West Virginia University
Extension Service

Cooperative Extension Service

The Orchard Monitor

Committed to the Integration of Orchard Management Practices

EXTENSION SPECIALISTS
Henry Hogmire ENTOMOLOGY
Alan Biggs PLANT PATHOLOGY

April 20, 2009

UPCOMING EVENTS

April 23, 6:00 p.m. – Tree Fruit Grower Twilight Dinner and Meeting at Gourmet Central (in Hampshire Industrial Park), Romney, W. Va. WVU Extension Specialists will discuss early-season insects and diseases and their management strategies. Dr. Gerald Leather, Hampshire County Extension Agent, will discuss the results of chemical mowing experiments conducted in 2008. For more information contact the Hampshire County Extension Office at 304-822-5013.

April 26-29. – West Virginia Agritourism Conference at Quality Hotel Conference Center, Harpers Ferry, WV. Great presenters and good ideas: Good Agricultural Practices Training, A Crash Course in Group Sales, Agritourism in Action Tour, Social Networking, and breakout sessions. The Conference will also feature a bus tour of agritourism attractions in the Eastern Panhandle, as well as a number of shorter informational workshops. Participants are encouraged to bring a camera, notebook, and photos and publications of their own operations to share with the group. For more information, contact Cindy Martel at 304-558-2210 or at cmartel@ag.state.wv.us, or visit www.wvaagriculture.org.

April 30, 7:00 p.m. - Spring In-depth Fruit Meeting at Virginia Tech's Alson Smith Agricultural Research and Extension Center, Winchester, Va. The agenda will include seasonal updates by Virginia Tech Extension Specialists, and Dr. Rongcai Yuan will provide an in-depth discussion of "Return bloom of apples". For more information contact the Frederick County Extension Office at 540-665-5699, or email Cyndi Marston at cmarston@vt.edu.

May 5, 6:00 p.m. – Tree Fruit Grower Twilight Dinner and Meeting at Nob Hill Orchards, 1572 Reunion Corner Road (1.7 miles from Route 51), Gerrardstown, W. Va. Following dinner, seasonal updates will be provided by Extension Specialists from the WVU Kearneysville Tree Fruit Research and Education Center, and a discussion of the orchard operation will be provided by the orchard owners, George and Susanne Behling. For more information contact the WVU KTFREC at 304-876-6353.

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ENTOMOLOGY

Oriental fruit moth adult

Oriental fruit moth adult emergence was first detected at the WVU KTFREC on April 3, when three moths were captured in two pheromone traps in apples. This was followed by capture of 38 moths in four traps on April 5-6, resulting in the setting of biofix on April 5, which is five days earlier than last year. Interestingly, biofix in peaches was not set until April 18. Using a base temperature of 45ºF and upper temperature of 90ºF, degree days (DD) should be accumulated from biofix in order to properly time spray applications. Pheromone traps should be monitored on a weekly basis to determine if control is needed. Control of the first generation is justified where the pheromone trap capture exceeds 15 moths/trap/week **in peach** and 30 moths/trap/week **in apple**. **In peach**, control options include Assail or Intrepid at 70-100 accumulated DD after biofix (1-3% egg hatch), then at 250-275 DD (25-31% egg hatch), if needed; or Imidan, Diazinon, pyrethroids (Adjourn, Ambush, Asana, Baythroid, Lambda-

Cy, Mustang Max, Perm-UP, Pounce, Proaxis, Silencer, Tombstone, Warrior), Altacor, or Delegate at 170-195 DD (10-14% egg hatch, normally about shuck split), then at 350-375 DD (54-61% egg hatch), if needed. **In apple**, control options include Rimon at 200-250 DD (15-25% egg hatch); or Assail, Calypso, or Intrepid at 250-275 DD (25-31% egg hatch, normally petal fall); or azinphosmethyl (Guthion), Imidan, Diazinon, Altacor, Delegate, or Avaunt at 350-375 DD, (54-61% egg hatch). Through April 19, 92 DD (2% egg hatch) have accumulated since biofix at the WVU KTFREC.

European apple sawfly adults begin emerging from the soil at pink and females deposit eggs in the calyx end of young apple fruit from bloom through petal fall. Tunneling by the hatching larva creates a large circular russeted scar that originates from the calyx. The larva will typically leave the first fruit and tunnel to the core of a second fruit, consuming most of the flesh. Frass (excrement) will protrude from these injured fruits which will later fall from the tree. Where white visual traps have been used for adult monitoring, petal fall control is justified if the accumulated pre-bloom and bloom capture reaches 3 or more per trap. Where traps have not been used, control is recommended if fruit injury was observed last year. Early petal fall timing usually provides effective control, with options including Avaunt, Assail, Calypso, azinphosmethyl (Guthion), Imidan, Sevin, or Actara.


EAS larval injury on young fruit


EAS larval injury on older fruit

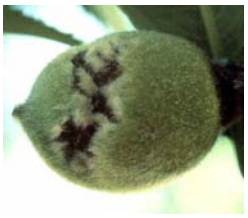

EAS larval tunneling in second fruit

Tarnished plant bug and stink bugs become active on warm spring days and begin feeding on peach and nectarine buds when they enter the pink stage of development. Feeding injury from pink through petal fall causes bud, flower or fruit drop, and is usually of no consequence except in years of light crops due to winter freeze or spring frosts. Feeding injury from shuck split until pit hardening results in fuzzless, corky, depressed areas and fruit deformity called "catfacing" injury. Feeding on slightly larger fruits results in scarring injury, which is similar to catfacing injury but without deformity.


Tarnished plant bug adult


Brown stink bug adult


Catfacing injury shortly after shuck fall

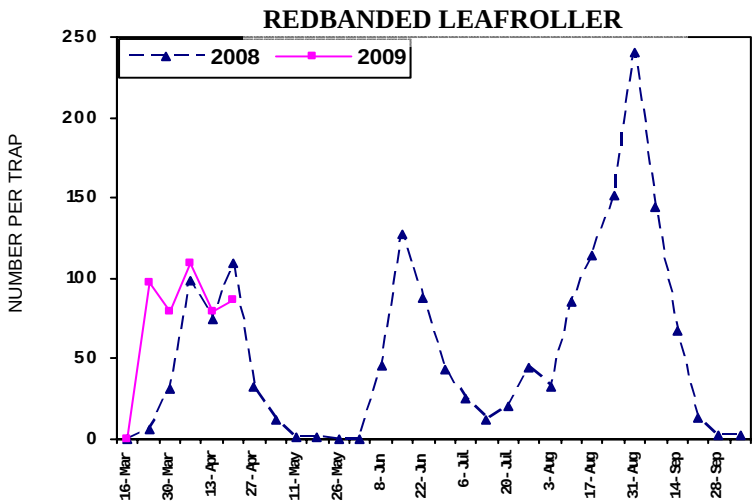

Catfacing injury closeup

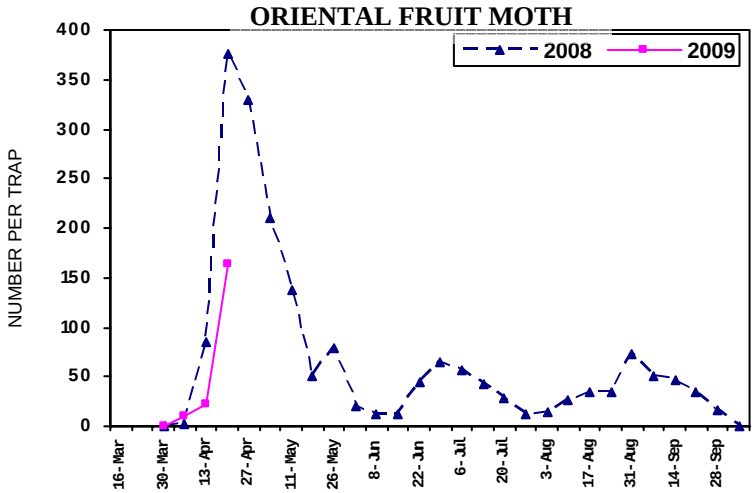

Scarring injury

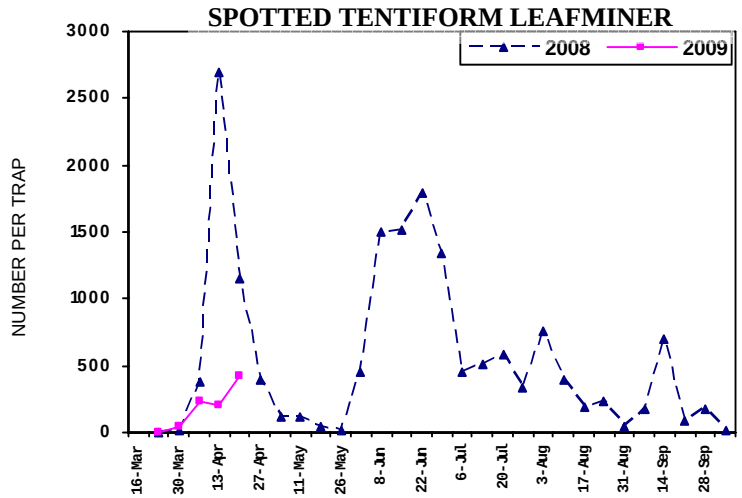
These pests are difficult to control because they are not full-time residents on fruit trees, but move frequently between broadleaf weed hosts and fruit trees to cause injury. Maintaining thorough and frequent spray coverage from shuck split until a few weeks after shuck fall is critical to minimizing fruit injury. Pyrethroids (Adjourn, Ambush, Asana, Baythroid, Lambda-Cy, Mustang Max, Perm-UP, Pounce, Proaxis, Silencer, Tombstone, Warrior) are considered the most effective chemical class for control of these pests, but application after petal fall is more likely to result in mite outbreaks, and therefore they should be used with caution. Other options include Beleaf, Thionex, Lannate, Imidan and Actara (higher rate). Maintaining good broadleaf weed control will also reduce fruit injury from this pest complex.

Pheromone traps should be installed on May 1 for monitoring emergence of lesser peachtree borer in peach orchards.

PHEROMONE TRAP COUNTS
WEST VIRGINIA UNIVERSITY KTFREC







PLANT PATHOLOGY

Apple scab. We've recorded five infection periods on varieties showing green tip on March 23, and one additional infection period since the last newsletter. Our sixth infection period is in progress while this is being written. Our fifth infection period spanned 48 hours at 44° F and was accompanied by 0.49 inches of rain during the period April 13 - 16.

Apple scab ascospore maturity degree-day tracker. With a green tip estimate for March 23, 2009, estimated ascospore maturity is approximately 60% as of Monday, April 20, 2009.

Table 1. Dates and conditions for apple scab infection periods at the WVU - KTFREC, 2009.

No.	Date 2009	Hours/ degrees F
1.	March 25-27	28 hr/43 F
2.	March 27-29	29 hr/51 F
3.	April 1-2	14 hr/49 F
4.	April 3	9 hr/60 F
5.	April 13-16	48 hr/44 F
6.	April 20	TBD

Streptomycin reminders. For best blossom blight control, apply Streptomycin just *before* an anticipated infection, then re-apply it in 4 days if high risk conditions persist. High risk occurs with any combination of three out of the following four criteria: 1) blossoms open, 2) bacteria present on blossom surface, 3) average temperature for the day of 60° F, and 4) sufficient moisture in the form of rain or dew. Note that infection of susceptible cultivars is very likely to occur if all four of these criteria are satisfied, especially if there is a history of the disease. Streptomycin applied after infection can provide acceptable control, however the level of control that is achieved declines with time and declines more rapidly as temperature increases.

Avoid alternate-row-middle programs for fire blight control. If this method is used and if infection conditions occur after the first half spray, follow immediately with the second half spray of streptomycin. Try not to exceed 3 - 4 antibiotic sprays per year in order to minimize the chance that the fire blight bacterium will develop resistance to streptomycin (although in some years more than 3 or 4 sprays will be needed). *Make blossom treatments strictly on whether an infection is expected or has occurred, not on how severe that event might be.*

Peach scab and Rusty spot. The shuck split - shuck fall stage is the time to initiate fungicide applications for managing these diseases on peaches and nectarines. Follow instructions in the 2009 Spray Bulletin for the selection of spray materials for these diseases. For scab control, remember that Bravo is highly effective but is not labeled for applications after the shuck fall stage. Control of rusty spot will be facilitated by adequate control of powdery mildew in adjacent apple orchards.

Plum pox virus survey is to be conducted this spring. This May through June, the West Virginia Department of Agriculture will be conducting a survey for plum pox virus (PPV) on commercial peaches, plums and ornamental *Prunus* species in Berkeley, Jefferson and Hampshire counties. PPV can reduce crop yields and deform stone fruit crops. The virus is from Europe and has been found in

the northeastern U.S. since 1999. The disease has not been found in West Virginia. Finding PPV in an orchard at early stages of infection greatly benefits the grower and neighboring growers by slowing the progression of this potentially devastating disease. You can help protect the health of stone fruit crops in West Virginia and the region by volunteering to have your orchards and ornamental trees sampled. Growers and homeowners can also choose to collect and send symptomatic leaf tissue to the Guthrie Agricultural Center for testing throughout the growing season. More information on recognizing this disease is available on the web at: www.wvdaplantpath.com. To participate in the survey call (304-558-2212) or email (ndart@ag.state.wv.us). At this time testing is available free of charge. *(Prepared by Norm Dart, WVDA Plant Pathologist.)*

Weather Data from Kearneysville Davis Vantage Pro 2 includes an electronic leaf wetness sensor and a soil temperature probe. The information is viewed on an hourly basis on the link labeled "hourly weather data for the previous 8-day period" from the Weather Stations page (http://www.caf.wvu.edu/kearneysville/weatherstations.htm). This station can be viewed from The Weather Underground with this URL (http://www.wunderground.com/weatherstation/WXDailyHistory.asp?ID=KWVKEARN3).

Henry W. Hogmire
Extension Specialist-Entomology

Alan R. Biggs
Extension Specialist-Plant Pathology