Peach and Nectarine Pest Control Schedule for New Jersey Home Orchards

Fact Sheet FS113

Cooperative Extension

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Timing of Spray	Pests	Materials to Use[1]
DORMANT (Before buds swell)	Leaf curl	Chlorothalonil **-OR-** Copper Hydroxide **-OR-** Lime Sulfur
PRE-PINK (After buds swell but before pink color shows)	Scale insects, mites, aphids	All-purpose dormant fruit tree spray[2] **-OR-** Superior-type oil – (follow label rate) (Do not apply oil if temperature will go below 35°F during next 24 hours or injury may result)
PINK (When pink color shows)	Blossom blight	Captan **-OR-** Chlorothalonil **-OR-** Myclobutanil **-OR-** Wettable Sulfur
BLOOM (When flowers are open)	Blossom blight	Captan **-OR-** Chlorothalonil **-OR-** Myclobutanil **-OR-** Wettable Sulfur (Do not apply insecticides during bloom)

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Timing of Spray	Pests	Materials to Use[1]
PETAL FALL (After 100% of flower petals have fallen)	Blossom blight, Rusty spot	All-purpose tree fruit spray[2] **-OR-** Captan + Wettable Sulfur **-OR-** Chlorothalonil + Wettable Sulfur **-OR-** Myclobutanil
	Plum curculio, Aphids	**-PLUS-** Acetamiprid, or Imidacloprid, or Gamma Cyhalothrin, or Permethrin, or Pyrethrins, or Pyrethrins+Piperonyl butoxide (PBO) (see notes), or Esfenvalerate or Malathion, Sevin
SHUCK SPLIT (When developing fruit splits husk)	Scab, Rusty spot	All-purpose tree fruit spray[2] **-OR-** Captan + Wettable Sulfur **-OR-** Captan + Myclobutanil **-OR-** Chlorothalonil + Myclobutanil **-OR-** Wettable Sulfur
	Plum curculio, Aphids, Oriental fruit moth	**-PLUS-** Acetamiprid, or Imidacloprid, or Gamma Cyhalothrin, or Permethrin, or Pyrethrins, or Pyrethrins+PBO, or Spinosad or Esfenvalerate or Malathion, or Sevin
FIRST COVER SPRAY (10 days after shuck split)	Scab, Rusty spot	All-purpose tree fruit spray[2] **-OR-** Captan + Wettable Sulfur **-OR-** Captan + Myclobutanil **-OR-** Wettable Sulfur
	Plum curculio, Aphids, Oriental fruit moth	**-PLUS-** Acetamiprid, or Imidacloprid, or Gamma Cyhalothrin, or Permethrin, or Pyrethrins, or Pyrethrins+PBO, or Spinosad or Esfenvalerate or Malathion, or Sevin
SECOND COVER SPRAY (10 days to two weeks after first cover)	Scab, Rusty spot	All-purpose tree fruit spray[2] **-OR-** Captan + Wettable Sulfur **-OR-** Captan + Myclobutanil **-OR-** Wettable Sulfur
	Oriental fruit moth, Leafrollers and Caterpillars	**-PLUS-** Acetamiprid, or Gamma Cyhalothrin, or Permethrin, or Pyrethrins, or Pyrethrins+PBO, or Spinosad, or Esfenvalerate, or Malathion, or Sevin, or B.t. (Dipel) materials (leafrollers & caterpillars only)

Timing of Spray	Pests	Materials to Use[1]
SUMMER SPRAYS (Every 10-14 days)	Scab (spray until mid-July or up to 21 days before harvest)	Captan **-OR-** Wettable Sulfur **-PLUS-**
	Oriental fruit moth, Leafrollers and Caterpillars	Acetamiprid, or Imidacloprid, or Gamma Cyhalothrin, or Permethrin, or Pyrethrins, or Pyrethrins+PBO, or Spinosad, or Esfenvalerate or Malathion, or Sevin,. or B.t. (,Dipel) materials (leafrollers & caterpillars only)
PRE-HARVEST SPRAYS (14 and 7 days before harvest)	Brown rot	Captan **-OR-** Myclobutanil
NOTES	Bacillus thuringiensis (Dipel and other B.t.s) control only leafrollers and caterpillars. Spinosad materials are also primarily for leafrollers and caterpillars, but will also suppress oriental fruit moth. Pyrethroids are broad spectrum and include Gamma Cyhalothrin, Permethrin and Esfenvalerate. Acetamiprid and Imidacloprid are neonicotinoids with Imidacloprid most effective on sucking insects, such as aphids, and Acetamiprid effective for most insect pests. Organic controls include Neem Oil, organic formulations of Spinosad, B.t.s, and Pyrethrins (w/o PBO). PBO (Piperonyl butoxide) is a synergist. It is not a pesticide, but if used with certain pesticide materials, typically pyrethrins and pyrethroids, their insecticidal properties are increased.	

[1]Active ingredients, not product names, are listed. Pesticide products and formulations may change. Always follow label instructions. Check label for: number of applications allowed per season, interval between sprays, and the number of days between last spray and harvest. Do not mix copper materials or captan with oil or plant injury may result.
[2]All-purpose home fruit tree sprays should contain a fungicide, insecticide, and miticides; if fungicide is captan, do not apply with oil as plant injury may result. Always follow label instructions.

Brown Rot

Brown rot blossom blight and fruit rot are caused by a fungal plant pathogen. The fungus overwinters in mummies in trees, which are blackened, necrotic fruit that were infected during the previous season. Spores produced on these mummies during spring rains infect open flowers during bloom, resulting in blossom blight. Some flower infections develop into blossom blight cankers. These cankers can produce spores throughout much of the summer.

Spores from the cankers are an important source of inoculum for fruit infection. Fruit become susceptible to infection as they mature and begin to ripen. Typically, this ripening process begins 14-21 days prior to harvest. When the green background color of fruit begins to turn yellow, that is an indication that ripening has begun and fruit are becoming susceptible.

Cultural controls of brown rot include removal of mummies during winter or early spring, prior to bloom. Proper pruning to allow good air movement and drying within the tree canopy is also important since the pathogen requires free moisture (rain, dew) to infect flowers or fruit. Fungicide sprays are very important during bloom to protect flowers and during the preharvest period to protect fruit as they ripen. Good insect control is also vital, as any fruit wounds created by insects will often allow easy entry of the brown rot fungal pathogen.

Bacterial Spot

Bacterial spot occurs on both foliage and fruit. Foliar infections consist of brown to black angular spots which often occur near the leaf tip. Infected leaves eventually turn chlorotic (yellow) and fall off. Fruit infections consist of black, pitted lesions, which can be large (1/4") on early infections or numerous and small (1/16") when infection occurs mid-to-late summer. Since no bactericides are available for managing bacterial spot, only less susceptible varieties should be planted in the home orchard.

Oriental Fruit Moth

Oriental fruit moth is the primary insect pest that attacks peaches. It is the "worm in the fruit," but also attacks new shoot growth, causing a flagging of new growth. The female moth lays her eggs on leaf stems, shoots and fruit. There are four generations per year in New Jersey. Upon hatching, early generation larvae usually mine down the developing new growth, and exit when mature. This causes the new shoot to die and bend over or "flag." Later in the season, eggs are laid on the fruit. After egg hatch, larvae immediately enter the fruit and feed on the internal flesh. Injured fruit will have small holes or gummy frass (insect excrement) protruding

from the point of entry. Controls are directed either against the adults, or at newly emerging larvae. Older and more broad spectrum insecticides target both adults and newly hatched larvae. Some newer materials target only newly emerged larvae. Given the habits of this insect, it is very important to thoroughly spray both foliage and fruit when making an application. Treatments for the first generation are usually around shuck split, and again 7-10 days later, or near the end of April and again the first week of May. Second generation treatments are usually applied during the second to third week of June and again 10-14 days later. Timing for the third generation is usually near the third or fourth week of July, and again 10-14 days later. Events in northern counties can be seven to 10 days later than in southern counties

Peachtree Borer

Injury

There are two kinds of borers that attack peach trees, the lesser peachtree borer and the peachtree borer. The peachtree borer is of primary concern for home orchards. It is a clear-wing moth that has one generation per year. Various stages of larvae overwinter in the lower trunk, pupate in the late spring and early summer, and emerge as adults from mid June through late August. Peach, wild and cultivated cherry, plum, prune, nectarine, apricot, and ornamental shrubs of the genus Prunus may be damaged by peach tree borers. Presence of borers is indicated when masses of gum, containing red-brown larval droppings and sawdust, or frass are found on tree trunks near the ground. This is in contrast to clear gum deposits caused by cracking of the bark and mechanical wounds. Borers destroy the inner bark of trees from slightly below the soil surface, to 10 inches above the soil line. Damaged trees become unthrifty and produce off-color foliage. Trees attacked by borers frequently die within a few years. Mature larvae are about one inch long, with cream-colored bodies and brown heads. Sometimes there is a slight pinkish tint. Evidence of pupal cases can frequently be seen after adult emergence, since the split casings, which are about 1/2 to 3/4" long, stick out from the gum on the lower trunk.

Several applications of esfenvalerate applied to the trunk between late July and end of August should reduce infestation problems by killing young larvae before they bore into the trunk. Sprays should be applied in high volume, so that the liquid soaks the bark and puddles at the base of the tree. Alternatively, a hand worming procedure can be done in the following manner: remove soil from around trunks to a depth of six inches. Locate larval burrows by making vertical cuts up and down the damaged areas. These cuts do not seriously harm the tree and heal quickly. Use a flexible wire in the burrows to kill borers. Hand worm in the spring or fall. Since not all borers are found during the first examination, hand worm again two weeks later. After the second hand worming, fill in holes around tree trunks.

Important Suggestions for Best Control Results

- **Always follow directions on container label. Store container in a safe place.**
- **Follow the spray schedule.** Missing one spray can result in wormy or diseased fruit.
- In addition to pest control, be sure fruit trees are pruned, fertilized, and watered properly.
- Be sure spray coverage is adequate. Don't spray in rain. If rain is expected, allow time for deposit to dry. Once dry, spray residue is normally effective for 10-14 days. Deposit often loses its effectiveness following heavy rain.
- Mix only what is needed for the immediate spray job, because many pesticides lose effectiveness when left in water for several hours.
- After spraying, flush tank several times with clean water and force water through spray wand and nozzle until clear. Dispose of excess in accordance to manufacturer's directions. To prevent corrosion, suspend tank upside down (with lid removed) to permit drainage and drying.

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