



Newsletter Extension

Fruit ICM News

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Calendar

May 23: Plasticulture Strawberry Field Night, Southern State Community College, U.S. Rte. 62 North, Hillsboro, Ohio. For more information contact Brad Bergefurd at 740-289-3727 or bergefurd.1@osu.edu.

July 10: Ohio Fruit Growers Society Summer Tour, Hirsch Fruit Farm, Chillicothe, OH. 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.

New Savey Label

Source: Celeste Welty, OSU Extension Entomologist

Savey 50DF has been approved for use on plums and prunes since April 2001, as shown on a supplemental label. This use now is shown on the new federal label. Like its use on peaches, cherries,

apples, and pears, Savey has a 28-day pre-harvest interval on plums and is used at a rate of 3-6 oz per acre to control eggs and immatures of European red mite and two-spotted spider mite. Savey can be used only once per year.

A Pile of Petals at Your Feet

Source: Adapted for Ohio from Art Agnello, Entomology, Geneva, Scaffolds Fruit Journal, Vol. 11, No. 8, May 6, 2002

Before we completely lose the opportunity to address spring pest decisions, as the trees seem destined to get the whole season over with by July, we should probably discuss a few petal fall considerations and how this year's highly irregular weather may be affecting what the insects are and aren't doing out there.

First of all, this is one of those years where the long-observed relationships between tree development and pest activity may not exactly hold true to our expectations. The concept of what's "normal" is a tenuous one, and easily subject to modification after something generally thought to be rare occurs more than once or twice. We have now seen a few years where the tight cluster-to-pink-to-bloom sequence has been contracted into just a few days, and the result can easily have the trees outrunning the insects. This differential response to heat units appears to push certain pest events "back" one or two phenological stages, compared with what we normally expect. Mite eggs, which normally start hatching at tight cluster, hold on until pink or later; leafminer eggs aren't seen until bloom rather than pink; oriental fruit moths, normally in full flight by peach petal fall, are only just starting to appear in traps. Other species, such as pear psylla and tarnished plant bug, may be quick responders, needing only a day or two of warm temperatures to explode into full activity. This might have been why we heard so many reports of TPB activity at the start of the warm-up period, not because they were necessarily more numerous this year.

Growers may be better advised to base their petal fall spray needs on what is actually going on in the field at this moment rather than what "normally" occurs at petal fall. Some specifics for plum curculio:

Plum Curculio

The activities of this pest may not be so easily waylaid by advanced tree development, because it tends to be active and in the trees during bloom in a normal year anyway, and the only reason we don't worry about them until petal fall is that there's no fruit around to be bothered until then.

Plum curculio adults move into orchards from overwintering sites in hedgerows or the edges of woods and adults are active when temperatures exceed 60°F. Adult females oviposit in fruit during both day and night, but feed mostly at night. Depending on temperature, overwintering adults remain active for two to six weeks after petal fall. Because adults are not highly mobile, orchards near overwintering sites, woodlands, and hedgerows are most susceptible to attack. Fruit damage is usually most common in border rows next to sites where adults overwinter. Although initial post-bloom sprays for plum curculio control should begin at petal fall, growers are often unsure how many additional sprays will be necessary to maintain protective chemical residues to prevent subsequent damage throughout the PC oviposition cycle, which varies according to temperatures and weather patterns after petal fall.

Following from the fact that PC activity and oviposition are greatly affected by temperature, an oviposition model has been developed to determine when control sprays after petal fall are no longer

necessary to protect fruit from PC damage. This model is based on the assumption that residues from control sprays after petal fall only need to be maintained on fruit and foliage until about 40% of the oviposition cycle is complete, which is predicted by the model to occur at 340 DD (base 50°F) after petal fall. Probably, this strategy works because, after 40% of PC oviposition is complete, adults usually are not moving into the orchard from outside sources, or moving around within orchards from tree to tree. Therefore, by this time, adults residing in treated trees have already been killed by insecticide residues and are unable to complete the remainder of their normal oviposition cycle.

In order to use this strategy:

- Treat the entire orchard at petal fall with a broad spectrum insecticide.
- Start calculating the accumulation of DD after petal fall (base 50°F).
- No additional sprays are necessary whenever the date of accumulation of 340 DD falls within 10-14 days after a previous spray.

Analyzing and Improving Your Farm's Air Drainage

Source: Mark Longstroth, District Extension Horticultural Agent, MSUE Fruit CAT, May 7, 2002

Spring frosts can cause significant losses to fruit crops. Classic radiation frosts with clear skies and calm conditions are common in all fruit growing regions. In a radiation frost, the ground cools by radiation to the sky. The cold ground cools the air above it. It is this cold air that causes frost or freeze damage. It is a good idea to routinely assess the air drainage on your farm. Plant growth and construction will cause air drainage to change over time and maintaining good air drainage can save a grower a crop in years when frost hits a region. There are numerous sites where a degree or two could be gained by removing obstructions from air drainage passages under radiation freeze conditions.

Physics of Air Drainage

Air is subject to the laws of thermodynamics and hydraulics. Cold air is denser than warm air. Because of external energy and wind currents the air can have different temperature layers vertically or horizontally. Cold air sinks flowing downhill to the lowest available point where it accumulates until dispersed by heat or wind. Even on still nights there is air movement on slopes. Steeper slopes cause air to move faster. It takes energy to move air through or around obstructions. Therefore, cold air often accumulates above obstacles. For air drainage under calm conditions, we are only concerned with low-level air currents from ground level to 200 feet or less.

Diagnosis

Mornings with low-lying ground fog (10 to 20 feet) are ideal for assessing air drainage. At dawn go to the highest spot on the farm and make note of where fog patches lie. Walk through these areas noting where fog is thickest and where it thins out. Look for obstructions that keep the fog in the area. Watch for moving fog banks, they show the natural airflow if there is no wind. Follow surface water drainage pattern; it will tell you where cold air travels.

Fruit sites should have large air storage areas within a half-mile or at least allow a general airflow to a storage area within one mile. Cold air storage over bodies of open water is larger than it appears. Heat and water vapor from open water warms the air in contact with it. This causes air to rise, making room

for more air to enter. Even on still nights, air movement down slope creates a slight breeze (one to three miles per hour). One good way to find these breezes is with a helium balloon on a string. The balloon will tip in direction of airflow.

Treatment

There are basically three things you can do to help air drainage. Remove obstacles to air drainage, maintain drainage ways in good condition, and create more cold air storage off site. Solid obstructions block airflow, causing it to stop and pile up higher than the obstacle (often 2 to 3 times higher) before it pours over the obstacle. Colder dense air will pile higher than warmer air. Obstructions tight to ground are more effective air dams than obstructions with openings near the ground. Sixty feet is the minimum width opening for good airflow. The larger the area draining through the opening, the wider the opening should be.

Places to Clear of Obstructions:

Any low waterways going off of farm to lower elevations. Tree lines or woodlots in or crossing air drainways. Bulldoze out humps or earth dams. Cut openings through side of potholes to area of lower elevations, or fill and grade surface toward lower elevation. Fill small potholes if they can't be opened.

Thin out the cold air layer by increasing drainage:

Mowing (of ground cover on)air drains very closely in spring helps increase airflow by decreasing friction, so keep air drainage areas mowed and cleared. Make steeper slopes where practical to speed airflow to lower elevations. Open up restrictions as you can. Maintain openings at 60 feet or more.

Add energy to the air in form of heat or speed using fans, slopes, or increased air storage

Large (100,000 CFM) fans operating in air drainage ways can be useful in speeding airflow. Narrow areas benefit more than wide ones. Adding heat by burning creates a rising air column. This is most useful in areas that collect cold air. Heating the cold air causes it to rise, allowing more cold air to flow into the area. The larger the area (5 acres minimum) heated, the more efficient this is.

Points to Remember

Maintaining good air drainage is a never-ending task. Analyze every field for potential alterations before replanting. Plant appropriate varieties. Remember that north and east facing slopes get cold slightly faster than south to west facing slopes. Place earlier growing fruits in warmer sites and later fruit in the cooler sites.

Constantly assess air drainage. Any time you have ground fog, pay attention to where it is. This usually happens in the fall during harvest as moisture is condensed out of the air. Be aware of air drainage problems off your farm that will affect you. Work with your neighbors to open air drainage even if you have to cover all expenses. Lastly, don't let the county or state fill a road cut across your air drainage area without compensation.

Apple Assistance Sign Up

Source: <http://www.fruitgrowersnews.com>

The U.S. Department of Agriculture recently announced the sign up for the 2000 Apple Market Loss Assistance Program (AMLAP-II). AMLAP-II will provide about \$75 million to eligible growers for their 2000-crop apple production. The payments will help offset economic losses due to low prices in the U.S. apple market. Growers can receive a payment per pound for their 2000-crop apple production, and they will be paid on a maximum of five million pounds per separate apple operation.

To receive cash payments, eligible apple producers must:

- have produced and harvested apples during the 2000-crop year;
- not have received compensation from any other federal program, other than crop insurance, for the same market loss; and
- apply for cash payments during the application period for each apple operation. The deadline for application under the AMLAP-II program will be announced later. For more information contact your local Farm Service Agency office.

2001 Top Seven Agrochemical Companies

Source: *Pesticide Action Network Updates Service via Joe Kovachs, OSU IPM Coordinator*

The gap in sales between the world's seven largest agrochemical companies has narrowed, according to 2001 sales reports, published in *Agrow: World Crop Protection News*. Syngenta continued to maintain highest revenues, with nearly US\$5.4 billion in pesticide and seed sales. However, Bayer's anticipated purchase of Aventis CropScience (formerly Rhone-Poulenc and Hoechst/AgrEvo) may increase Bayer's 2002 sales to over US\$6 billion.

BASF, a German multinational, reported the highest revenue increase of 39.4%, primarily the result of its 2000 acquisition of Cyanamid, a U.S.-based agrochemical company. In 2001, BASF sales increased in North America by 65%, in Europe by 45% and in Latin America by 6.5%. Sales of BASF herbicides increased by 47.3%, fungicides increased by 27.5%, and insecticide and other pesticides increased by 53.5%. Dow AgroSciences also reported a significant increase in sales (11%), 9% of which is attributed to its recent purchase of Rohm and Haas, a U.S.-based agrochemical company.

Bayer and Aventis CropScience both reported steady increases in sales of herbicides and insecticides in European, Latin American, and North American markets. Bayer's top selling insecticides, Confidor, Gaucho, Admire, and Provado (all based on imidacloprid), increased in sales by 5% to US\$540 million. Sales of Bayer's fungicide, Folicur/Raxil tebuconazole) also increased by 5% to US\$240 million.

Sales of Aventis' herbicides increased by 8.1%, insecticides increased by 7.5%, and fungicide stayed at 2000 levels. Aventis' top four pesticides--herbicides, Hussar (iodosulfuron-methyl sodium), Balance (isoxaflutole), and Liberty/Basta (glufosinate-ammonium) and insecticide, Regent (fipronil)--accounted for 47% of its 2001 agrochemical sales. Despite maintaining the largest overall sales, Syngenta (formerly Novartis and AstraZeneca) suffered the largest decrease of the top seven companies in 2001. The company lost money in Europe, as a result of Brazilian currency exchanges and Argentinean credit policies, and because of reduced crop acreage in the United States. Syngenta seed sales dropped overall by 2.1% to US\$938 million. However, sales of genetically engineered seed continued to increase and totaled 17% of seed sales.

Monsanto suffered overall 2001 revenue losses of 3.3%, while sales of its flagship herbicide, Roundup (glyphosate), dropped by 8% to US\$2.4 billion. Sales of Roundup decreased most significantly in Latin America and Asia.

Top Seven Agrochemical Companies

Company	2001 Sales (in billions of US\$)	Change Since 2000
Syngenta (Swiss)	\$5.385	- 8.5%
Aventis CropScience (Fr.)	\$3.842	+ 5.0%
Monsanto (U.S.)	\$3.755	- 3.3%
BASF (Ger.)	\$3.105	+ 39.4%
Dow AgroSciences (U.S.)	\$2.612	+ 11.3%
Bayer (Ger.)	\$2.418	+ 7.4%
DuPont (U.S.)	\$1.917	- 4.6%

Section 18 Emergency Exemption Use Directions

Source: Mike Ellis, OSU Plant Pathologist

For use in connection with an emergency exemption authorized under the provisions of Section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended.

Effective Period: May 6, 2002 to September 30, 2002

**Topsin®M WSB Fungicide
(EPA Reg. No. 4581-377 or 73545-8 or 4581-408)**

For Use on Blueberries in the States of Connecticut, Indiana, Michigan, New Jersey, New York, Ohio and Pennsylvania

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Pests	Rate Lbs product per acre	Directions
Preharvest: Mummy Berry Botrytis Blossom Blight Anthracnose Fruit Rot Phomopsis Twig Blight & Canker Fusicoccum Canker	1.0	Begin applications at green tip and repeat on a 7-10 day interval. A maximum of 3 applications per season is allowed. Observe restrictions listed below.

Application Procedures:

Application can be made by ground using sufficient water to obtain thorough coverage or by air (using fixed wing aircraft or helicopter). For aerial applications, apply 5 gallons of finished spray per acre. Agitation is required during mixing and spraying.

Restrictions:

- Do not use Topsin M WSB alone in a blueberry disease management program. Use only in combination or in a rotational application program with a registered non-benzimidazole fungicide. If after using Topsin M WSB as recommended, the treatment is not effective, a tolerant or resistant strain of fungi may be present. Discontinue the use of Topsin M WSB for at least one season.
- Do not apply more than 3.0 lbs Topsin M WSB per acre per season
- If more than one benzimidazole product (i.e. a product containing benomyl as the active ingredient) is used, then the total poundage of all such products must not exceed 3 lbs.
- Do not apply within 7 days of harvest.

Important: Before using Topsin M WSB, read and follow all applicable directions, restrictions, and precautions on the EPA registered Federal label. This label must be in the possession of the user at the time of pesticide application. Any adverse effects resulting from the use of Topsin M WSB under this emergency exemption must be immediately reported to your State Department of Agriculture.

Registrant: Cerexagri, Inc., 630 Freedom Business Center Suite 402, King of Prussia, PA 19406

Pest Phenology

Coming Events	Degree Day Accum. Base 50F
Lesser peachtree borer 1 st catch	110 - 553
White apple leafhopper present	123 - 404
Spotted tentiform leafminer sapfeeders present	130 - 325
1 st codling moth catch	141 - 491
European red mite egg hatch complete	183 - 298
Plum curculio oviposition scars present	232 - 348
European red mite 1 st summer eggs	235 - 320
San Jose scale 1 st flight peak	229 - 449
Peachtree borer 1 st catch	299 - 988

Thanks to *Scaffolds Fruit Journal* (Art Agnello)

Degree Day Accumulations for Ohio Sites May 8, 2002

Location	Degree Day Accumulations Base 50F	
	Actual	Normal
Akron-Canton	206	213
Cincinnati	367	374
Cleveland	203	201
Columbus	331	274
Dayton	301	282
Kingsville Grape Branch	164	163
Mansfield	203	208
Norwalk	181	191
Piketon	369	393
Toledo	222	184
Wooster	234	188
Youngstown	218	186

SkyBit® Apple Scab Prediction for North-Central Ohio

Observed:

May 1, 2, 6-8: Possible infection & damage

May 3-5: Active, but no infection

Predictions based on weather forecasts:

May 9, 11-14: possible infection & damage

May 10, 15-18: active but no infection

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: 5/1 to 5/8

RBLR: 0 (same as last week)
STLM: 1 (down from 2)
CM (mean of 3 traps): 8.0 (up from 0.3)
TABM: 0 (same as last week)
SJS: 0 (same as last week)
VLR: 0 (first report)

Note: Biofix for codling moth in Columbus was Monday, May 6, 2002.

Peach: 5/1 to 5/8/02

OFM: 8 (up from 1)
LPTB: 1 (up from 0)

Site: Wayne County, Ohio:

Source: Ron Becker, Program Assistant, IPM, Agriculture & Extension

Apple: 5/1 to 5/8/02

Trap report not complete due to Ascension Week

In scouting the tree fruit blocks, we are finding very light tarnished plant bug populations. In strawberries, we found one plant with two-spotted spider mite. Very little activity other than this.

Site: East District: Erie & Lorain Counties

Source: Jim Mutchler, IPM Scout

Apple: 4/30 to 5/7/02

STLM: 875 (up from 513)
OFM: 5.7 (up from 0.7)
RBLR: 7.6 (down from 7.9)

Peach: 4/30 to 5/7/02
OFM: 3.5 (up from 2)
RBLR: 8.0 (down from 10.7)

Beneficials present - native lady beetles

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

Apple: 4/30 to 5/7/02
STLM: 42.8 (up from 10.6)
OFM: 12.9 (up from 0)
RBLR: 10.5 (down from 10.7)

Peach: 4/30 to 5/7/02
OFM: 9.6 (up from 0.5)
RBLR: 8.0 (up from 2.5)

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Information presented above and where trade names are used, they are supplied with the understanding that no discrimination 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.

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

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