nectarine trees with X-disease can be treated therapeutically by injecting trees with oxytetracycline (an antibiotic) in the fall after harvest. Oxytetracycline kills or suppresses the pathogen in the tree phloem and prolongs the life and productivity of infected trees. Infected trees usually require annual treatment to maintain disease suppression, but some trees recover completely after two successive years of treatment. Peach and nectarine trees in later stages of decline (i.e., X-disease symptoms throughout the canopy) will not recover and should not be treated. Oxytetracycline has not been proven effective for treating cherry trees. Oxytetracycline should only be applied to peach and nectarine trees that have symptoms of X-disease; it should never be applied to healthy trees or used as a preventive for X-disease.

14.2 Insects and Mites

American Plum Borer

- **Biology & Cultural**

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

- **Pesticide Application Notes**

[10.1] Apply spray against newly emerging adults, shortly after petal fall. 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 *Cytospora* 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.

[10.2] 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. Rate of *Leverage for lesser peachtree borer: 3.0-3.6 fl oz/A; for American plum borer: 4.4-5.1 fl oz/A. *Baythroid and *Leverage not labeled for peachtree borer. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Leverage 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.

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 an organosilicone or nonionic spray adjuvant.

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. Acramite, Savey and Apollo limited to 1 application per season.

[12.3] Portal can only be used on non-bearing trees.

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 an organosilicone or nonionic spray adjuvant.

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, *Leverage or Provado; repeated applications may be required. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Leverage 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.

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. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Leverage 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. The PHI for Delegate and Spintor is 14 days for peaches, 1 day for nectarines. The PHI for Entrust is 14 days for peaches and nectarines.

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, 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 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 and Intrepid will only control oriental fruit moth. Pyrethroids should also control plum curculio, lesser peachtree borer, and tarnished plant bug. Avaunt will provide suppression of oriental fruit moth and control of plum curculio. Sevin will not control lesser peachtree borer. Imidan and Avaunt 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 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.

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.

[17.3] 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 or *Thionex, from July 20 to Aug. 1 OR immediately after harvest, may be substituted for the 3rd spray; do not apply either material to fruit. Only 1 application of Lorsban permitted per season. *Baythroid not labeled for peachtree borer.

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.

Plum Curculio

• **Biology & Cultural**

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

• **Pesticide Application Notes**

[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.

[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.

Tarnished Plant Bug, Stink 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 this pest and act as alternate hosts.

• **Monitoring & Forecasting**

[19.1] Apply spray as insects appear. Do not apply Actara between the prebloom (swollen bud) and post bloom (petal fall) growth stages. Actara will also control plum curculio. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Leverage 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: At pink, 3 bleeding sites/tree or cumulative capture of 7 adults by late pink stage (white sticky-board trap); at petal fall, 3 bleeding sites/tree.

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

• **Pesticide Application Notes**

[19.3] At 10-day intervals as needed in July and August. For best effectiveness and insecticide resistance management, the use of pre-mixes such as *Leverage 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: 3 bleeding sites/tree.

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**

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

[20.2] An application after the first harvest may prevent subsequent losses; however, an additional application may be needed if pressure is severe. Control may be improved by addition of an adjuvant. The PHI for Delegate and Spintor is 14 days for peaches, 1 day for nectarines. The PHI for Entrust is 14 days for peaches and nectarines. 14.3 Peach and Nectarine Spray Table.

14.3 Storage Rots

• **Pesticide Application Notes**

[21.1] 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.

14.3 Peach and Nectarine Spray Table

Table 14.3.1. 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	Rate/100 gal	Rate/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]
	OR Kocide 2000		6-12 lb/A	24	21	
	OR Cuprofix Ultra 40D		5.0-7.5 lb/A	12	SS	
	OR 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-	SS	[3.1]
	or Bravo Weather Stik 6F	1.0-1.4 pt/100 gal	3.1-4.1 pt/A	7days (E)		
	or other chlorothalonil formulations (see labels)					
	OR §C-O-C-S	4 lb/100 gal	12-16 lb/A	24	PF	
	or other copper formulations; see labels					
	OR 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			
	OR Ferbam Granuflo	1.5 lb/100 gal	4.5 lb/A	24	21	
OR §Kocide 2000		6-12 lb/A	24	21		
OR Thiram Granuflo	1.2 lb/100 gal	3.5 lb/A	24	7		
OR 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]
Pink						
Brown rot (blossom blight)	Adament 50WG		4-8 oz/A	120	1	
	OR 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)					
	OR Captan 50WP	2 lb/100 gal	8 lb/A	24-96 (E)	0	
	or Captan 80WDG		2.5-5 lb/A	24	0	
	or Captec 4L	0.75-1 qt/100 gal		24	0	
OR 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				

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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	Rate/100 gal	Rate/A	REI (hrs)	PHI (days)	Comments (see text)	
Pink (continued)							
Brown rot (blossom blight) (continued)	OR Elevate 50WDG		1.5 lb/A	12	0		
	OR Elite 45WP	2 oz/100 gal	4-8 oz./A	12	0	[2.8]	
	OR Indar 2F		6 fl oz/A	12	0	[2.8]	
	OR Orbit 3.6EC		4 fl oz/A	12	0	[2.8]	
	OR Pristine 38 WDG		10.5-14.5 oz/A	12	0		
	OR Quash 50WDG		2.5-3.5 oz/A	12	14		
	OR Rally 40WSP	1.25-2 oz/100 gal	2.5-6 oz/A	24	0	[2.8]	
	OR Rovral 4F		1-2 pt/A	24	PF	[2.3]	
	OR Scala SC		9-18 fl oz/A	12	2		
	OR §Sulfur 92WP or other sulfur products	6-8 lb/100 gal See labels			24	0	
	OR Tebuzol 45 DF	2 oz/100 gal	4-8 oz/A	120	0	[2.8]	
	OR Thiram Granuflo	1.2 lb/100 gal	3.5 lb/A	24	7	[2.3]	
	OR 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		
	OR Vanguard 75WG		5-10 oz/A	12	BL		
	Tarnished plant bug	*Asana XL 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14	[19.1]
OR Assail 30SG			5.3-8.0 oz/A	12	7		
OR *Baythroid XL 1 EC			2.0-2.4 fl oz/A	12	7		
OR Beleaf 50 SG			2.0-2.8 oz/A	12	14		
OR *Pounce 25WP			6.4-16 oz/A	12	14		
OR *Proaxis 0.5 CS			2.6-5.1 fl oz/A	24	14		
OR *Warrior II 2.08 CS			1.3-2.5 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						
American plum borer, Peachtree borer, Lesser peachtree borer	*Baythroid XL 1EC		[see comment]	12	7	[10.2]	
	OR *Leverage 2.7SE		[see comment]	12	7	[10.2]	
	OR *Lorsban 4EC	3 qt/100 gal		96	14	[10.1]	
	OR Pheromone disruption ties: §Isomate PTB-Dual		150 ties/A			[17.1]	
Green peach aphid	Actara		3.0-4.0 oz/A	12	14	[13.1]	
	OR Assail 30SG		2.5-5.3 oz/A	12	7		
	OR Beleaf 50SG		2.0-2.8 oz/A	12	14		

Table 14.3.1. 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	Rate/100 gal	Rate/A	REI (hrs)	PHI (days)	Comments (see text)	
Petal Fall (continued)							
Green peach aphid (continued)	OR *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		
	OR Movento SC		6.0-9.0 fl oz/A	24	7	[13.1]	
	OR *Thionex 3EC	2/3 qt/100 gal	3.3 qt/A	48	30		
	or *Thionex 50WP	1 lb/100 gal	4-5 lb/A	96	30		
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	[19.1]	
Western flower thrips	Delegate 25 WG		4.5-7 oz/A	4	14		
	OR SpinTor 2SC		4- 6 fl oz/A	4	14		
	or §Entrust 80WP	0.4-0.8 oz/100 gal	1.25-2.5 oz/A	4	14		
Shuck Split							
Brown rot	Adament 50WG		4-8 oz/A	120	1	[2.6]	
	OR Bravo WeatherStik 6F	1.0-1.4 pt/100 gal	3.1-4.1 pt/A	12hr/7days(E)	SS		
	or other chlorothalonil formulations (see labels)						
	OR Captan 50WP	2 lb/100 gal	8 lb/A	24-96 (E)	0		
	or Captan 80 WDG						
				2.5 – 5 lb/A	24	0	
		or Captec 4L	0.75- 1 qt/100 gal		24	0	
	OR 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	12 hr/7 days(E)	SS	
)					
	OR Elevate 50WDG			1.5 lb/A	12	0	
	OR Indar 2F			6 fl oz/A	12	0	[2.8]
	OR Orbit 3.6EC			4 fl oz/A	12	0	[2.8]
	OR Pristine 38WDG			10.5–14.5 oz/A	12	0	
OR Quash 50 WDG			2.5-3.5 oz/A	12	14		
OR Rally 40WSP	1.25-2 oz/100 gal	2.5-6 oz/A	24	0	[2.8]		
OR §Sulfur 92WP	6-8 lb/100 gal		24	0	[2.6]		
or other sulfur products See labels							
OR Tebuzol 45 DF	2 oz/100 gal	4-8 oz/A	120	0	[2.8]		
OR Thiram Granuflo	1.2 lb/100 gal	3.5 lb/A	24	7			
OR Topsin M 70 WP, WSB	0.33-0.5 lb/100 gal	1-1.5 lb/A	48	1			
OR 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]	
	OR Flameout 17 WP	12 oz/100 gal		12	21		
	OR FireLine 17 WP	12 oz/100 gal		12	21		
	OR copper products	See comments				[1.4]	

Table 14.3.1. 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	Rate/100 gal	Rate/A	REI (hrs)	PHI (days)	Comments (see text)
Shuck Split (continued)						
Peach scab	Abound 2.08 F		11-15 fl oz/A	4	0	[4.2]
	OR Adament 50 WG		4-8 oz/A	120	1	
	OR Bravo Ultrex 82.5WDG	0.9-1.25 lb/100 gal	2.8-3.8 lb/A	12 hr/7 days(E)	SS	
	or Bravo Weather Stik 6F	1.0-1.4 pt/100 gal	3.1-4.1 pt/A			
	or other chlorothalonil formulations (see labels)					
	OR 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		SS	
	OR Captan 50WP	2 lb/100 gal	8 lb/A	24-96(E)	0	
	or Captan 80 WDG		2.5-5 lb/A	24	0	
	or Captec 4L	0.75-1 qt/100 gal		24	0	
	OR Gem 500SC		1.9-3.8 oz/A	12	1	
	OR Indar 2F		6 fl oz/A	12	0	
	OR §Sulfur 92WP	6-8 lb/100 gal		24	0	
	or Microthiol Disperss 80DF		6-12 lb/A	24	0	
	or other sulfur products	See labels				
	OR Quash		2.5-3.5 oz/A	12	14	
OR Thiram Granuflo	1.2 lb/100 gal	3.5 lb/A	24	7	[2.3]	
OR Topsin M 70WP		12 oz/A	48	1		
plus Captan 80 WDG		2 lb/A	24	0		
Obliquebanded leafroller	Altacor 35 WDG		3.0-4.5 oz/A	4	10	[15.1]
	OR *Baythroid XL 1EC		2.4-2.8 fl oz/A	12	7	
	OR Belt SC		3.0-4.0 fl oz/A	12	7	
	OR §Biobit HP		0.5-2.0 lb/A	4	0	
	OR Delegate 25 WG		4.5-7.0 oz/A	4	14	[15.1]
	OR §Deliver		0.5-2.0 lb/A	4	0	
	OR §Dipel DF		0.5-2.0 lb/A	4	0	
	OR *Leverage 2.7SE		4.4-5.1 fl oz/A	12	7	[15.1]
	OR SpinTor 2SC		4-8 fl oz/A	4	14	[15.1]
or §Entrust 80WP		1.25-2.5 oz/A	4	14	[15.1]	
Oriental fruit moth,	Actara		4.5-5.5 oz/A	12	14	[16.2]
	OR Altacor 35 WDG		3.0-4.5 oz/A	4	10	[16.2]
Lesser peachtree borer,	OR *Asana XL 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14	
Plum curculio	OR Assail 30SG		5.3-8.0 oz/A	12	7	
	OR Avaunt 30WDG		6.0 oz/A	12	14	
	OR §Aza-Direct 1.2L		1-2 pts/A	4	0	
	OR §Azatin XL 3L		10-21 fl oz/A	4	0	

Table 14.3.1. 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	Rate/100 gal	Rate/A	REI (hrs)	PHI (days)	Comments (see text)	
Shuck Split (continued)							
Oriental fruit moth,	OR *Baythroid XL 1EC						
	for lesser peachtree borer:		1.4-2.0 fl oz/A	12	7		
Lesser peachtree borer,	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		
Plum curculio (continued)	OR Delegate 25WG		6.0-7.0 oz/A	4	14		
	OR Imidan 70W	0.75-1.0 lb/100 gal	2.1-4.25 lb/A	72	14		
	OR Intrepid 2F		10-16 fl oz/A	4	7	[16.2]	
	OR *Leverage 2.7SE		3.0-5.1 fl oz/A	12	7		
	OR *Pounce 25WP		6.4-16.0 oz/A	12	14		
	OR *Proaxis 0.5CS		2.6-5.1 fl oz/A	24	14		
	OR Sevin XLR Plus, 4F		2-3 qt/A	12	3		
	OR §Surround 95WP		25-50 lb/A	4	0	[18.2]	
	OR *Warrior II		1.28-2.56 fl oz/A	24	14		
	OR 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]
§Isomate PTB-Dual			150 ties/A			[17.1]	
San Jose Scale, Lecanium Scale	Centaur		34.5-46 oz/A	12	14	[11.2]	
	OR Esteem 0.86EC		13-16 fl oz/A	12	14		
	OR Movento		6.0-9.0 fl oz/A	24	7		
Tarnished plant bug	See materials listed under Pink plus						
	Actara		4.5-5.5 oz/A	12	14	[19.1]	
Additional Summer Sprays							
Bacterial spot	§Mycoshield 17WP	12 oz/100 gal		12	21	[1.3]	
	OR Flameout 17 WP	12 oz/100 gal		12	21		
	OR FireLine 17WP	12 oz/100 gal		12	21		
	OR copper products	See comments				[1.4]	
Brown rot	Adament 50 WG		4-8 oz/A	120	1		
	OR Captan 50WP	2 lb/100 gal	8 lb/A	24-96 (E)	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		
	OR Elevate 50WDG		1.5 lb/A	12	0		
	OR Elite 45WP	2 oz/100 gal	4-8 oz/A	12	0		
	OR Indar 2F		6 fl oz/A	12	0		
	OR Orbit 3.6EC		4 fl oz/A	12	0		
	OR Pristine 38WDG		10.5-14.5 oz/A	12	0		

Table 14.3.1. 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	Rate/100 gal	Rate/A	REI (hrs)	PHI (days)	Comments (see text)
Additional Summer Sprays (continued)						
Brown rot (continued)	OR Quash 50WDG		2.5-4.0 oz/A	12	14	
	OR Rally 40WSP	1.25-2 oz/100 gal	2.5-6 oz/A	24	0	
	OR Tebuzol 45 DF	2 oz/100 gal	4-8 oz/A	120	0	
	OR Thiram Granuflo	1.2 lb/100 gal	3.5 lb/A	24	7	[2.3]
	OR §Sulfur 92WP or other sulfur products	6-8 lb/100 gal See labels		24	0	
Peach scab	Adament 50WG		4-8 oz/A	120	1	[4.2]
	OR Captan 50WP	2 lb/100 gal	8 lb/A	24-96(E)	0	
	or Captan 80 WDG		2.5-5 lb/A	24	0	
	or Captec 4L	0.75-1 qt/100 gal		24	0	
	OR Gem 500SC		1.9-3.8 oz/A	12	1	
	OR §Sulfur 92WP or Microthiol Disperss 80DF	6-8 lb/100 gal	6-12 lb/A	24	0	
	OR Thiram Granuflo	1.2 lb/100 gal	3.5 lb/A	24	7	[2.3]
	OR Topsin M 70WP plus Captan 80 WDG		12 oz/A 2 lb/A	48 24	1 0	
	Powdery mildew (rusty spot)	§Sulfur 92WP	5-10 lb/100 gal		24	0
European red mite,	Acramite 50WS		0.75-1.0 lb/A	12	3	[12.2]
	OR Apollo 4SC		2.0-8.0 oz/A	12	21	
Twospotted spider mite	OR Envirdor 2SC		16-18 fl oz/A	12	7	
	OR Nexter 75WS		4.4-10.7 oz/A	12	7	
	OR Onager 1EC		12-24 fl oz/A	12	28	
	OR Portal		2 pts/A	12	365	[12.3]
	OR Savey 50DF		3.0-6.0 oz/A	12	28	
	OR *Vendex 50WP		1.0-2.0 lb/A	48	14	
	Green peach aphid	Actara		3.0-4.0 oz/A	12	14
OR Assail 30SG			2.5-5.3 oz/A	12	7	
OR Beleaf 50SG			2.0-2.8 oz/A	12	14	
OR *Lannate LV 2.4L or *Lannate 90SP		0.75 pt/100 gal 0.25 lb/100 gal	3 pt/A 1 lb/A	96 96	4 4	[13.1]
OR Movento			6.0-9.0 fl oz/A	24	7	
OR Provado 1.6F			4.0-8.0 fl oz/A	12	0	
OR *Thionex 3EC or *Thionex 50WP		2/3 qt/100 gal 1 lb/100 gal	3.3 qt/A 4-5 lb/A	48 96	30 30	
Japanese beetle		Assail 30SG		5.3-8.0 oz/A	12	7
	OR *Leverage 2.7SE		3.6-4.4 fl oz/A	12	7	
	OR Provado 1.6F	2 fl oz/100 gal	4.0-8.0 fl oz/A	12	0	
	OR Sevin XLR Plus, 4F		2-3 qt/A	12	3	

Table 14.3.1. 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	Rate/100 gal	Rate/A	REI (hrs)	PHI (days)	Comments (see text)	
Additional Summer Sprays (continued)							
Lecanium scale, San Jose scale	Centaur		34.5-46 oz/A	12	14	[11.2]	
	OR Esteem 0.86EC		13-16 fl oz/A	12	14		
	OR 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			
	OR	Altacor 35 WDG		3.0-4.5 oz/A	4	10	[16.2,3]
	OR	*Asana XL 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14	
	OR	Assail 30SG		5.3-8.0 oz/A	12	7	
	OR	Avaunt 30 WDG		6.0 oz/A	12	14	
	OR	*Baythroid XL 1L		2.0-2.4 fl oz/A	12	7	
	OR	Delegate 25 WG		6.0-7.0 oz/A	4	14	
	OR	Intrepid 2F		10-16 fl oz/A	4	7	
	OR	Proaxis 0.5CS		2.6-5.1 fl oz/A	24	14	
	OR	Sevin XLR Plus, 4F		2-3 qt/A	12	3	
OR	*Warrior II		1.28-2.56 fl oz/A	24	14		
Peachtree borers (including 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]	
	OR *Baythroid XL 1EC		1.4-2.0 fl oz/A	12	7		
	OR *Lorsban 4EC	3 qt/100 gal		96	14		
		or Lorsban 75WG	4 lb/100 gal		96	14	
	OR *Pounce 25WP		6.4-16 oz/A	12	14		
	OR Proaxis 0.5CS		2.6-5.1 fl oz/A	24	14		
	OR *Thionex 3EC	1 qt/100 gal	2.7-3.3 qt/A	48	21		
		or *Thionex 50WP	1.5 lb/100 gal	4.0-5.0 lb/A	96	21	
OR	*Warrior II		1.28-2.56 fl oz/A	24	14		
Tarnished plant bug	Actara		4.5-5.5 oz/A	12	14	[19.2]	
	OR *Asana XL 0.66EC	2.0-5.8 fl oz/100 gal	4.8-14.5 fl oz/A	12	14		
	OR Assail 30SG		5.3-8.0 oz/A	12	7		
	OR *Baythroid XL 1 L		2.0-2.4 fl oz/A	12	7		
	OR Beleaf 50SG		2.0-2.8 oz/A	12	14		
	OR *Leverage 2.7 SE		3.6-4.4 fl oz/A	12	7		
	OR *Pounce 25WP		6.4-16.0 oz/A	12	14		
	OR Proaxis 0.5CS		2.6-5.1 fl oz/A	24	14		
	OR *Warrior II 2.08 CS		1.3-2.5 fl oz/A	24	14		

Table 14.3.1. 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	Rate/100 gal	Rate/A	REI (hrs)	PHI (days)	Comments (see text)
Additional Summer Sprays (continued)						
Western flower thrips	SpinTor 2SC		4-8 fl oz/A	4	14	[20.2]
	or Entrust 80WP		1.25-2.5 oz/A	4	14	
	OR Delegate WG		4.5-7 oz/A	4	14	
X-Disease	Remove chokecherries	See comments				[9.1] [9.2]
Control of Storage Disorders						
Storage rots	Scholar SC	16-32 fl oz/100 gal (see comments & label)				[21.1]
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”					
X-Disease	Mycoject (oxytetracycline)	Tree injection: See label instructions				[9.3]

Table 14.3.2. 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.