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

THE OHIO STATE UNIVERSITY Newsletter Extension

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Calendar

August 16: Horticulture Field Night, main campus of Southern State community College, 200 Hobart Drive, U.S. 62 north of Hillsboro. More than 500 fruit and vegetable research and demonstration plots, and 15 different research projects will be on display. Contact Brad Bergefurd at 1-800-860-7232.

September 21-23: Farm Science Review, Molly Caren Agricultural Center, London, Ohio, 8 am-5pm Tuesday and Wednesday, 8am-4pm Thursday. A look at the latest information, machinery, and equipment in agriculture; 600 exhibitors.

Drought Conditions Persist

Source: http://www.cpc.noaa.gov/products/analysis_monitoring/regional_monitoring/palmer.gif

Conditions in Ohio as of July 31, 1999

Region	Category of Drought
NW Ohio	Near Normal
WCentral Ohio	Moderate
SW Ohio	Severe
SCentral Ohio	Moderate
Central Ohio	Severe
NCentral Ohio	Near Normal
NE Ohio	Near Normal
Central Hills	Near Normal
NE Hills	Near Normal
SE Ohio	Moderate

EPA Rules on OPs

Source: Joe Kovach, Ohio IPM/PIAP Coordinator and the New York Times, August 3, 1999.

The Environmental Protection Agency, on August 2, 1999, canceled the registration for methyl parathion in vegetable and fruit crops starting with the 2000 growing season. Methyl parathion, of course , is one of 39 organophosphates (OPs) which have received priority review by EPA after the passage of the Food Quality Protection Act (FQPA).

In addition, the EPA has reduced the application rates for azinphos methyl and will require practices designed to significantly reduce allowable residues on apples, peaches, and pears. Those tolerances or maximum allowable concentrations are to be reduce to 1.5 parts per million (ppm) from 2.0 now, and 1 ppm next year. According to Kenneth A. Cook, president of the Environmental Working Group, his group has reviewed 3200 apple samples taken by the USDA between 1992 and 1996, and found only 2 over 1.5 parts ppm. Of 1966 sample taken by FDA between 1992 and 1996, only 3 where found to have residues over 1.0 ppm.

The news has been received with mixed comments depending on your point of view. "Our nation enjoys the safest, most abundant food supply in the world," said EPA Administrator Carol Brower. "I want to emphasize that for children and adults alike, the benefits of a diet that includes fruits and vegetables far outweighs the risks of pesticides."

Some environmental groups, including the Natural Resources Defense Fund, claimed that the EPA has failed to do its job of protecting the nation's food supply. Some groups have threatened to file a lawsuit because they believe that the EPA has not met the intent of FQPA.

It should be noted that the four manufacturers involved, two for each of methyl parathion and azinphos methyl, have been cooperative in agreeing to these label changes. Hugh W. Ewart, a vice president with the American Crop Protection Association, reflected on the news by saying, "We survived the first round".

Proposed Guthion Label Revisions for 2000 sales/use season

The following changes will be made to all azinphos-methyl labels prior to December 1, 1999. Any product remaining in inventory will be re-labeled by that date. Distributors/Dealers will be notified of changes by October 10, 1999. Sales and/or distribution of existing stocks that have not been re-labeled will be illegal after December 1, 1999.

Apples: reduce maximum yearly rate (from 6 lbs. to 4.5 lbs. ai); increase pre-harvest interval (PHI) to 2 lb. if last application > 1 lb. ai; prohibit application by chemigation or fixed-wing aircraft. Pears (and other pome fruits): reduce maximum yearly rate (from 6 lbs. to 4.5 lbs. ai); prohibit application by chemigation or fixed-wing aircraft. Peaches (and nectarines): reduce maximum yearly rate (from 4.5 lbs. to 3.375 lbs. ai); prohibit application by chemigation or fixed-wing aircraft.

Biological Control Website

Source: Joe Kovach, Ohio IPM/PIAP Coordinator

The Cornell University sponsored website, "Biological Control: A Guide to Natural Enemies in North America, " offers a continuously revised, extensive overview of biological agents of insects, disease, and weed pests in North America. At last count, the Guide included photographs and descriptions for approximately 100 natural enemies of pest species. The site:
http://www.nysaes.cornell.edu/ent/biocontrol/

Additional material describes life cycles, habits, and other practical information. Authored by C. R. Weeden, et al, the site is divided into sections for parasitoids, predators, pathogens, and weed feeders.

Summer Diseases in Apples

Source: Dave Rosenberger, Plant Pathologist, Scaffolds Fruit Journal, Cornell University, NY

Sooty blotch and flyspeck are the two most important summer diseases on apples. In northeastern United States, most of the inoculum for these diseases comes from outside of the orchard. The fungi causing sooty blotch and flyspeck have numerous wild hosts, so any unsprayed woodlot or hedgerow can provide inoculum.

Flyspeck is the more difficult of the two diseases to control because it is somewhat less sensitive to fungicides than is sooty blotch. In the northeast, flyspeck almost always appears in sprayed orchards before sooty blotch appears, although the two diseases appear at about the same time in unsprayed trees. Spray programs that are adequate to control flyspeck will almost always provide good control of sooty blotch as well.

Researchers in North Carolina and Massachusetts have shown that the flyspeck fungus overwinters on wild hosts around the perimeter

of orchards and produces ascospores that mature starting during or shortly after bloom. They have also shown that visible symptoms appear on fruit only after fruit have had approximately 270 hours of accumulated wetting counting from the time that infections on fruit are initiated.

Our current hypothesis concerning development of flyspeck in apple orchards in the northeast is as follows:

1. Release of flyspeck ascospores peaks about 10 days after petal fall. However, only a small number of ascospores land on apple fruit, and most of these are killed by fungicides used to control apple scab.

2. Flyspeck ascospores are important, however, because they cause additional primary infections in the border areas.

3. If flyspeck develops at the same rate on wild hosts as on apples, then primary flyspeck lesions will appear on wild hosts after approximately 270 hours of wetting have accumulated counting from 10 days after petal fall.

4. The lesions that appear in wild hosts after 270 hours of accumulated wetting produce an abundance of conidia that are blown into apple orchards and cause the fruit infections that can appear later in the summer (after another 270 hours of accumulated wetting).

If the above hypothesis is correct, then fungicide protection for controlling flyspeck becomes especially critical beginning at the point when 270 hours of wetting have accumulated counting from 10 days after petal fall. In the Hudson Valley, accumulated wetting in orchards we are monitoring currently ranges from 205 to 312 hours. Thus, we can now expect flyspeck conidia to be blowing into orchards, and fungicide protection will be needed from now until the end of the season to protect fruit from this constant influx of inoculum.

Research conducted in the Hudson Valley over the past five years has shown that the benzimidazole fungicides (Benlate and Topsin M) have some eradicant activity against flyspeck, whereas captan and ziram do not. Our current "best guess" from field trials is that Benlate provides about 100 wetting hours of eradicant activity. Thus, even where fruit infections may have occurred after accumulated wetting reached 270 hours, development of flyspeck on fruit can probably be arrested if Benlate is applied sometime between 270 and 370 hours of accumulated wetting counting from 10 days after petal fall.

Captan and ziram can provide good control of flyspeck if they are applied on a 14-day interval, although shorter intervals may be needed to compensate for wash-off by rains. However, Benlate or Topsin M provide both eradicant activity and better rain-fast protection.

Spray coverage is probably the most critical factor for getting good control of flyspeck. In a wet year like 1998, even the best fungicide program will not provide good control of flyspeck on poorly pruned trees or in orchards where sprayer nozzling and travel speed prevent complete coverage when fungicides are applied.

Note: The Skybit disease predictions indicate parts of Ohio may now be experiencing weather conditions conducive for development of these two diseases.

New Insecticide Registration

Source: Dr. Celeste Welty, Associate Professor, Entomology

Confirm is now registered for use on apples.

- Must be ingested; slow acting (live larvae 7-10 days after application); spray volume - use lots of water; long residual, > 21 days; cumulative effects after 2-3 years.

- Codling moth; Biofix = sustained catch in pheromone trap. First generation: Apply 150 degree-days (base 50F) after biofix; Apply 550 degree-days after biofix. Second generation: Apply 1150 degree-days after biofix; Apply 1550 degree-days after biofix.

- Obliquebanded leafroller; Biofix = sustained catch in pheromone trap. Overwintering generation: Apply at petal-fall. Summer generation: Apply 200 degree-days (base 43F) after biofix; Apply 550 degree-days after biofix; Apply 800 degree-days after biofix.

- Tufted apple budmoth; Biofix = sustained catch in pheromone trap. First generation: Apply 600-650 degree-days (base 45F) after biofix. Second generation: Apply 2350-2450 degree-days after biofix; Apply 2670-2740 degree-days after biofix.

Fruit Observations

Insect Key

AM: Apple maggot
CM: Codling moth
DWB: Dogwood borer
LPTB: Lesser peachtree borer
OBLR: Oblique banded leafroller
OFM: Oriental fruit moth
PC: Plum curculio
PTB: Peachtree borer
RBLR: Redbanded leafroller
SJS: San Jose scale
STLM: Spotted tentiform leafminer
TABM: Tufted apple budmoth
VLR: Variegated leafroller

Site: Waterman Farm, Columbus
Source: Dr.Celeste Welty, OSU Extension Entomologist
Traps Used: AM = red balls SJS = tent trap, others = wing traps

Apple: 7/22 - 7/28

RBLR: 15 (up from 14)
STLM: 72 (down from 449)
SJS: 309 (up from 221)
CM (mean of 3 traps):5.7 (down from 8.7)
AM (mean of 3 traps) 0 (same as last week)
TABM: 2 (same as last week)
VLR: 17 (up from 9)
OBLR: 0 (down from 2)

Peaches:

OFM: 6 (up from 4)
LPTB: 7 (up from 6)
PTB: 10 (down from 18)

Site: East District; Erie & Lorain Counties
Source: Jim Mutchler, IPM Scout
Traps Used: AM = red balls, SJS = tent traps STLM = wing traps Others = Multipher traps

Apple: 7/28- 8/3

RBLR: 7.9 (up from 3.9
STLM: 500 (down from 675)
SJS: 17.7 (down from 27.3
CM (mean of 3 traps): 1.3 down from 2.2)
OBLR: 1.5 (up from 0.5)
VLR: 4.5 (up from 0)
AM (sum of 3 traps): 0.6 (up from 0.5)
TABM: 43 (first report 0)

Peach:

OFM: 14.0 (up from 12.5)
RBLR: 7.5 (up from 2.5)
LPTB: 14.8 (down from 32.5)
PTB: 3.0 (down from 4.5)

Other pest activity: green apple aphid, potato leafhopper, twospotted spider mite, apple maggot & Oriental fruit moth strikes

Beneficials at work: Lacewings everywhere, lady beetles, predatory mites, orange maggot

Site: West District; Huron, Ottawa, & Sandusky Counties
Source: Gene Horner, IPM Scout
Traps Used: AM = red balls, SJS = tent traps STLM = wing trap Others = Multipher traps

Apple: 7/28 - 8/3

RBLR: 25.0 (up from 15.9)
STLM: 665 (down from 1064)
SJS: 4.3 (up from 0.9)
CM (mean of 3 traps): 1.6 (down from 2.0)
OBLR: 4.0 (up from 1.0)
VLR: 29.5 (up from 15.5)
AM (sum of 3 traps) 0.1 (down from 0.6)
FTLR: 0 (first report)

Peach:

OFM: 7.5 (down from 6.0)
RBLR: 25.0 (up from 10.0)
LPTB: 12.5 (down from 16.0)
PTB: 3.0 (up from 2.5)

Other pest activity: Green apple aphid, two-spotted spider mite, Oriental fruit moth strikes, apple rust mite, Japanese beetle

Beneficials at work: Lacewing eggs, predator mites

Site: Wayne County *Source: Ron Becker, Program Assistant, Agriculture and IPM, Ohio State University Extension*

Apple: 7/29-8/4

STLM: 59 (down from 129)
CM (mean of 3 traps) 7.9 (up from 3.8)
RBLR: 2.3 (up from 1.0)
OBLR: 1 (up from 0)
AM (mean of 3 traps) 1.9 (up from 0.1)

Peach: 7/29-8/4

OFM: 27 (down from 53 [7/22])
LPTB: 13 (same as last count [7/22])
PTB: 2 (down from 15 {7/22])

ERM numbers are decreasing both from spray as well as on their own. Stings from apple maggot are starting to be found on the fruit. Leaf mines are becoming more common, with counts averaging just under 1 per leaf. This coincides with the increase in moth numbers noticed several weeks ago. Insecticides for STLM control are being added to the cover sprays. Peaches are near 70 % harvested. No brown rot has been found so far.

Cumulative Trap Report on the Web:

http://www.ag.ohio-state.edu/~ipm/fruit/frpest.htm

Ohio Apple Scab, Fire Blight, and Sooty Blotch Activity- SkyBit Products

Central District

Apple Scab:
August 1 possible infection & damage
August 2 - 4 active but no infection
Based on Forecasts; August 5-7, 10, 11 active but no infection
August 8, 9 possible infection and damage

Fire Blight:
August 1 possible infection and damage; August 2 not active
August 3, 4 active but no infection
Based on Forecasts; August 5, 6 not active
August 7 - 11 possible infection and damage

Sooty Blotch:
August 1 - 4 possible infection and damage
Based on Forecasts; August 5 - 11 possible infection and damage

Eastern Highlands

Apple Scab:
August 1 possible infection & damage
August 2 - 4 active but no infection
Based on Forecasts; August 5, 6, 9-11 active but no infection
August 7, 8 possible infection and damage

Fire Blight:
August 1 possible infection and damage; August 2, 4 not active
August 3 active but no infection
Based on Forecasts; August 5, 7-9, 11 possible infection and damage
August 6 not active, August 10 active but no infection

Sooty Blotch:
August 1 - 4 active but no infection
Based on Forecasts; August 5 - 11 active but no infection

Northeast District

Apple Scab:
August 1, 4 possible infection & damage
August 2, 3 active but no infection
Based on Forecasts; August 5, 7, 8 possible infection and damage
August 6, 9-11 active but no infection

Fire Blight:
August 1, 4 possible infection and damage; August 2, 3 not active
Based on Forecasts; August 5, 7-9, 11 possible infection and damage
August 6 not active, August 10 active but no infection

Sooty Blotch:
August 1 - 4 possible infection and damage
Based on Forecasts; August 5 - 11 possible infection and damage

North Central District

Apple Scab:
August 1, 4 possible infection & damage
August 2, 3 active but no infection
Based on Forecasts; August 5, 7, 8 possible infection and damage
August 6, 9-11 active but no infection

Fire Blight:
August 1, 4 possible infection and damage; August 2, 3 not active
Based on Forecasts; August 5, 7-11 possible infection and damage
August 6 not active

Sooty Blotch:
August 1 - 4 active but no infection
Based on Forecasts; August 5 - 11 active but no infection

West District

Apple Scab:
August 1, 4 possible infection & damage
August 2, 3 active but no infection
Based on Forecasts; August 5, 6, 9-11 active but no infection
August 7, 8 possible infection and damage

Fire Blight:

August 1, 4 possible infection and damage; August 2, 3 not active
Based on Forecasts; August 5, 9, 10 active but no infection
August 6 not active
August 7, 8, 11 possible infection and damage

Sooty Blotch:
August 1 - 4 possible infection and damage
Based on Forecasts; August 5 - 11 possible infection and damage

Degree Day Accumulations for Selected Ohio Sites January 1, 1999 to date indicated

	Actual DD Accumulations August 4, 1999		Forecasted Degree Day Accumulations August 11, 1999			
Location	**Base 43° F**	**Base 50° F**	**Base 43° F**	**Normal**	**Base 50° F**	**Normal**
Akron - Canton	2811	1938	2991	2766	2069	1875
Cincinnati	3292	2322	3497	3481	2478	2461
Cleveland	2817	1954	2999	2710	2087	1836
Columbus	3377	2437	3582	3057	2593	2115
Dayton	3153	2239	3353	3128	2390	2185
Elyria	2955	2095	3132	2850	2223	1959
Fremont	2713	1887	2889	2766	2014	1902
Mansfield	2694	1827	2864	2741	1947	1856
Norwalk	2841	1988	3018	2698	2116	1836
Toledo	2902	2047	3085	2695	2181	1835
Wooster	2906	2026	3081	2619	2152	1743
Youngstown	2595	1754	2761	2559	1871	1699

Phenology

	Range of Degree Day Accumulations	
Coming Events	**Base 43° F**	**Base 50° F**
Codling moth 2nd flight peak	1587-3103	1061-2212
Apple maggot flight peak	2033-2688	1387-1804
Obliquebanded leafroller 2nd flight begins	2124-3040	1412-2076
Oriental fruit moth 3rd flight begins	2172-2956	1553-2013
Peachtree borer flight subsiding	2230-3255	1497-2309
Redbanded leafroller 3rd flight begins	2389-	1722-2209

	3113	
Spotted tentiform leafminer 3rd flight peak	2415-3142	1728-2231
San Jose scale 2nd flight subsides	2494-3257	1662-2303
Redbanded leafroller 3rd flight peak	2514-3225	1818-2625
Obliquebanded leafroller 2nd flight peak	2634-3267	1789-2231

Thanks to Scaffolds Fruit Journal (Art Agnello)

Preliminary Monthly Climatological Data for Selected Ohio Locations July 1999

Weather Station Location	Monthly Precipitation	Normal Monthly Precipitation	Year-to-Date Precipitation	Normal Year-to-Date Precipitation	Average High	Normal High	Average Low	Normal Low	Mean Temp.	Normal Mean
Akron-Canton	5.78	4.08	21.60	21.87	86.9	82.3	64.6	61.5	75.8	71.9
Cincinnati	3.16	4.24	21.49	25.63	89.9	85.5	68.0	64.8	79.0	75.1
Cleveland	4.66	3.52	19.17	20.99	86.4	82.4	66.0	61.4	76.2	71.9
Columbus	3.02	4.31	17.63	23.18	91.1	83.7	69.3	62.7	80.2	73.2
Dayton	2.82	3.54	21.54	22.42	88.3	84.9	68.5	63.4	78.4	74.1
Elyria	4.57	3.33	18.61	20.60	86.8	85.0	67.3	61.5	77.0	73.3
Fremont	2.79	3.76	17.89	20.44	87.3	83.9	64.6	61.6	76.0	72.8
Mansfield	5.52	4.04	22.94	23.28	84.4	82.1	62.9	62.0	73.6	72.0
Norwalk	5.37	4.16	22.34	21.10	86.3	82.7	67.5	60.7	76.9	71.7
Toledo	2.97	3.27	20.89	19.03	88.7	83.5	65.8	60.6	77.2	72.0
Wooster	3.59	4.05	19.08	22.32	88.9	83.6	63.8	59.7	75.9	71.6
Youngstown	5.56	4.07	25.34	21.86	86.0	81.3	62.2	59.3	74.1	70.3

Temperatures in degrees F, Precipitation in inches

Records set: Highs; 23rd - Youngstown 94° F, 30th - 92° F, 31st - Columbus 100° F, Youngstown 95° F

High tied; 30th Cincinnati 101° F, Low tied; 11th Mansfield 48° degrees F>

Table Created by Ted W. Gastier, OSU Extension from National Weather Service, OARDC & Local Data

Preliminary Climatological Record Extremes for July

Weather Station	Extreme Average Monthly Temperature*		Average Monthly Temp.	Record Single Day High Temperatures and Existing Data Years**		

	Highest	Year	1999	Highest	July Day & Year	Data Years
Akron - Canton	76.2	1988	75.8	101	July 16, 1988	1948-1996
Cincinnati##	80.2	1949	79.0	101	July 29, 1952 & July 30, 1999#	1949-1996
Cleveland	79.1	1955	76.2	103	July 27, 1941	1896-1996
Columbus##	79.0	1955	80.2	104	July 14, 1954	1948-1996
Dayton	81.5	1934	78.4	108	July 22, 1901	1896-1996
Elyria	77.2	1901	77.0	102	July 7, 1988	1897-1996
Fremont	78.9	1955	76.0	100	July 17, 1988	1953-1994
Mansfield	76.7	1955	73.6	100	July 7, 1988	1948-1996
Norwalk	77.9	1901	76.9	108	July 24, 1934	1896-1996
Toledo##	78.3	1955	77.2	104	July 14, 1995	1955-1996
Wooster	76.2	1949	76.3	104	July 20, 1930	1893-1996
Youngstown	77.4	1934	74.1	103	July 9, 1936	1897-1996

*(Daily highs + daily lows)/2

***Source:* http://mcc.sws.uiuc.edu/Summary/Data

#*Source:* http://iwin.nws.noaa.gov/iwin/oh/climate.html

##Other single day high temperature records exit outside of "Existing Data Years"

Chart created by: Ted W. Gastier, Ohio State University Extension

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