http://ipm.osu.edu/fruit/index.html

The Ohio State University Newsletter Extension

Fruit ICM News

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In This Issue:

Calendar

July 10: Ohio Fruit Growers Society Summer Tour, Hirsch Fruit Farm, Chillicothe, OH. Registration for the Summer Tour begins at 8:00 a.m. Member fees are $15 per family & $10 per individual; nonmember fees are $20 & $15. Orchard tours will begin as soon as the first tour wagon is full. Registrants will be able to purchase morning refreshments and a noontime meal. The Hirsch farm produces a mix of high quality tree and small fruit products and operates a retail farm market. They have 32 acres of apples (30 varieties), six acres of peaches, one acre of nectarines, and small acreage of pears and plums. They have also diversified into strawberries, black raspberries, blackberries, concord grapes, and asparagus. For more info about the summer tour, call Tom Sachs at 614-249-2424.

July 23: Licking County Twilight Fruit School, Branstool Orchards. Contact Howard Siegrist at 740-349-6900 for more information.

Controlling Wild Garlic and Wild Onion

Source: Eric Hanson, MSU Horticulture, and Steve Gower, Diagnostic Services, MSUE Fruit CAT, Vol.

17, No. 7*, May 28, 2002*

Two often confused and difficult to control weeds are wild garlic (Allium vineale) and wild onion (Allium canadense). At first glance, these two plants appear much like grasses, but are actually perennial weeds in the lily family. While wild garlic and wild onion are very similar in appearance and habitat, they can be distinguished by looking at the leaves. Wild garlic leaves are hollow and round and may arise anywhere along the stem, whereas wild onion leaves originate from the base and are flat and solid. Both are perennials that sprout each year from small bulbs just under the soil surface. The bulbs of wild garlic are covered with a papery membrane and usually include several bulblets that are flat on one side. Wild onion bulbs do not produce bulblets and are covered with a very thin membrane. Both species are common in poorly drained areas, which include most blueberry fields.

There are no effective preemergent fruit herbicides. Wild onion is listed on the Solicam label, so this herbicide may provide suppression/control in blueberry plantings and orchards that are older than a year.

Although the leaves of these weeds are grass-like, they are not grasses. In fact, the broadleaf herbicide 2,4-D provides suppression and control of wild garlic and wild onion. In orchards older than one year, treat the weeds when they are growing rapidly with an amine formulation such as Weedar 64. Repeat applications 10-14 days apart may be necessary for control. Do not apply when trees are blooming, and avoid drift onto tree leaves. Do not apply to grapes, blueberries, or raspberries. Because wild garlic and wild onion leaves are narrow and have a vertical orientation and waxy surface, they do not retain postemergent sprays readily. Add a nonionic surfactant to increase wetting and spray retention to improve control.

Patches of these weeds may also develop in the sod between tree rows, particularly where the grass is weaker and less competitive. Wild garlic and wild onion patches in the sodded middles can be suppressed by applying fertilizer to maintain a vigorous sod and mowing short to remove the tops of the weeds and prevent seed production.

Monitoring Fire Blight

Source: Bill Shane, Dave Epstein, John Bakker, Jim Laubach, Doug Murray, Peter McGhee, Amy Irish-Brown, MSUE Fruit CAT, Vol. 17, No. 7, May 28, 2002

Fire blight is a sporadic and sometimes devastating bacterial disease of apples and pears. All parts of the tree are susceptible to infection. The bacterium overwinters in cankers from previous year's infections. New infections begin in succulent plant tissue, such as blossoms and young leaves. It can move through the vascular system infecting all parts of the tree, causing browning, decline, and in severe cases, tree death.

Monitoring for new fire blight symptoms is essential to managing this disease. Spend extra time scouting in sections of the orchard with susceptible varieties, vigorous growth, and a history of fire blight. Generally, the pathogen survives more readily in cankers found on larger limbs. One of the first signs of renewed fire blight activity is amber-colored ooze running down the surface of fire-blighted trees close to bloom time. The ooze may contain fire blight bacteria, which can be spread throughout the orchard by water, wind, and insects.

Ooze can be caused by factors other than fire blight. To determine if blight is present, use a knife to cut below the bark, and look for the orange discoloration associated with an active fire blight canker. Disinfect the knife after each use to avoid spreading the disease.

Infected cankers may cause nearby shoots to wilt even though the shoots have no visible sign of fire blight. This can be confused with wilting symptoms that will be seen later in the season caused by direct external infection of the leaf.

One of the first symptoms of new infection is blossom blight, indicated by rapid wilting and a black discoloration of blossom tissue. Blossom blight can sometimes be distinguished from frost injury by cutting across the base of the blossom cluster. The discoloration associated with frost injury is dry and localized, while fire blight injury is moist and extends beyond the blossom base.

The combination of open blossoms, water, and warm temperatures is favorable for blossom infection. Careful notes on when the blossom opens, and detailed weather conditions are needed to predict disease expression. Infection of newly opened flowers may be delayed or even unsuccessful under cool and dry conditions. After an infection there is a further delay of 5 to 30 or more days before fire blight symptoms are expressed, depending on temperature.

The scout should be aware that bloom may be unusually long for certain apple varieties such as Rome, or delayed on newly planted trees. This lingering bloom can be the target of significant infection when temperatures tend to be higher.

New shoots affected by fire blight may wilt, taking on the appearance of a "shepherds crook." Look for ooze and reddish-brown discoloration associated with shoot blight.

Sometimes mature trees can work to your advantage, as is the case with fire blight: Older leaves and fruit are better able to withstand fire blight infection.

Another avenue of fire blight infection is mechanical injury. Hail or high winds can initiate an epidemic by damaging leaves, blossoms and fruit.

Computer predictive models for fire blight such as "Maryblyt" and "Cougarblight" are important tools for guiding management decisions. Maryblyt is a widely used computer program that predicts infection and the appearance of fire blight symptoms. The Maryblyt program uses daily maximum and minimum temperatures, rainfall, and growth stage data to calculate infection risk and symptom development for canker, blossom, and shoot blight.

Predicting blossom blight is one of Maryblyt's most useful aspects. This module calculates cumulative degree hours using a base of 65 degrees Fahrenheit, beginning at bloom. This sum is called the epiphytic infection potential or EIP. As the EIP climbs, the Maryblyt program indicates there is a corresponding buildup of fire blight bacteria on the blossom surface. The program predicts that a blossom infection may occur when a total of 198 degree hours is reached if two additional conditions are met: an average daily temperature of at least 60° F, and a wetting event such as dew or rain. Although these calculations can be done by hand, use of the Maryblyt computer program makes it easy.

A handy way to use the program is to enter predicted weather forecasts to anticipate infection and help guide preventative spray decisions. The Maryblyt computer program also predicts when the symptoms from infections will show up in the orchard, approximately 103 degree days base 55 F following infection. This delay in symptom expression can be one to three weeks, depending on the temperature.

Editor's note: The disease cycle, as a graphic, is available from Mike Ellis's *Disease Management Guidelines for Organic Apple Production in Ohio*
http://www.caf.wvu.edu/Kearneysville/disease_descriptions/disease_images/cyclfb.jpg

Management of Bacterial Spot of Stone Fruit

Source: Bill Shane, SW District Agent - Fruit and Marketing, MSUE Fruit CAT, Vol. 17, No. 7, May 28, 2002

Bacterial spot is caused by the bacterium Xanthomonas campestris pv. pruni. The disease is a problem on peach, nectarine, apricot, and plum. The pathogen infects fruit, foliage, and young twigs. On leaves, symptoms typically begin as small green spots, sometimes with a water-soaked appearance, turning dark brown as the tissue dries. Symptoms are often clustered at leaf tips, due to prolonged wetness caused by water drops.

Infected areas may drop out of leaves, giving a tattered appearance. Leaf drop can occur with severe infections. Infected fruit develop tiny, irregular, dark-brown pits, providing entry points for other diseases, such as brown rot. Skin of infected fruit, especially apricots and nectarines, may crack as fruit expand during growth.

The most effective way to manage bacterial spot is to avoid planting varieties that are highly susceptible to this disease. Ratings for standard and new fresh market peach varieties are given in Table 1. Many of the new varieties have better resistance to bacterial spot than familiar older varieties such as Red Haven and Cresthaven.

For non-melting peaches, bacterial spot has been the major problem for Babygold 5 and 7, the primary varieties for the Michigan processing industry. The new varieties Vulcan, Vinegold, Virgil, and Venture from the Vineland Research Station, Ontario and Goldnine from the University of Arkansas have greatly improved resistance to bacterial spot. Bacterial spot is generally more severe in sites exposed to blowing sand. Maintain proper fertility and use of sod ground cover around orchards to help reduce bacterial spot severity. Plant susceptible varieties in less exposed areas.

Chemical control is typically necessary to manage the disease on many sites. Copper sprays applied in the fall at leaf-fall and in the spring before bloom is generally believed to reduce bacterial populations. Materials containing zinc, such as ziram, can also help control bacterial population build-up. Ziram supposedly enhances the activity of coppers for bacterial spot control.

Mycoshield tetracycline (terramycin) is the most effective chemical strategy for peaches, nectarines, and apricots (where labeled) during the critical control periods from petal fall to approximately three weeks after petal fall. Syllit plus Captan provides some suppression of bacterial spot, but has to be used carefully to avoid build-up and phytotoxicity to leaves. The time period from petal fall to shortly after shuck split, especially with wet weather, is important for chemical control. Chemical applications are of dubious worth once symptoms are showing in the orchard. **Table 1. Bacterial Spot Rating on Leaves for Fresh Market Peaches** (Four year average at the SW Michigan Research and Extension Center, Benton Harbor, MI)

Variety	Bacterial Spot	Variety	Bacterial Spot

	Rating		Rating
Allstar	8.5	PF1	8.9
Blazing Star	9.0	PF12A	8.9
Bounty	7.7	PF15A	7.7
Canadian Harmony	8.3	PF17	8.8
Coral Star	8.3	PF20-007	8.4
Cresthaven	8.1	PF23	8.6
Glowing Star	8.6	PF24-007	9.0
Harbinger	8.1	PF27A	9.0
Harrow Beauty	8.9	Red Star	8.2
Harrow Dawn	8.0	Redhaven	8.0
Harrow Diamond	9.0	Rising Star	8.1
Harrow Fair	8.6	Starfire	9.0
John Boy	9.0	Suncrest	7.1
Laurol	6.5		

Bacterial spot rating scale range (3=severe to 9=none)

New Insecticide for Raspberries and Other Caneberries

Source: Celeste Welty, OSU Extension Entomologist

A pyrethroid insecticide is now registered for use on caneberries: Capture 2EC with the active ingredient bifenthrin. Bifenthrin is the same AI as found in Brigade 10WP, which is registered for use on strawberrries. Both Capture and Brigade are made by FMC Corporation and both are restricted use pesticides. Target pests listed for caneberries are leafrollers, root weevils, and spider mites, but it is likely to control other pests as well, such as rose chafer, red-necked cane borer, tarnished plant bug, and thrips. The use rate is 3.2 to 6.4 fluid ounces per acre. The pre-harvest interval is 3 days. The re-entry interval is 24 hours for machine harvested berries or 4 days for other berries.

Internal Apple Pests

Source: Harvey Reissig and Dave Combs, Entomology, Geneva, Scaffolds Fruit Journal, May 28, 2002. Adapted for Ohio growers.

Apple growers in N.Y. have not traditionally applied insecticide sprays specifically targeted against internal Lepidoptera. Early season control sprays directed against the plum curculio have provided adequate control of the first generation of internal Lepidoptera, and later sprays applied during July and August to control apple maggot have controlled later season generations. Most growers have used broad-spectrum organophosphate (OP) insecticides to control all of these pests that directly injure fruit and have usually obtained almost perfect control at a reasonable cost. However, in the future, it appears that changing pesticide regulations may affect the availability and use patterns of organophosphates. Also, as growers attempt to implement more sophisticated IPM programs using more selective "reduced risk" insecticides (which usually have a narrower activity range) for control of plum curculio and apple maggot, it may become necessary to apply specific treatments to control internal Lepidoptera throughout the growing season. Two species of lepidopterous larvae can infest apple fruit in Ohio: codling moth (CM) *Cydia pomonella* (Linnaeus); and oriental fruit moth (OFM) *Grapholita molesta* (Busck). These species of apple pests are commonly referred to as internal Lepidoptera. Seasonal development differs slightly for both species; however, since codling moth is the most common pest found in fruit in commercial orchards, these two pests can be managed by directing control measures on a schedule designed to control CM. Since these pests can be found commonly infesting apples in unsprayed orchards and wild apple trees, natural enemies, predators, and parasites will not provide adequate control in commercial apple orchards. Therefore, for the foreseeable future, it is likely that specific control tactics will have to be used in order to obtain acceptable control of CM in Ohio apple orchards.

Chemical Control: It should not be necessary to apply additional special sprays for CM control in apple orchards that continue to be treated with even minimal schedules (2-3 sprays during the season) of OP or other broad spectrum insecticides for control of the plum curculio and apple maggot. During the past few years, however, with the advent of trapping-based spray decisions for apple maggot, and a resulting decrease in cover sprays in some cases, there have been more opportunities for an unwelcome return of low-level CM infestations. In such cases, if it becomes necessary to apply special sprays for CM control in orchards that are not being treated with standard insecticides, timing control sprays by using CM developmental models based on heat unit accumulation is a very effective management strategy.

The Michigan model for predicting CM development gives fairly accurate predictions of codling moth activity in Ohio. As many as two insecticide applications may be made for each of the two generations per year, depending on the severity of pressure. Degree days are accumulated from the date of first sustained moth catch, and the first spray is applied at 250 DD (base 50 F), which corresponds with predicted 3% egg hatch. A second spray may be applied 10-14 days later. If pressure is not too severe, one spray will suffice, applied instead at 360 DD after the biofix date. To control the second generation, the timing is 1260 DD after this same biofix date.

We will again publicize suggested codling moth treatment windows this season, for those growers who don't necessarily spray certain blocks for maggot each year, and who have evidence (or suspicion) that codling moth is starting to pose a significant threat. We're calling the biofix May 6 in Columbus and May 23 in northern Ohio. Degree day accumulations since biofix in Columbus equal 208 with 250 degree days expected to be accumulated on May 31. For northern Ohio, 60 degree days have accumulated since May 23 and 250 will be accumulated by June 9th based on normal temperatures.

Insecticide trials conducted in N.Y. over a number of years in research orchards heavily infested with CM and other species of internal Lepidoptera have shown that most currently available IPM-compatible, "reduced risk" insecticides (Dipel, Confirm, and SpinTor) are slightly less effective in preventing fruit injury than are standard OP insecticides such as Guthion and Imidan. However, it is likely that these selective materials applied on a schedule of 2-3 sprays/generation of CM, based on predictions from a CM developmental model, will provide adequate control in normal commercial apple orchards that are not located adjacent to abandoned orchards or extensive acreages of feral, unsprayed apple trees.

However, since some of these materials have limited contact activity against young CM larvae, and are only effective when ingested, they may be more effective if they are applied 5-7 days earlier than the estimated first hatching date predicted by the developmental model for each generation of CM. This type of scheduling ensures that eggs are deposited on residues of the material so that hatching larvae are more likely to ingest a lethal dosage of the compounds before entering the fruit.

Some of the newer selective contact insecticides being developed show promise as potential replacements or rotational complements to the standard OP programs currently used for internal lep management. The results of a recent test in heavily infested research orchards at the NYSAES are shown in Table 2, below. The first generation of internal Lepidoptera was controlled well by all of the treatments. However, at the end of the second generation, internal lep damage in the seasonal programs of Calypso, Actara, and Guthion/Spinosad were not statistically lower than that in the untreated check plots. The standard treatment of Guthion gave the best overall control of internal leps, but the Warrior treatment and programs using mixtures of materials provided statistically comparable control.

Table 2. Efficacy of OP-Replacement materials, 2001

		Average % Fruit Damaged by Internal Lepidoptera			
		Internal Lepidoptera		SJS	Plum Curculio
Treatment	Spray timing	1^{st} generation	Harvest		
Calypso 4F	Petal fall thru 7^{th} cover sprays	1.7 a	6.3 b	0.8 abc	8.8 a
Actara 25WG	Petal fall thru 7^{th} cover sprays	4.7 a	40.3 c	21.0 d	24.7 c
Actara 25WG and Calypso 4F and Spintor 2SC	Twice at petal fall 1^{st}, 2^{nd}, 6^{th} & 7^{th} cover sprays 3^{rd} & 4^{th} cover sprays	0.3 a	9.0 b	14.5 bcd	7.2 a
Esteem 35WP and Danitol 2.4EC and Dipel 10.3DF and Guthion 50WP	HIG Petal fall 3^{rd} and 4^{th} cover sprays 1^{st} thru 7^{th} cover sprays	0.0 a	2.2 ab	4.2 abc	8.0 a
Guthion 50WP	Petal fall thru 7^{th} cover sprays	1.7 a	3.0 ab	0.8 ab	8.3 a
Warrior 1CS	Petal fall thru 7^{th} cover sprays	0.0 a	0.5 a	0.2 a	15.5 abc
Actara 25WG and Imidan 70WP and Spintor 2SC	Twice at petal fall, 3^{rd} cover sprays 1^{st}, 5^{th} thru 7^{th} cover sprays Petal fall, 3^{rd} and 4^{th} cover sprays	0.7 a	1.3 ab	5.2 abcd	9.2 a
Guthion 50 WP and	Petal fall 1^{st}, 2^{nd}, 5^{th}, 6^{th} cover	0.3 a	4.0 ab	7.0 abcd	12.0 ab

Spintor 2SC	3rd and 4th cover sprays				
Check	None	11.7 a	44.5 c	0.8 ab	65.3 d

Means within a column followed by the same letter are not significantly different (Fisher's Protected LSD Test), P<0.05).

Oriental Fruit Moth During the last decade, OFM management in peach orchards in the province of Ontario, Canada, has been increasingly difficult because populations throughout the area have become resistant to organophosphate insecticides. During the last several years, OFM damage has also been increasing in peach orchards in nearby Niagara Co., which is located in relatively close proximity to the peach production regions in Canada that have been experiencing OFM outbreaks. During 2001, trials were conducted to: (1) Monitor the efficacy of a standard OP insecticide against OFM in a typical "problem" orchard in Niagara Co.

(2) Test the feasibility of using a heat-driven egg hatch model to time insecticides against different broods of OFM, and (3) Compare the effectiveness of new insecticides against OFM. Dilute to run-off sprays were applied with a handgun sprayer (450 psi) at several different timings according to degree day accumulations (base 45 F) since 1st adult catch (1st generation) for both broods.

Applications were made against both generations, at either early egg hatch alone or followed by a second spray; mid-egg hatch alone; or at late egg hatch.

Treatments, including an untreated check, were replicated 4 times on single-tree plots and arranged in a RCB design. First brood early sprays (5-10% egg hatch) were applied on May 14th (150 DD), and a second spray was applied on May 29th (265 DD). Single-spray mid-egg hatch treatments were also applied on May 29th. Single late hatch sprays were applied on June 11th (395 DD). Second brood sprays started on July 19th (1130 DD) for the early hatch plots and were reapplied on August 1st (1400 DD). The mid-hatch sprays were also applied on August 1st. Late hatch sprays began on August 9th (1635 DD). Larval counts for the first brood were taken on June 18th by examining 100 terminals per tree in each replication. Fruit damage was evaluated on 100 randomly selected fruit per tree on September 9th. Results are given in Table 3.

Table 3. OFM Terminal Infestation and Fruit Damage, 2001

Treatment	Spray Timing	% Infestation per 100 Terminals (June 18)	% Fruit Damage at Harvest September 9)
Imidan 70W	Early hatch + 2nd spray	3.8 abc	7.5 abc
Esteem 35WP	Early hatch + 2nd spray	7.0 bc	9.0 abc
Asana XL	Early hatch + 2nd spray	0.5 a	4.6 a
Asana XL	Early hatch	0.8 a	8.8 abc
Asana XLc	Mid-hatch	3.8 abc	6.3 ab

Asana XLd	Late hatch	6.8 abc	6.4 ab
Calypso 4F	Early hatch + 2nd spray	1.8 ab	4.2 ab
Avaunt 30WG	Early hatch + 2nd spray	3.0 abc	5.7 ab
Intrepid 2F	Early hatch + 2nd spray	5.0 abc	6.0 ab
Intrepid 2F	Early hatch	4.8 ab	8.6 abc
Intrepid 2Fc	Mid-hatch	6.5 bc	13.2 bc
Intrepid 2Fd	Late hatch	6.3 bc	10.9 abc
Untreated check	None	9.3 c	17.4 c

Means within a column followed by the same letter are not significantly different (Fisher's Protected LSD Test, $P<0.05$). Data transformed using Arcsin (Sqrt X) prior to analysis.

Treatments with lower percentages of infested terminals generally also had low levels of fruit injury, except for the single application of Asana applied at the beginning of hatch of each brood, which had low terminal damage, but relatively high levels of fruit injury. Even though the second brood of OFM is the first generation to significantly damage fruit, shoot infestation from the first brood may have a bearing on subsequent fruit injury. The 2-spray treatments of Asana and Calypso were the most effective programs in protecting fruit from OFM injury. The single applications of Asana were not as effective as the 2-spray program, and the single sprays applied later in the season were more effective than the single treatment applied at first hatch. The 2-spray program of Intrepid was also more effective in protecting fruit than any of the single sprays, but, in contrast to Asana, the most effective single-spray program of Intrepid was the application begun at first hatch. These differences may be due to the different residual effectiveness and modes of action of the two compounds. Avaunt also significantly reduced OFM fruit damage below that in the untreated check plots, and was almost as effective as the better programs of Calypso and Asana. Esteem was not as effective against OFM as the other new materials tested. The 2-spray Imidan program did not significantly reduce OFM fruit damage, which suggests that field populations of OFM in this orchard have developed low-moderate levels of resistance to this material and probably also to other types of OP insecticides.

Managing Summer Diseases of Peach

Source: Bill Turechek and Cathy Heidenreich, Plant Pathology, Geneva, Scaffolds, Scaffolds Fruit Journal, May 28, 2002

Warm, wet weather after shuck split may result in disease problems for peach growers caught off-guard. As the temperatures begin to (finally) rise, and with thunderstorms in the forecast for most of this week, be sure to keep an eye on the weather to avoid potential problems with bacterial spot of peach, and possibly peach scab.

Bacterial spot is a disease that affects virtually all stone fruits, but is particularly damaging to peaches, nectarines, and apricots. The disease is caused by the bacterium *Xanthomonas arboricola*. Temperatures above 65 F and wet conditions favor disease development, and it is likely to be a problem in orchards with a history of disease. Primary fruit and leaf infections occur as a result of frequent wetting from full bloom to 4 weeks after shuck split. Wind-driven rain or debris can damage leaves and developing fruit, creating small wounds that the bacteria can enter, and significantly affecting the occurrence and severity of fruit and leaf infection. Disease does not develop under hot and dry conditions.

Peach scab, caused by the fungus *Cladosporium carpophilum*, is more of a problem downstate, and on later peach varieties. It is capable of infecting all cultivars of peach, and is known to affect apricots, plums and nectarines. Once established, this disease can be extremely damaging. Infection and fungal growth are most rapid during periods of rainfall with temperatures between 65-75 F. Symptoms develop after a very long incubation period of 40-70 days. Because of the long incubation period, it is most often only the infections that occur between shuck split and pit hardening that develop fruit symptoms before harvest. Secondary infections may occur on twigs and late-season cultivar fruit. Although leaves and twigs may become infected, the fruit exhibit the most obvious evidence of the disease, developing small, greenish circular spots that gradually get bigger and darken as spore production begins. These spots appear when fruit are half-grown and are most common on the stem end of the fruit, but can occur over the whole surface.

Powdery mildew (rusty spot) is caused by the same fungus that causes powdery mildew on apple. This is a particularly favorable year for powdery mildew, so we expect to see rusty spot on peach varieties susceptible to the disease. Fortunately, fungicide programs targeted for control of brown rot or peach scab will often provide appreciable control of rusty spot. The SI fungicides (Indar, Elite, and Orbit) targeted towards brown rot management should provide good control against rusty spot.

Disease management: The most effective way of managing bacterial spot is to plant varieties resistant to the disease, yet this is not always practical. Maintaining proper fertility is essential, as excessive growth or poor nutrition increases a tree's susceptibility. Our limited choice of cultural control methods makes chemical control necessary when bacterial spot is a problem. If you had disease problems in the past and weather predictions look favorable for infection, applications of oxytetracycline will be necessary. If warm and wet weather conditions persist, oxytetracycline can be applied on a 7-10-day schedule from now until 3 weeks before harvest. Oxytetracycline is intended to be used in a preventive mode; it has very limited to no kickback activity. If conditions prohibit you from making an application 24 hours or longer after a known infection event, save your money, as an application at this time will probably be ineffective against these infections.

Recently, I have been hearing about the use of the foliar fertilizer Nutri-Phite Magnum as a means of managing bacterial spot. Nutri-Phite fertilizers are derived from *phosphorous acid*. Phosphorous acid forms a **phosphite salt** when neutralized with a base, as opposed to a **phosphate** salt, which results when *phosphoric acid* (the traditional source of phosphorous) is neutralized with a base. Phosphite has one less oxygen molecule than phosphate and, apparently, has a much higher degree of solubility and mobility. Its effectiveness against bacterial spot, at this point, is not known under New York conditions and, furthermore, I have not seen any published reports documenting its efficacy. We have included this product in our trials this year at the 2 pt/A rate, in order to evaluate its potential.

To prevent peach scab, pruning is helpful because it facilitates air movement through the canopy to reduce the length of wetting periods and improves spray penetration into trees. When control measures are needed, apply fungicide sprays at 10-14-day intervals starting 10 days after shuck split and continuing until 6 weeks before harvest. These intervals may be lengthened during extended periods of dry weather. Several products are labeled for use in NYS for peach scab control, including Captan

50WP (2 lb/100 gal) or Captan 4L (1.5-2 pt/100 gal), Indar 75WS (0.8 oz/100 gal), Sulfur 95WP (5 lb/100 gal), or Topsin M 70WP/Captan 50 WP combination (6 oz/100 gal/ and 1 lb/100 gal, respectively). All of these fungicides are labeled for control of brown rot through either petal fall or shuck split. So, if you have been using these fungicides in your schedule for control of brown rot, you have been managing scab as well. It is important to maintain protection beyond shuck split through pit hardening for control of peach scab, especially under favorable weather conditions. These fungicides will also offer protection against brown rot and rusty spot (particularly sulfur) during this period.

SkyBit® Apple Scab Prediction for North-Central Ohio

Observed:
May 1, 2, 6-9, 10, 11-17, 24-26, 28-30; possible infection & damage

May 3-5, 10, 18-22, 27; active, but no infection

Predictions based on weather forecasts:
May 31, June 1, 2, 5-7; active, but no infection

June 3-4: possible infection & damage

Pest Phenology

Coming Events	Degree Day Accum. Base 50F
Plum curculio oviposition scars present	232 - 348
European red mite 1st summer eggs	235 - 320
San Jose scale 1st flight peak	229 - 449
Peachtree borer 1st catch	299 - 988
Obliquebanded leafroller 1st catch	392 - 681
European red mite summer egg hatch	442 - 582
STLM 2nd flight begins	449 - 880
Peachtree borer flight peaks	506 - 1494

Thanks to *Scaffolds Fruit Journal* (Art Agnello)

Degree Day Accumulations for Ohio Sites May 29, 2002

Location	**Degree Day Accumulations Base 50F**	
	Actual	Normal
Akron-Canton	332	427
Cincinnati	559	685
Cleveland	337	401
Columbus	512	528
Dayton	474	545
Kingsville Grape Branch	281	335
Mansfield	331	415
Norwalk	314	395
Piketon	566	700
Toledo	361	388
Wooster	378	383
Youngstown	341	372

SkyBit® Fire Blight Prediction for North-Central Ohio

Observed:
May 1, 2, 7, 8, 11, 13-15, 17-20, 26, 27; active, but no infection
May 3-5, 10, 21-23; not active
May 6, 9, 12, 16, 24, 25, 28-30; possible infection & damage

Predictions based on weather forecasts:
May 31, June 1, 7; not active
June 2, 5, 6: active, but no infection

June 3, 4: possible infection & damage

Fruit Observations & Trap Reports

Insect Key
AM: apple maggot
CM: codling moth
ESBM: eye-spotted budmoth
LAW: lesser apple worm
LPTB: lesser peachtree borer
OBLR: obliquebanded leafroller
OFM: oriental fruit moth
PTB: peachtree borer
RBLR: redbanded leafroller
SJS: San Jose scale
STLM: spotted tentiform leafminer
TABM: tufted apple budmoth
VLR: variegated leafroller

Site: Waterman Lab, Columbus
Dr. Celeste Welty, OSU Extension Entomologist

Apple: 5/22 to 5/29/02
RBLR: 0 (same as last week)
STLM: 2 (up from 0)
CM (mean of 3 traps): 14.3 (up from 11.3)
TABM: no report
SJS: 0 (same as last week)
VLR: 0 (same as last week)
OBLR: 0 (down from 1)

Note: Biofix for codling moth in Columbus was Monday, May 6, 2002. Degree day accumulations since that date = 250.

Peach: 5/22 to 5/29/02
OFM: 31 (up from 2)
LPTB: 2 (up from 0)
PTB: 0 (first report)

Site: East District: Erie & Lorain Counties
Source: Jim Mutchler, IPM Scout

Apple: 5/21 to 5/28/02
CM: 4.5 (up from 0.2)
STLM: 53 (down from 117)
SJS: 0 (same as last week)
OFM: 0.0 (down from4.3)
RBLR: 0.1 (down from 1.03)

Peach: 5/21 to 5/28/02
OFM: 0.7 (up from 0)
RBLR: 0 (same as last week)

Beneficials present - native lady beetles, green lacewing eggs and adults

Site: West District:Huron, Ottawa, & Sandusky Co.
Source: Gene Horner, IPM Scout

Apple: 5/21 to 5/28/02
CM: 2.7 (up from 0.1)
STLM: 10 (down from 13)
OFM: 3.6 (up from 1.0)
RBLR: 0.0 (down from 0.2)

Peach: 5/21 to 5/28/02
OFM: 6.2 (up from 1.4)
RBLR: 0.0 (down from 0.2)

Beneficials present - native lady beetles, green lacewing eggs and adults, multi-colored Asian lady beetles

Site: Wayne County
Ron Becker, IPM Program Assistant

Apple: 5/22 to 5/29/02
STLM: 0
CM (mean of 3 traps): 5.3
RBLR: 0.5

Peach: 5/22 to 5/29/02
OFM: 0.5
LPTB: 7
PTB: 0

Very light curculio and leafminer damage in apples. Pear psylla was heavy in one orchard, despite having been sprayed for earlier in the season. With the biofix for lesser peach tree borer having been established in one orchard (5/29), they plan to use mating disruption for control rather than spraying. They have used this method the last two years with very good results.

The Ohio Fruit ICM News is edited by:

Ted W. Gastier
Extension Agent, Agriculture
Tree Fruit Team Coordinator
Ohio State University Extension Huron County
180 Milan Avenue
Norwalk, OH 44857
Phone: (419)668-8210
FAX: (419)663-4233
E-mail: gastier.1@osu.edu

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is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely, and accurate, the pesticide user bears responsibility of consulting the pesticide label and adhering to those directions.

Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension.

TDD No. 800-589-8292 (Ohio only) or 614-292-1868

| Back |