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

THE OHIO STATE UNIVERSITY Newsletter Extension

Fruit ICM News

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In This Issue:

Calendar

August 13: The USDA has announced that farmers can sign up for the Quality Loss Program (QLP) beginning Aug. 13. For more information, contact your local USDA Service Center or Farm Service Agency office. Source: http://www.fruitgrowersnews.com

August 20: Ohio Fruit & Vegetable Young Grower Tour, beginning at Hillsboro. For more information contact Ohio Fruit and Vegetable Growers at 1-614-249-2424 or growohio@ofbf.org. Complete information with registration form is available at http://www.ofbf.org by clicking on "Upcoming Events."

August 20: Horticulture Field Night, Southern State Community College, 200 Hobart Drive, US Rte. 62 north of Hillsboro. For information, contact Brad Bergefurd, 1-800-860-7232, or bergefurd.1@osu.edu

August 23: Ohio Grape & Wine Day & Grape Twilight Tour, OARDC Grape Branch at Kingsville and Markko Vineyard. From 1:30 to 4:45 p.m. take a tour through the vineyards of the Grape Research Branch with the OARDC staff. Some of the topics for the tour include: Seyval Training Systems Results (Dave Ferree); Deer and Wild Turkey control in Vineyards (Maurus Brown); Compost Studies (Roger Williams); Pinot Gris Training Systems Study (Dave Scurlock); New Strategies for Crown Gall Control (Mike Ellis); New and Interesting Wine Cultivars for Northeastern Ohio (Greg Johns, Todd Steiner, Jim Gallander); Wine Ashtabula County Farmland Preservation (David Marrison); Tasting of Research

Wines from new cultivars; and much more! A twilight tour and fish fry is planned to begin at 5:00 at Markko Vineyard with social time and wine tasting. At 5:30 a fabulous Lake Erie walleye fish fry and fresh sweet corn dinner will be served. Dinner with complimentary wine will be $15 per person payable at the door. Be sure to reserve a spot by 3:00 p.m. August 16th by calling 440-576-9008. Don't miss this opportunity to explore the wonderful vineyards, enjoy a delicious dinner, and top off the evening with fantastic fellowship!

September 18-20: Farm Science Review - ***Pesticide credit can be earned at 2001 Farm Science Review!*** Applicators with a pesticide license can receive recertification credit at this year's Ohio Farm Science Review. For more information, contact the Pesticide Education Program, OSU Extension, at 1-614- 292-4070 or visit the website at http://www.ag.ohio-state.edu/~pested

"Cat-facing" Injury on Peaches

Source: Roy W. Rings, Ohio Farm and Home Research, 1955, Volume 40, pp 28-30

Note: Our eagle-eye scouts have once again continued to baffle the expert (Celeste Welty). Both Jim and Gene recently observed and obtained specimens of the 4th instar of the green stink bug, as identified by Celeste.

Tarnished plant bugs and several species of stink bugs have been causing mild to severe injury to Ohio Peaches for many years. The significance of such injury has not been recognized until recently because of the much greater damage caused by the plum curculio, oriental fruit moth, and orchard mites.

One of the most common and easily recognized types of injury is represented by the dimpled or deformed appearance of injured fruit, which is usually referred to as "cat-facing." Experiments conducted at Wooster in the 1950's have shown that typical cat-facing may be produced by the tarnished plant bug, the green stink bug, the one-spot stink bug, the dusky stink bug, the northern brown stink bug, the clover stink bug, and two other stink bugs of minor importance. All of these insects are true bugs with sucking mouthparts and may be conveniently referred to as "cat-facing insects" since they cause deformities in the fruit.

Because feeding habits are alike it is impossible to distinguish the injury caused by the different species. When these sucking bugs feed upon fruit or foliage they introduce a salivary enzyme which breaks down the cellular tissue and then they extract the dissolved food material. Although the healthy tissue surrounding the injured area grows at a normal rate, a scar is formed over the damaged area and normal development is slowed down at this point. When this occurs on peaches early in the season, the result is a cat-faced or deformed fruit.

Feeding on the surface of the fruit by plum curculio sometimes results in a mild form of cat-facing and for this reason the term "cat-facing insects" includes not only the sucking bugs but also the plum curculio.

In addition to cat-facing there are at least five other distinct types of injury produced by sucking bugs which are not generally recognized.

Blossom and fruit drop injury. The blossoms or fruit may drop if they are attacked any time between

early bloom and the time the fruit is about one-half inch in diameter. In 1954 cage tests the tarnished plant bug caused 100 percent of the blossoms to drop even when the insects were caged for only 24 hours. Fruits injured by the plum curculio may drop after they have reached one-half inch in diameter but usually this is a result of brown rot infection following feeding.

Cat-facing or dimpling injury. The fruits may be slightly dimpled or severely deformed as a result of insect feeding during the period from petal-fall stage until the fruit reaches one-half inch in diameter. In the case of stink bugs the deformation is usually associated with fuzz removal and the development of brown, scarred and sunken areas. Although deformation is typical in the case of the tarnished plant bug, fuzz removal and scarring are infrequent.

Gummosis injury. In some instances the fruit has gum exuding in droplets or strings from the point of injury. This is known as gummosis injury. During rains these gum droplets or strings are softened and spread out over the surface of the fruit. Usually the gum is blackened by the growth of a sooty fungus which renders the fruit unmarketable. Peaches are susceptible to such injury from the time they are about three-fourth inch in diameter up to about two inches in diameter.

Water-soaked injury. In this case the fruit has dark-green, depressed areas which have a water-soaked appearance where stink bug feeding has taken place. This type of injury may sometimes be associated with gum oozing out, but is recognizable even though the hardened gum may have been removed. This injury occurs when peaches are from one and one-half to two inches in diameter.

Ripe fruit injury. This type of injury is rather rare and most often associated with the green stink bug. The fruit has small, depressed areas on the surface as a result of stink bugs sucking juices from the ripening fruits.

Control. Since most of the sucking bugs breed upon plants other than peach, it is evident that the most effective control measure is to get rid of these host plants growing in and around the orchard. Many species of weeds such as horse-weed, white cockle, tall ironweed, and common mullein are natural hosts for stink bugs and plant bugs and should be removed or mowed frequently if they are in or near peach orchards. Fence rows containing elderberry, wild cherry, black locust, and honey locust may support large populations of the green stink bug and should be removed or sprayed where practicable.

Cover crops do not seem to be as important as weed patches and fence rows as harboring and breeding places for cat-facing insects. Legumes, such as alfalfa, red clover, and soybeans, however, serve as breeding places for the tarnished plant bug and most species of stink bugs. If the use of these crops in areas adjacent to the orchard is avoided the hazard of cat-facing damage can be reduced. Cover crops such as soybeans within the orchard seem to offer little hazard, probably because they receive enough drift during normal spraying operations to control these pests.

Since the relative importance of sucking bugs may vary from one orchard to another, no standard insecticidal schedule can be recommended for the control of these insects.

The tarnished plant bug, which is probably the most important member of this group, is most abundant on peaches from the pink to the petal-fall stage. Next spring, consult the 2002 Commercial Tree Fruit Spray Guide for current recommendations for these stages.

The insecticidal control of stink bugs is complicated by variations in their habits, life history, and relative abundance in different orchards and in different sections of the state. In general, stink bugs have one generation each year although a partial second generation seems to occur quite frequently. Adult

stink bugs which have overwintered in debris and fence rows enter the orchard at the full bloom stage. They are abundant for a period of about six weeks after bloom. Products which control plum curculio at petal fall will also control adult stink bugs.

Black Hunter Thrips

Source: Dr. Robert P. Holdsworth, Research Circular 192, August 1972 "Major Predators of the European Red Mite in Ohio"

Over the past several scouting seasons, black hunter thrips have been observed in some of your apple orchards. The black hunter thrips adult is black, narrow, and tiny (1/16 inch long). The young is purplish-red and closely resembles the adult. They move slowly and are easy to find because they are more numerous than most other predaceous insects on apple.

Black hunters overwinter as adults in the humus and leaf litter in woods and also under bark scales on apple trees. they become active in mid-April and are found on apple twigs before European red mite hatch. Black hunters feed on European red mites and their eggs. These thrips are valuable predators because they can subsist on low populations of mites, yet become numerous if mites increase.

Banded Thrips

Source: Borrer, Triplehorn, and Johnson, An Introduction to the Study of Insects

Another family in the thrips order includes banded thrips, which are also minute, slender bodied insects. They can be either wingless or winged. The wings, when fully developed, are four in number, very long, and narrow with few or no veins, and fringed with long hairs. These hairs give the order Thysanoptera its name. The adult banded thrips is yellowish to dark brown, with three white bands on the wings. The larvae are yellowish, shading into orange on their posteriors.

Banded thrips have been observed feeding on apple rust mites, other mites, other thrips, aphids, and other small insects.

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

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

Traps used: STLM = Wing trap, SJS = Pherocon V, Codling Moth = mean of 3 MultiPher® traps, Others = MultiPher

Apple: 8/1 to 8/8

STLM: 52 (up from 42)
RBLR: 34 (down from 41)
CM (mean of 3 traps): 5.0 (down from 9.0)
SJS: 9 (up from 7)
OFM: 5 (up from 0)
DWB: 0 (unchanged)
TABM: 1 (down from 2)
VLR: 1 (unchanged)
OBLR: 2 (up from 0)
AM(sum of 3 traps): 1 (unchanged)

Peach: 8/1 to 8/8

OFM: 6 (up from 4)
LPTB: 11 (up from 2)
PTB: 8 (up from 4)

Site: East District; Erie & Lorain Counties
Source: Jim Mutchler, IPM Scout
Traps Used: STLM=wing traps, SJS=Pherocon-V, Others=MultiPher®

Apple: 8/1 to 8/7

STLM: 770 (up from 115)
CM: 2.5 (down from 4.0)
SJS: 21.3 (up from 16.3)
OBLR: 1.3 (down from 2.0)
RBLR: 5.0 (up from 1.0)
AM: 2.1 (up from 0.9)

Peach: 8/1 to 8/7

OFM: 4.0 (up from 0.7)
LPTB: 9.3 (up from 3.7)
PTB: 10.3 (down from 11.7)
RBLR: 8.7 (up from 2.3)

Other pests include white apple leafhopper, Japanese beetle

Beneficials include: lacewings everywhere (all stages), predatory mites, orange maggots, lady beetles, *Stethorus punctum*.

Site: West District; Huron, Ottawa, & Sandusky
Source: Gene Horner, IPM Scout
Traps Used: STLM=wing traps, SJS=Pherocon-V, PC = circle traps, Others=MultiPher® traps

Apple: 8/1 to 8/7
CM: 0.7 (down from 1.4)
RBLR: 3.0 (unchanged)
SJS: 1.4 (down from 6.8)
PC: 0.0 (unchanged)
AM: 9.4 (up from 6.2)
OBLR: 8

Peach: 8/1 to 8/7
OFM: 2.4 (down from 6.3)
LPTB: 11.2 (up from 5.2)
PTB: 4.0 (unchanged)
RBLR: 7.0 (up from 3.0)
TPB: 0.3 (up from 0.0)

Other pests include green apple aphid, apple rust mite, Japanese beetle, potato leafhopper, oriental fruit moth flagging, green peach aphid, lilac borer

Beneficials include: predatory mites, green lacewings (all stages), brown lacewing, banded thrips, *Stethorus punctum,* orange maggots, lady beetles, black hunter thrips

Phenology

Coming Events	Range of Degree Day Accumulations	
	Base 43° F	Base 50° F
Apple maggot 1st oviposition punctures	1566-2200	1001-1575
Codling moth 2nd flight peak	1587-3103	1061-2212
Redbanded leafroller 2nd flight subsides	1927-3045	1291-2160
San Jose scale 2nd flight peak	1934-2591	1271-1874

Apple maggot flight peak	2033-2688	1387-1804
Obliquebanded leafroller 2nd flight begins	2134-3040	1412-2076
Oriental fruit moth 3rd flight begins	2172-2956	1553-2013
Spotted tentiform leafminer 3rd flight begins	2215-2783	1558-2123
Peachtree borer flight subsiding	2230-3255	1497-2309
Lesser peachtree borer flight subsiding	2782-3474	1796-2513

Thanks to *Scaffolds Fruit Journal* (Art Agnello)

Northern Ohio Sooty Blotch Activity from SkyBit®

	Dates	**Level of Disease Activity**
Observed	August 1-8	Possible **sooty blotch** infection & damage
Forecast	August 9-17	Possible **sooty blotch** infection & damage

The Updated, Bottom Line for Fly Speck and Sooty Blotch Control

Source: Mike Ellis, Extension Plant Pathologist, OARDC

Mike Ellis has informed us that the information we put in the newsletter about fly speck and sooty blotch is a little out of date. The strobilurin fungicides (Flint and Sovran) are excellent materials for sooty blotch and fly speck control, as well as the other fruit rots. They also have some distinct advantages over Benlate or Topsin-M plus captan late in the season (preharvest). They are applied at such a low rate (Flint at 2 to 2.5 oz and Sovran at 4 oz per acre) that visible residues on the fruit are not a problem. This is a big plus, especially in pick-your-own operations. In addition, when you compare costs, they are not any more expensive than Benlate plus captan, and may even be less expensive, depending on the deal you get for your fungicides. Flint has a 14 day PHI and Sovran has a 30 day PH*I. You cannot make more than 4 applications of a strobilurin fungicide per acre per year. I think a good plan is to use 2 applications early for scab, mildew, and rust and save 2 applications for post petal fall control of the summer diseases. If you have questions about summer disease control, contact Mike Ellis at 330-263-3849 or email ellis.7@osu.edu.

Degree Day Accumulations for Selected Ohio Sites January 1, 2001 to Date Indicated

	Reported Degree Day Accumulations							
	July 25		August 1		August 8		Forecasted Degree Day Accumulations August 15	
Location	Base 43° F	Base 43° F	Base 50° F	Base 50° F	Base 43° F	Base 50° F		
Akron - Canton	2035	1506	2225	1661	2457	1859	2644	2010
Cincinnati	2509	1916	2732	2104	2972	2308	3177	2479
Cleveland	2075	1557	2269	1715	2499	1910	2681	2058
Columbus	2493	1919	2704	2095	2946	2303	3147	2469
Dayton	2381	1823	2589	1996	2820	2192	3012	2349
Mansfield	2044	1520	2237	1678	2457	1862	2648	2018
Norwalk	2096	1576	2270	1684	2493	1872	2682	2026
Piketon	2484	1885	2693	2063	2930	2265	3135	2436
Toledo	2146	1623	2343	1785	2579	1986	2755	2126
Wooster	2094	1565	2293	1729	2522	1923	2722	2085
Youngstown	1946	1424	2124	1567	2353	1760	2529	1902

Ohio Drought Conditions

Conditions in Ohio as of July 28, 2001 according to Long Term Palmer Drought Severity Index

Source: http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/regional_monitoring/palmer.gif(1) or http://enso.unl.edu/monitor/monitor.html(2)

Region	(1) Category of Drought August 4	(2) Category of Drought August 7
Northwest Ohio	Near Normal	Abnormally Dry
Northeast Ohio	Severe	Abnormally Dry
Northeast Hills	Severe	Abnormally Dry
Central Hills	Moderate	Abnormally Dry
North Central	Moderate	Abnormally Dry
Rest of State	Near Normal	Normal

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| Back |