

PLANT & PEST ADVISORY

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Mating Cicada on apple

Periodical Cicada Brood X

Larry Hull, Tree Fruit Entomologist, and Greg Krawczyk, Extension Tree Fruit Entomologist, Penn State University

Reprinted from *Fruit Times Newsletter*, May 18, 2004 Vol. 23, No. 7, Penn State University.

The life cycle of cicada is very unique and has no resemblance to any other known insect species. In mid to late May after seventeen years of living in the soil, mature nymphs dig themselves out of the ground in great numbers, crawl to the nearest tree trunk, shrub, or other vertical surface, and climb several inches to several feet up. The nymph's skin then splits down the back, and the winged, sexually mature adult emerges. The adult is about 1 1/2 inches long, mostly black, with red eyes and other reddish markings. The wings are large and clear except for orange-red veins. Males are capable of producing an ear-splitting, high-pitched whine. Females, which produce no sound, are attracted to the males to mate.

A week to 10 days after the males begin "singing," the females begin to lay eggs. Each female lays up to 400 eggs in 40 to 50 pockets in the wood of several small branches of many types of trees. More than 75 species of trees are known to be attacked. The type of branch preferred by the females is about the width of a pencil up to 1/2 inch in diameter or a little larger. To lay eggs a female slices into the wood of the branch with her egg-laying apparatus (ovipositor) and places the egg into the wood. She usually lays one to several dozen eggs in a single branch before moving to another branch or tree. This egg-laying activity lasts approximately 30 days, and about 6 to 7 weeks later the eggs hatch into tiny white nymphs. The nymphs fall to the ground and burrow into the soil to feed on grass roots and, eventually, tree roots for the next 17 years. A numbering system established in 1893 to keep track of these broods is still used today.

Cicadas damage fruit trees in two ways. The most obvious damage is done during the egg-laying process. The slits made by the female in small branches severely weaken them; often the weakened branches snap off in the wind. Under a heavy attack a majority of the branch tips may be killed. In larger trees, where most of the branches are larger than the preferred thickness for egg laying, the loss of even most of the branch tips may not severely damage the tree. However, in small trees 4 years old or less, most of the branches are of the preferred size. Under a heavy attack such a tree can be severely damaged and sometimes killed.

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In Memoriam

It is with great sadness that we inform you of the passing of Dr. Sridhar Polavarapu on Friday May 7, 2004. Sridhar was one of the most respected faculty members in his department, college, and the New Jersey agricultural community. He was a true land grant scholar whose service to New Jersey and dedication to teaching and mentoring will be greatly missed by the Cook College and NJAES community.

Sridhar, born in India and recently turning 43, came to Rutgers as an extension specialist in 1994, after completing his Doctorate at the University of New Brunswick in Canada. Sridhar received many honors during his career. Most recently, he was honored by Cook College and the NJAES with the Abraham Weisblatt Award, an endowed award that recognizes "across the board" excellence in teaching, research and outreach. He was also recently honored by the New Jersey State Board of Agriculture with a resolution to thank him for his service to New Jersey agriculture and the blueberry and cranberry industries.

Sridhar spent a large portion of his time at the Blueberry and Cranberry Research and Extension Center in Chatsworth with his staff, students and post docs. Sridhar's primary research dealt with insect control in blueberry and cranberry bogs. He also served the apiary and small fruit industries.

*Keith R. Cooper
Executive Dean
Cook College, Rutgers University*

CICADAS FROM PAGE 1

Therefore, control measures should be concentrated on these small trees. Moreover, with the emphasis placed on early training and pruning of fruit trees, the loss of incipient scaffold limbs can affect the productivity of a tree for the rest of its life.

The second type of damage is less obvious. After entering the ground the nymphs eventually attach themselves to the roots of the fruit tree, insert their needlelike mouthparts into the roots, and feed on nutrients that would otherwise help the tree grow and produce fruit. Feeding by hundreds or even thousands of these insects on a tree root system for 17 years probably affects the tree's productivity, although this has never been fully documented.

Monitoring

It is difficult to predict whether or not a particular orchard will be severely affected. The best strategy is to be alert for the first signs of male "singing" and to scout the orchards intensively a week later to look for egg-laying females. Considering the potential damage this insect can cause, a fruit grower can take several actions to minimize any detrimental effects.

Cultural management

Such actions include delaying planting to avoid cicada emergence and postponing until summer the winter pruning of trees less than 4 years old. Delayed pruning would decrease the probability of damage to incipient scaffold limbs and give the grower a chance to remove damaged wood after cicadas have finished laying eggs. Summer pruning and the removal of trimmings from the orchard, if done within the 4- to 6-week period after eggs are laid but before nymphs fall to the ground, would allow the grower to prevent many cicadas from feeding on tree roots for the next 17 years.

During the emergence period the most immediate problem is to protect trees (especially young trees) from damage caused by egg laying. There are two strategies to accomplish this objective, depending primarily on the size of the orchard. Trees in small orchards or backyards can be protected mechanically by enclosing them in netting or some other kind of cloth for the duration of the egg-laying period. This cloth should have a mesh size no larger than about 1/4 inch. The netting should be placed on trees when the first male singing is heard and removed after adult activity has stopped. All branches less than 1/2 inch in diameter should be protected.

Chemical management

If netting is not a viable alternative, pesticide sprays may be used. There are several pesticide options available to protect young and vulnerable fruit trees. Pyrethroid insecticides (i.e., Asana, Danitol, Warrior) provide quick knockdown, are fairly long residual action, and possess some repellent properties. The frequency of applications will depend on egg-laying pressure. We recommend scouting the orchard every 2 or 3 days during the egg-laying period to check on the effectiveness of any insecticide applications that have been applied. If much egg-laying activity is apparent, another application should be considered.

Remember that a constant vigil must be kept during an outbreak because cicadas can reinvade an orchard from adjacent woodlots. Be aware that pyrethroids can be disruptive to all predators, in particular, Stethorus and the predatory mites in the orchard. In most instances, mite outbreaks will usually follow the May and June applications of pyrethroids. With small trees, however, this is usually manageable. In orchards with older trees pyrethroid use is not recommended because subsequent mite problems may be more costly than the cicada injury. For larger trees we recommend an application of Lannate. This compound kills cicadas quickly but it lacks the residual of the pyrethroids. We do not know at this time if any of the newer neo-nictinoid products now available (e.g., Actara, Assail, Calypso and Provado) have much activity against cicada.

Submitted by Peter Shearer, Ph.D., Specialist in Entomology. □

Strip Apple Leaders Now

Win Cowgill, Agricultural Agent and Jon Clements, Specialist in Pomology, UMass

'Stripping' is a young tree training procedure used to isolate and protect the 'central-leader' of an apple tree. The three to four buds directly below heading cut on newly planted apple trees developing vigorous upright shoots are the ones we are looking at. Choose the single most vigorous upright shoot to remain as the leader, and then strip (with a downward pull) or pinch out the few (usually 2 or 3) competing shoots directly below the leader shoot you want to save/maintain. These should be removed as soon as possible to focus the growth into the central-leader and prevent a multi-leader tree from developing. Hand pruners may be used. These competing shoots are easiest to identify and remove when 3-4" long. For pictures of the 'stripping' technique, visit the UMass Fruit Advisor, <http://www.umass.edu/fruitadvisor>. Next week: using clothespins to form desirable branch crotch angles. □

Use Clothespins for Good Crotch Angles

Jon Clements, Ph.D., Fruit Specialist, UMass, and Win Cowgill, Agricultural Agent

After 'stripping' – which was described in last week's publication – the use of clothespins to develop wide (90 degree) and strong branch angles is the next most important young apple tree training technique you can accomplish. NOW is the ideal time to attach clothespins, when young shoots are 3-6 inches long and flexible.

Clip spring-type clothespins to the tree trunk to force acute branch angles into a more perpendicular, (90 degree) angle from the trunk. See the pictures. Take care not to tear or rip the shoots from the trunk when affixing the clothespins. Clothespin all shoots with narrow crotch angles that may form permanent scaffold branches – usually 4-8 clothespins per tree are required. This is assuming you have already stripped (removed) the top 3-4 shoots -competing with the leader as we described in last week's newsletter. After a few weeks, and when the 90-degree branch angle is established, the clothespins may be removed and reattached out onto the shoot tip to help hold it down and keep it growing in a more horizontal position. See our web page at <http://www.umass.edu/fruitadvisor/clements/clothespinrecycle.html>.

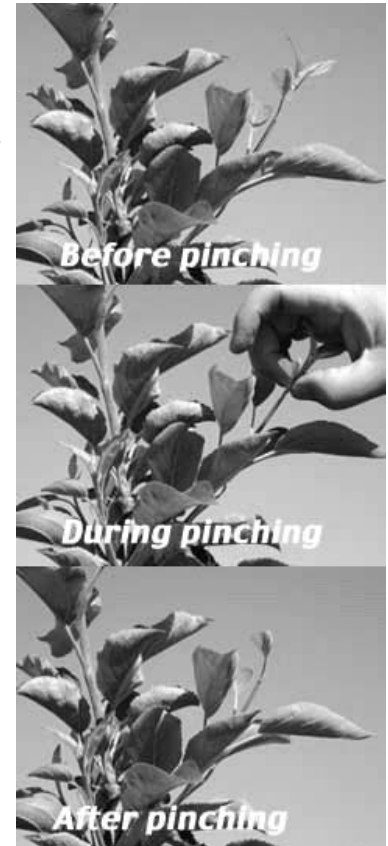
Take the time to train young trees with clothespins and you will be rewarded with wide scaffold branch crotch angles that will withstand a heavy fruit load for the life of the orchard.

Pinch Apple Shoots to Control Growth

Jon Clements, Specialist in Pomology, UMass and Win Cowgill, Agricultural Agent

'Pinching' shoots is a young tree training technique used on mostly first-, and second-leaf apple trees to promote fruiting and manage growth in the top of the trees of vertical-axis, slender-spindle, or super-spindle orchards. Rapidly growing shoots that are six to eight inches long, that are in the top one-fourth of the tree, and that originate from the leader, are candidates for pinching. Pinch-back the shoot two inches using your thumb and finger(s) or pruners. See the pictures to the right. To view a short web video of the technique, go to the UMass Fruit Advisor, <http://www.umass.edu/fruitadvisor/>.

Pinching will do two things: weaken the growth of the developing shoot so it is not as likely to compete with the leader, and promote the development of a fruit bud in the vicinity of the pinch if done now into early July. This technique will keep the tree from becoming top-heavy tree, which will eventually mandate a less desirable dormant pruning cut.



Preparing the Packinghouse for the 2004 Peach Season

Kathy Taylor, Horticulture Department, University of Georgia

Reprinted from the Southern Regional Peach Newsletter, Volume 4, No. 1, March 2004.

The Southeastern peach industry is known for the high quality of its fresh peaches. As the 2004 peach season approaches, it is time to ready the packinghouse for output of the best peach product. There are several areas in the packing facility that should be considered.

Hydrocooler. Consider running food safe detergent at 0.5% with appropriate defoamer (according to label) addition through the hydrocooler in preparation for the season. Cleaning the cooler in this way will remove contaminants that build up throughout the season and can cause fruit inking. If you elect to do this, be sure to do it at least two times. The first cleaning will dislodge these materials, but the second will more thoroughly remove them from the hydrocooler. Using pressure washing will improve your results.

Packing-line. As with the hydrocooler, contaminants accumulate on the packing-line, particularly on the brushes at the waxer. Research has shown that wax from the brushes accumulates pesticide residues. It is important to remove this source contamination not only at the beginning of the season but regularly throughout the season, if not daily, then weekly. Use a food safe detergent with brushing of the brushes while they are spinning. One of the best ways to improve fruit quality is to improve transitions that can cause damage on the packing-line. Our laboratory tests demonstrate that drops greater than 3 inches on metal and 6 inches on cardboard can cause injury to peach fruit as will velocity increases greater than 3 meters/s². This translates to a need to reduce the velocity and height of some drops, especially the drop of fruit onto and off of the packing line. Slowing the speed of fruit dropping onto the packing-line at the dry dump and into the packing box at the volume filler are two sites where great risk of damage can be mitigated. In addition, sites on the line where the direction of travel changes are locations of high risk for fruit injury. At these locations, use of foam padding to cushion impacts or addition of curtains to slow velocity can significantly reduce damage risk. In addition, reducing the slope of fruit drops can decrease velocity and reduce damage risk. An audit of your packing-line can establish points where padding or curtains can be added or slope of drop reduced. Contact your county agent to arrange an audit.

Cold room. As with the packing-line, careful scrutiny of cold room facilities can improve energy

management of the packinghouse, reducing costs of operation and improving storage conditions of fruit. Cold room entry curtains and door seals should be replaced annually and examined periodically during the season to determine if repair or further replacement is needed. An audit of the cooling unit will determine whether it is operating optimally. Cold room audits can be arranged through your county agent.

Food Safety. Many packing facilities are now attaining food safety accreditation. Even if you have not developed a program of Good Agricultural and Management Practices it is important to attend to several areas in the packinghouse to safeguard your product and your reputation. Some of the recommendations given above impact not only fruit appeal but also fruit safety.

Many buyers are now asking for a determination of pesticide residues on fruit they purchase. We have found that fruit pesticide loads entering the packing facility are below EPA tolerance maximums when recommended pesticides and their preharvest intervals are observed. After hydrocooling and fuzz removal by brushing the pesticide load on fruit is nearly undetectable with pesticide testing, but reloading of pesticides on fruit is possible if waxing brushes are not cleaned on a regular basis.

In addition, some retailers are asking for assurance that the fruit they purchase are free of human pathogens. Development of a food safety program that includes worker vigilance to support food safe practices such as hand cleaning and the wearing of latex gloves to avoid peel damage from fingernails will help assure produce free of human pathogens. For this program, be sure to equip the packing facility with hand cleaning stations, provide hand-cleaning instructions and be prepared to enforce regular cleansing by employees and visitors. It is important that simple measures are taken to ensure that the facility is free of rodents. Do a "spring cleaning" in the packing facility that removes all items other than approved items necessary to perform the packing process. All other items should be stored in other areas of the farming operation. Maintain good stock rotation practices for fruit boxes and other packaging materials. Use a regular pest management service that manages vermin with approved materials for a food handling facility.

Make an effort to assure that foreign objects do not end up in the pack out. Packing line employees should not have food or drink containers in the inspection or packing areas. They should be asked to limit jewelry to wedding rings and properly secured watches. Traffic and storage areas above the packing-line must have a lip that prevents the fall of foreign items onto the line. Make sure all lighting is covered with protective material that will prevent contamination of fruit or the package below with glass if it shatters.

Submitted by Jerome L. Frecon, Agricultural Agent. □

Apple Blister Spot

Bill Turechek, Ph.D., NYAES Plant Pathology,
Cornell University

Reprinted from SCAFFOLDS Fruit Journal, Volume 13, No. 10, Cornell Cooperative Extension, Geneva, NY.

Blister spot is an important and difficult to control bacterial disease of apple fruit on 'Mutsu' (or 'Crispin'), 'Fuji' (SunCrisp, our NJ55 variety can also have infections of blister spot) The disease can also affect apple foliage, leaf petioles, and shoot tips on a number of varieties, but these infections are considered important only in nursery production. The disease is generally most severe when temperatures are warm, and rain and high relative humidity are prevalent. After this period, the level of susceptibility sharply declines.

Fruit are most susceptible to infection beginning two weeks after petal fall and become increasingly susceptible for another two to four weeks afterwards. The fruit are infected through the stomata and it is assumed that the leaves are infected in a similar manner. Most infections occur on the lower half of the apple. The first infections are observed as small darkened water-soaked areas, generally around stomata (eventually turning into lenticels). From there, small raised blisters are formed. The blisters at first start with a light color but eventually become purplish-black as they expand towards the end of the growing season. The epidermal layer covering the blister dies and will often flake off the surface. This stage is the most obvious of blister spot and can be mistaken for tiny lesions caused by apple scab. The lesions, generally circular although they are sometimes lobed, rarely become larger than 4-5 mm in diameter. The infections are shallow, not extending more than 1-4 mm into the fruit flesh.

Disease Management

Applications of streptomycin (e.g., Agri-mycin 17 @ 8 oz/100gal) starting 2 - 2.5 weeks after petal fall and continuing for another 2 to 4 weeks, is the standard program for control of blister spot. Fosetyl-Al (Aliette 80WDG @ 0.5-1 lb/100gal) is another option for managing blister spot. Like streptomycin, fosetyl-Al should be applied 10 to 14 days after petal fall followed by two additional sprays at weekly intervals.

Currently, streptomycin and fosetyl-Al are the two best materials we have for managing blister spot. Both products will give about the same level of control when applied alone -and at the appropriate timings. Slightly better control can be achieved if the two products are tank-mixed; this mixture may also be useful for resistance management. Unfortunately, the level of control can be quite variable. In years when disease pressure is high, you should expect less than 50% control with the most effective treatment.

Technical Editor's Note: Streptomycin has been highly effective in controlling blister spot on both Mutsu and SunCrisp at the Rutgers Snyder Farm. Fosetyl also has activity on Phytophthora Collar and Root Rot; see the Bayer label for directions for use.

Submitted by Win Cowgill, Agricultural Agent. □

Fruit IPM

Dean Polk, Fruit IPM Agent

Peach

✓ **Stink Bugs and Other Catfacing Insects:** Hedge-rows and wooded borders are the main story this week. Dave Schmitt reports that fruiting trees and shrubs such as mulberry and possibly blackberry are harboring stinkbugs. Add this to the fact that wooded areas are well known to harbor these insects, you can see that most stinkbug pressure will come from edge rows. Small blocks with woods borders are also highly susceptible to damage.

✓ **Thrips:** Multiflora rose has been seen as a prime host of thrips. On Monday a number of blossoms were found that were covered with thrips. Thrips are also building up in clover. As the sprays for TABM start, the thrips issue is a strong argument for Spintor use if TABM sprays are going on thrips sensitive varieties that have clover in the ground cover or are near multiflora rose and other alternate hosts.

✓ **Tufted Apple Budmoth (TABM):** Treatments for TABM should be focused where TABM is a known problem. This includes most areas of the state Mercer County and south. Degree day (DD) timed treatments are outlined for either alternate middle (AM) applications where 4 sprays are needed per generation, full cover every middle (EM) applications where 2 sprays are needed per generation, or with the insect growth regulator (IGR), Intrepid, which should be applied full cover with 2 sprays per generation. Timings for these sprays, unless the prediction is too far in the future, are as follows:

County Area	Spray Type		
	AM	EM	Intrepid - EM
Southern	1 st 5/24-25, 2 nd 5/30-31	1 st 5/26-28	1 st 5/26-30
Central	1 st 5/28-29, 2 nd 6/3-4	1 st 5/30-6/2	1 st 5/29-6/4
Northern	1 st 6/1-6/3	1 st 6/4-6/5 approx.	1 st 6/3-6/7 approx.

✓ **Oriental Fruit Moth (OFM):** According to the Skybit modeling, egg hatch is complete in all areas of the state, although OFM trap counts are still high in some orchards. However, if 4 alternate middles or 2 complete insecticide sprays have been completed then OFM should not be treated as a primary target. Trap counts should bottom out over the next week to 10 days.

✓ **Plum Curculio (PC):** PC adults are difficult to find, but some activity was noted in some orchard blocks over the last week. After this week, insecticides that target PC should not be needed.

✓ **White Peach Scale (WPS):** Peter Shearer reports that WPS crawlers emerged late last week at RAREC in Upper Deerfield. Since crawlers have been out for about a week, sprays should go on now if WPS is present in your orchard. Crawlers will be active for another 2-3 weeks.

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Dr. Shearer’s 2003 tests showed that 2 applications of Diazinon 50W (3 lbs/acre) applied 1 week apart provided good control, and was comparable to one application of 4 oz/acre rate of Esteem 35WP. The Esteem label does state that “in-season sprays of Esteem 35 WP may not protect fruit from blemishes”. However, both materials are still the best bets for scale insecticides.

✓ **Bacterial Spot:** Moderate amounts of foliar bacterial spot were seen in two Laurel blocks in Gloucester County. Therefore inoculum is present, and on sensitive varieties copper or Mycoshield sprays should continue to be included as long as inoculum is present or up to 3 weeks before harvest.

Apple

✓ **Spotted Tentiform Leafminer (STLM):** A number of blocks have mine counts approaching treatment levels (>.5 mines per leaf). One farm in the northern part of the state has a mine count of over 1 mine per leaf. The neonicotine insecticides are all very effective for STLM control. These include Actara, Assail, Calypso and Provado. Assail and Calypso will also control codling moth, but rates need to be adjusted.

✓ **European Apple Sawfly (EAS):** Considerable injury is being seen in northern counties. This is most likely from late petal fall sprays. OP’s continue to be the standard needed for EAS control. If an effective material has not yet been applied, then this needs to be done as soon as possible.

✓ **Codling Moth (CM):** The first catch or biofix points have been reached in all areas of the state. Timing for the first of 2 sprays for the 1st generation is set at 250DD₅₀ and again at 550DD for standard insecticides OPs, carbamates and pyrethroids. These timings are 150DD and again at 450DD for the new insecticides Assail, Calypso and Intrepid. The following chart outlines these times for southern, central and northern counties. Growers should try to time sprays the best way possible and not cut insecticide rates. Our trap counts so far this year are about twice the level we usually find at this time of the season.

County Area	Application and Insecticide Type	
	Standard Insecticides	New Insecticides
Southern	2 nd 5/31-6/1	2 nd 5/27-5/28
Central	2 nd 6/4-6/5	2 nd 5/29-5/30
Northern	1 st 5/26	1 st 5/22, 2 nd 6/7 approx.

✓ **Tufted Apple Budmoth (TABM):** See peach section.

✓ **Apple Scab:** Scab has been found in several blocks in both southern and northern counties. Foliar infection is above 10% of leaves infected at one site. Where scab is present, spores have to be either deactivated or burned out. If Dodine/Syllit has not been used on your farm for a period of at least several years, then a Syllitt/Captan combination is one option that can be used, but remember that it takes at least 2 complete applications. Several applications of Flint or Sovran or several applications of a high rate of an SI will also serve to deactivate lesions.

Grape

We are monitoring several vineyards throughout the state, and from time to time will relate what we are finding in the newsletter.

✓ **Grape Berry Moth (GBM):** The first adults were noted this past weekend at Cream Ridge. Adults are small (1/4” long), with a brown head. Wings are banded with a brown front portion, dark to light gray in the middle, mottled brown to light gray on the posterior half, with a darker brown tip. Adults usually start to emerge from early to late May, and will lay eggs on flowers and newly set berries. There are 2 to 3 generations a

year in New Jersey. Sprays are not needed at this time. When berries are set, growers may find it useful to examine newly set fruit for the presence of webbing. A provisional threshold was established in the late ‘80s recommending an insecticide when at least 5% of the bunches show webbing (wine grapes). This level of infestation is seldom reached during the first brood.

✓ **Downy Mildew:** Along with our modeling information for insects and diseases on other crops, we are also subscribing to the grape disease modeling supplied by Skybit. The models have recorded a number of infections for downy mildew. Additional infections are forecast for 5/26 through 6/3.

✓ **Powdery Mildew:** Infections are also predicted for the same periods – 5/26 through 6/3.

Blueberry

✓ **Leafrollers:** Tray samples indicate that the number of larvae seen on trays has decreased to 35% positive samples since the previous week. The highest level seen was at 4 larvae per 1000 clusters which is well below threshold. Now that fruit has been set, clusters are being examined for worm injury as part of our sampling. Low levels of fruit feeding have been found in 45% of fruit samples. Typical levels are about 2 injured fruit per 1000. Higher levels of injury are sometimes seen along wooded edges. Again this is well below treatment level.

✓ **Aphids:** We are now seeing aphids in 75% of our samples although most levels are still under 10% infestation. Only 15% of samples seen are over 10%. The highest level seen to date was at 35% of shoots infested. If aphids are the primary target, then include Provado in the spray. If aphids are not the primary target, but some aphid suppression is desired, along with control of other pests such as Lep. Larvae, then use Diazinon or Lannate. If no aphid suppression is desired, then consider Imidan or Guthion. One caution with Guthion – observe the REI of 2 days for scouting or 4 days for other labor, and the PHI of 7 days.

✓ **Thrips:** Thrips levels are at similar levels seen last week, with 46% of samples being positive for thrips, and 23% showing greater than 10 per 100 fruit clusters. The highest thrips level seen was 38/100 clusters which is about half the provisional threshold of 70 per 100 clusters.

✓ **Plum Curculio (PC):** PC activity has decreased over the last week. Only 4% of tray samples showed adult activity, compared to 12% during the previous week. Fruit sampling has found 19% of samples with low levels of injury in the form of crescent shaped egg laying scars. All sprays for PC should have already been applied. It will do no good to apply additional materials at this time. Most conventional farms are well below the 0.5% fruit injury level.

✓ **Mummy Berry:** The second phase of Mummy Berry is seen in the form of developing fruit mummies on the bush. Fruit sampling has shown that infection rates are very low, with only scattered infections present on most commercial farms. An untreated field was recently seen which had over 50% of shoots with primary strikes and numerous fruit infections. Therefore, disease pressure was present, and most growers did a good job with primary treatments.

✓ **Admire Section 3 Label:** EPA approved the expanded label for Admire on 5/21. While we have approval, Bayer needs some time to process the full label. Bayer has sent on a supplemental label for Admire on blueberries (available on the web at <http://www.rce.rutgers.edu/labels>). The supplemental label outlines the same rates, application methods and

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Fruit Research Twilight Meeting and Picnic

Jerome L. Frecon, Agricultural Agent

A meeting to bring growers and allied industry up to date will be held June 30, 2004 at 5:00 P.M. at the Rutgers Agricultural Research and Extension Center, 121 Northville Rd. in Bridgeton (near Centerton in Upper Deerfield Township). A tour of major tree fruit plantings will be conducted as Specialists Peter Shearer, Norm Lalancette, and Brad Majek discuss research on peach insects, diseases, weeds, and ground cover management. Early peach and apricot varieties will be on display and discussed. Specialized orchard equipment may also be available.

A tour will be conducted of the TR-4 pesticides research plots. NJ Pesticide recertification units in category and core will be provided at the end.

A picnic supper will also be provided so it is important that we have a pre-registration count. All interested in attending should call 856-307-6450 Ext. 1. A complete copy of the program will be mailed and posted on: <http://gloucester.rce.rutgers.edu>. The meeting and picnic are sponsored by Rutgers Cooperative Extension in cooperation with the New Jersey State Horticultural Society. □

Calendar of Events

May 27, 2004, 6:00 p.m. – Blueberry Twilight Meeting, Atlantic Blueberry Company, 7201 Weymouth Rd., Hammonton, NJ. Open to commercial blueberry growers. Contact: Dr. Gary Pavlis, Rutgers Cooperative Extension of Atlantic County. 609-625-0056. For directions, call Atlantic Blueberry at 609-561-8600.

June 3, 2004, 6:00 p.m. – Wine Grape Twilight Meeting, Heritage Vineyards of Richwood, 480 Mullica Hill Road, Richwood, NJ. Contact: Jerry Frecon at Rutgers Cooperative Extension of Gloucester County at 856-307-6450 ext 1.

June 30, 2004 – 5:00 p.m. – Twilight Fruit Research Meeting at Rutgers Ag Research and Extension Center, 121 Northville Road, Bridgeton, NJ. Contact: Jerry Frecon, Rutgers Cooperative Extension of Gloucester County at 856-307-6450 ext 1.

July 22, 23, 24, 25, 2004 - Thursday thru Sunday – New Jersey Peach Festival and Gloucester County 4-H Fair will be held at the 4-H Fairgrounds, Rte. 77, Mullica Hill, NJ. Program information forthcoming on website <http://gloucester.rce.rutgers.edu/>

NJ Pesticide Applicator Units to be provided at each of the evening fruit meetings.

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restrictions as are present on the full label. Therefore, grower use will not change over the season when the full label becomes available. The Admire/blueberry label must be in your possession at the time of application. The label states a use rate of 3.3 to 3.9 fl. oz. per 1000 row feet, or 16 to 32 oz. per measured acre (16-19 oz is all that is needed). There is a PHI of 7 days, and like Provado, there is an REI of 12 hr. Apply with ground equipment in an 18" band on both sides of the row or chemigate through a drip irrigation system. Dry soil should be irrigated just prior to application, and the application itself should be followed with .5 to 1" of irrigation. Apply in the evening, so the Admire is not broken down by sunlight. Do not apply more than .5 lb. a.i. of imidacloprid per season, and make no more than 1 application of Admire to the soil per season.

Admire when used to control **oriental beetle grubs** will also give several weeks of **aphid** control. However it takes a

few days after application to accumulate in the plant to the levels required for aphid control.

Admire should be applied at least 7 days before the first picking, or be applied as a post harvest material. Grubs should be targeted at their youngest stage, or as they hatch and are at the 1st and 2nd instar stages, and while still close to the soil surface. Admire has little effect on 3rd instar and older larvae. Older 3rd instar grubs start to appear by mid August. Therefore, applications should be made well in advance of that date. The first oriental beetle eggs will probably appear around the end of June. Therefore try to delay application as late as possible. Applications made in May may simply degrade if exposed to the sun. With the earliest varieties like Weymouth, application can be made immediately after the last picking. With Duke and Bluecrop, try to make an application 7 days before the first picking. With late season varieties like Elliott, apply no later than July 1.

Insect Trap Captures

Tree Fruit – Southern Counties

WeekEnd	STLM	TABM-A	CM	AM	OFM-A	DWB	OFM-P	TABM-P	LPTB	PTB
14-May	446	10	7		35		13	19		
21-May	149	39	10		29		19	47	78	5

Tree Fruit – Northern Counties

WeekEnd	STLM	TABM-A	CM	AM	OFM-A	DWB	OFM-P	TABM-P	LPTB	PTB
14-May	1160	5.0	5.9				49.7	4.2		
21-May	128.8	14.2	14.8		7.3	2.0	25.9	13.3		

Blueberry – Atlantic County

Week End	CBFW	RBLR	OBLR	SNLH	OR BEET	BBM
14-May	0.22	22.3	0			
21-May	1.1	1.7	8.8		0.0	

Blueberry – Burlington County

Week End	CBFW	RBLR	OBLR	SNLH	OR BEET	BBM
14-May	0	11.7				
21-May	0	3	0			

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PLANT & PEST ADVISORY FRUIT EDITION - CONTRIBUTORS

Rutgers Cooperative Extension Specialists

Robert Belding, Ph.D., Pomology
George Hamilton, Ph.D., Pest Management
Norman Lalancette, Ph.D., Plant Pathology
Sridhar Polavarapu, Ph.D., Entomology
Peter W. Shearer, Ph.D., Entomology

NJAES/Cook College

Joseph Goffreda, Ph.D., Breeding
Rutgers Cooperative Extension Agricultural Agents
and Program Associates

Atlantic County, Gary C. Pavlis, Ph.D. (609-625-0056)
Gloucester County, Jerome L. Frecon (856-307-6450)
Hunterdon County, Winfred P. Cowgill, Jr. (908-788-1338)
Morris County, Peter J. Nitzsche (973-285-8300)
Warren County, William H. Tietjen (908-475-6505)
Fruit IPM, Dean Polk (609-758-7311)

Meredith Compton, Program Associate (908-788-1338)

Gene Rizio, Program Associate (856-566-2900)

David Schmitt, Program Associate (856-307-6450)

NJAES Sustainable Agriculture Coordinator

Olga Wickerhauser

Newsletter Production

Jack Rabin, Associate Director for Farm Services, NJAES
Cindy Rovins, Crop Management Communications Editor

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Rutgers Cooperative Extension - NJAES
U.S. DEPARTMENT OF AGRICULTURE
Rutgers - The State University of New Jersey
Plant & Pest Advisory
18 College Farm Road
Cook College
New Brunswick, N.J. 08901-8551

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