

Fruit IPM Report 4-24-2015

Dean Polk, Dave Schmitt, Atanas Atanassov, and Amy Raudenbush

Peach

Brown Rot: Blossom infections from the brown rot fungus can occur whenever pistils are exposed and a favorable climate exists. Infection can occur during any wetting period when temperatures are between 41 and 86°F. However [optimum conditions](#) for infection occur with **wetting and temperatures in the mid 70's**. During long wetting periods (several days or more) blossoms can be infected regardless of temperature. Generally infections that occur when conditions are sub optimal are less severe. Blossoms and fruitlets will remain susceptible until the pistil desiccates (sometime between petal fall and shuck split).

Petal Fall Insect Complex: An OFM biofix was set in southern counties on 4/20. Treatments for the first flight will be due at 170-200 degree days after the first trap captures or "biofix." This timing usually coincides with late petal fall to shuck split. **Be sure all petals are off before applying insecticides.** Imidan, Lannate, and synthetic pyrethroids (Asana, Ambush/Pounce, Danitol, Mustang/ Mustang Maxx, Warrior, Baythroid) are rated for control of petal fall insect pests. Diamide and diamide mixes are also labeled, and include Altacor, Belt, Voliam Flexi and Voliam Express, Belt and Turismo, and the new diamide, Exirel. When used alone the diamides are only effective against Leps. such as OFM. Exirel is a second generation diamide and will also control PC, but must be used at the higher rate to do so. This makes it expensive to use. The spinosyn, Delegate is effective for OFM and other Leps, and thrips if they are present in nectarines. Experience has shown that the pyrethroids may be weak at lower rates against plum curculio (PC), especially in hot weather. If using any of the pyrethroids, use a high rate in order to control both OFM and PC. Rotate pyrethroids (IRAC group 3) and O.P.'s (IRAC group 1B) with different chemistries for resistance management. The key arthropod targets at petal fall are **OFM, PC and various catfacing insects, primarily tarnished plant bug and native stinkbugs.**

Green Peach Aphids (GPA): GPA colonies begin forming sometime during bloom. Examine trees for the presence of colonies from pink to shuck split. Count the number of colonies on ten trees and use a treatment threshold of 2 colonies/tree at petal fall for peach, and 1 colony/tree for nectarine. The best way to scout for aphids during bloom is with a [beating tray](#). Alternatively, growers can sample flowers by collecting a handful and opening them to see if aphids are present inside the shucks (See Fig. 1). This is most useful in nectarines which have a lower treatment thresholds for aphids. See the 2015 NJ Commercial Tree Fruit Production Guide for recommended materials and rates.



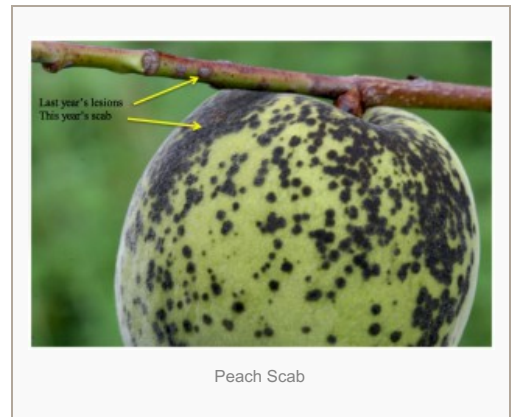
Thrips: [Thrips](#) overwinter as adults in leaf litter and other protected places. Eastern flower thrips and western flower thrips can start moving into orchards sometime during the bloom to petal fall period and can be troublesome on nectarines in some years. Make sure to check your flowers and early developing fruit. Lannate, and Delegate are effective for thrips control at petal fall to shuck split. **Carzol is no longer labeled for any stone fruit in the East**. Entrust can be purchased if you want the slightly more active ingredient that was in Spintor. Actara may provide suppression. As with aphids, thrips monitoring can be accomplished by collecting a sample of blossoms; opening the shucks and examining the inside with a hand lens, or by beating the blossoms against a white piece of cardboard. If thrips are present inside the shucks, treatment with an effective insecticide is suggested. Although early thrips injury is sometimes seen on both peaches and nectarines at harvest, they are generally considered more damaging to nectarines.

Bacterial Spot: Treatments using [copper formulations](#) or terramycin should start at petal fall. Oxytetracycline (a specific type of terramycin Mycoshield and FireLine) formulations have limited residual activity, and are thought to have as much as 24 hours "back-action". Mycoshield/FireLine works best when applied as dilute as possible and under slow drying conditions. Bacterial spot is often troublesome when windy weather patterns develop after bloom. Fruit will be very susceptible at shuck split. See the production guide for recommended materials and rates. Coppers in various formulations, can also be started at petal fall. Watch your rates, since these can all be phytotoxic, and ironically the same conditions (cooler weather with slow drying conditions) that make antibiotics more effective because of increased uptake, also provide better conditions for copper phytotoxicity. Avoid Captan/copper tank mixes if it is very hot, has been overcast for several days in a row, or if applying at low volume. Do not apply copper in acidic spray solutions.

Rusty Spot: Rally should be included at petal fall on rusty spot sensitive varieties. Other materials that can control rusty spot include

Inspire Super and Gem.

Peach Scab: Scab has become more prevalent and widespread in recent years. As petal fall becomes shuck split, scab becomes an important disease to control. In blocks that had scab last season, increased levels of overwintered scab inoculum are present on last year's wood (see photo), and as rain occurs, spores are splashed onto the fruit during rainy periods from shuck split through the following six weeks. The lesions appear from 40 to 70 days after infection. They first appear as small (1-2 mm) green spots, but enlarge to 2-3 mm and become black as spores are produced. Most lesions are found on the shoulders of the fruit where spores were splashed down from the twig. They do not appear until about redhaven season, but by then the damage has already occurred. Since conidia begin forming around petal fall, the first scab sprays should begin then. Gem, Bravo, Pristine, Inspire Super, or a Captan/Topsin-M combination are all very effective scab fungicides. If you do not grow apples, Quadris Top is an excellent scab fungicide that will also control rusty spot. **Do not use Quadris Top if you use the same sprayer for apples.** These materials are also very effective for blossom blight control. In orchards that had scab last year, make a solid application of Quadris Top, Gem or Topsin-M at full rates during petal fall to get suppression of lesions. Solid applications are preferable.



Apple

Diseases: Apple Scab, Powdery Mildew, Cedar Apple Rust, are diseases of concern at this time. Primary apple scab spores are released during any substantial wetting and infection period. Make sure you are well covered. Cedar apple rust infections can occur anytime between pink and 3rd cover. The DMI fungicides Rally, Procure, and Indar control scab, rust, and mildew, but can be subject to resistance. See the full list of "resistance risk fungicides on pages 153, 155 of the Tree Fruit Production Guide for the tight cluster to pink period. These materials should be combined with a protectant, usually an EBDC such as Manzate or used in alternate applications. In recent years new chemistries and premixed fungicides have emerged that have made designing apple disease programs challenging to say the least. Read the labels carefully for label restrictions with regard to resistance management. A good review of the available apple fungicides can be found in Dave Rosenberger and Kerik Cox's [article](#) in last week's edition of Scaffolds Newsletter.

Fire Blight: From a calendar perspective, blossom sprays using Streptomycin should be applied on a 3-7 day schedule or anytime temperatures are 65°F or above and the relative humidity is 60% or above. Mycoshield and Fireline have labeling allowing use on apples. Consider rotating streptomycin with one of these oxytetracycline products for resistance management. Timing applications to infection events using the predictive models at NEWA is much more effective and is the best approach. Find the weather station nearest your location and record the date of first bloom to use the model.

Pear

Fire Blight: See apple section above.

Pear Psylla: Pear Psylla nymphs began hatching early this week. Nymphs will feed on developing clusters through bloom. The best option for control at popcorn/bloom is Surround @ 25-50#/ac. Esteem may also be used up to bloom. and shortly thereafter. Sivanto is a new material that is effective for psylla, scale, aphids and leafhoppers. This is a systemic material similar to the neonicotinoid class, but is relatively bee safe. It is not effective for plum curculio, so a PC effective material should be added or be substituted if that insect is a concern. PC materials that also control psylla include Actara, Assail, Calypso and the pyrethroids (high rates only). Actara, Assail and Calypso **should not be used** if there are flowering weeds in the orchard.

Tree Fruit Scouting Calendar Southern Counties

The following table is intended as an aid for orchard scouting. It should **not** be used to time pesticide applications. Median dates for pest events and crop phenology are displayed. These dates are compiled from observations made since 1995 in Gloucester County. Events in northern New Jersey should occur 7-10 days later.

Pest Event or Growth Stage	Approximate Date	2015 Observed Date
Bud Swell (Redhaven)	March 23 +/- 15 Days	April 14
1/4" Green Tip Red Delicious	March 31 +/- 13 Days	April 7
Pink Peach (Redhaven)	April 4 +/- 15 Days	April 19
Tight Cluster Red Delicious	April 9 +/- 13 Days	April 19
Oriental Fruit Moth Biofix	April 9 +/- 13 Days	April 20

Full Bloom Peach (Redhaven)	April 9 +/- 14 days	Not yet observed
-----------------------------	---------------------	------------------

Blueberry

Cranberry Weevil (CBW): Activity has increased over the past week due to the increase in temperature. The percentage of sites with CBW activity went from 37.5% the week of April 6th to 72.3% for the week ending April 18th. Additional sites have shown CBW activity, however only 4.6% of the sites monitored over the last week were above threshold. The threshold level for adult CBW is an average of 5 weevils per bush.

Cranberry Weevil Summary April 13 to April 18, 2015	
Max average per bush	39.0
Min average per bush	0.0
% positive sites	72.3
% of sites above threshold (5 CBW/bush)	4.6



Cranberry Weevil Feeding Damage

Samples with adult activity above threshold level are monitored on edge rows and at least 6 rows into the field to determine if border spray or full field sprays are necessary. If inner field CBW counts are at or above threshold level, a full field spray is recommended. Observations for CBW feeding are also part of the scouting process. The treatment level for CBW feeding is 20% of blossom clusters injured, or 1 out of every 5 buds damaged. Cranberry weevil feeding leaves a noticeable pinhole on the bud (Figure).

Plum Curculio (PC): Several PC adults were seen on Monday in commercial fields, even though there is no bloom or fruit present. PC overwinters on the adult stage in the woods, hedgerows and other protected areas. When temperatures start averaging 600 or more for several days, adults will start to move. Even if the average temperatures are below 600, a couple of days with maximum temperatures above 750 will stimulate adult movement. With favorable temperatures over half the overwintering population can emerge in a single day. They may also return to overwintering sites if temperatures drop for a prolonged period of time.

Mummy Berry: Monitoring for the mummy berry cups has started. Currently no mummy berry cups have been detected in monitored sites. However, this is the time of year when mummy cups should be visible on the ground. Mummy cups should be more common in wet, poorly drained sites. The ascospores that cause primary infection are released from those cups. Fungicides that target mummy berry should be maintained. See page 12 of the 2015 Commercial Blueberry Pest Control Recommendations for New Jersey for rates of Indar, Orbit, Pristine, Proline, Quash and Switch.

Tree Fruit Trap Counts – Southern Counties

Weekend	STLM	TABM-A	CM	AM	OFM-A	DWB	OFM-P	TABM-P	LPTB	PTB
4/19	0	-	-	-	0	-	0	-	-	-