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THE OHIO STATE UNIVERSITY Newsletter Extension

Fruit ICM News

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In This Issue:

Calendar

June 19-20: Farm Market Tour; Pickaway, Ross, and Pike counties, sponsored by Direct Marketing Association of Ohio and Ohio State University Extension. For more information, contact John Ellerman at the Centers at Piketon (800) 297-2072.

Ohio Fruit Growers Society Summer Tour

Source: John Wargowsky, Ohio Fruit Growers Society

The Ohio Fruit Growers Society (OFGS) and Patterson Family of Chesterland, Ohio invite fruit growers and direct agricultural marketers to the 2001 Ohio Fruit Growers Society Summer Tour on Saturday, June 30. Patterson Fruit Farm is a sixth generation fruit farm growing 45 acres of apples and strawberries. They have a farm market with a bakery and gift room, pick-your-own apples and strawberries, a seven-week Family Fun Fest in the fall and a wholesale cider business. Apple growers, berry growers, and direct agricultural marketers will all benefit from this information-packed program. Visit http://www.pattersonfarm.com for more information on their operation.

At the farm, participants will take a horse drawn wagon ride to the Fun Fest area. This area will include scarecrow making and pumpkin painting, demonstrations on maze building, play carts, and pedal tractors; guests can also tour the treehouse and woods play area, plus much more.

Participants can take an educational tour of the orchard, including IPM programs, pick-your-own with strawberries and apples, apple and strawberry production, wildlife management, and crowd control. Presenters at the farm tour will include Erik Draper, OSU Extension, Geauga County Horticulture Agent; Sandy Kuhn, Berry Coordinator; Ted Gastier, OSU Extension, Huron County Agriculture Agent; Bob Jenant and Reno Reda, ODNR Division of Wildlife; and Wayne Sperry, Patterson Fruit Farm.

Next, participants may board buses to ride to the Farm Market for a tour of the bakery, cider operation, packing area, and cold storage. Guests may also review Patterson's cider HAACP program and look over the family golf course.

There will be farm market vendors with sampling and comparisons. In addition, Pattersons will also demonstrate how they conduct school tours. Food and beverages will be available for purchase at the farm. At 1:00 an hour-long program will include a presentation by the Patterson family and industry updates from the Ohio Department of Agriculture, The Ohio State University, and OFGS.

Farm/orchard tours begin at 8:00 a.m., with buses running to and from the farm market between 9:00 a.m. and 2:00 p.m. Bonus seminars include Hugh McPherson of Maize Quest from Pennsylvania, who will present "Discover Your Path to Entertainment Farming Through Mazes" from 2:15 to 4:15 p.m. near the Fun Fest area and is available for up to 30 people at $10 per person. Ramon Battles with Tower-N-Pines (next door neighbor of Pattersons) will present an introduction to cut-your-own Christmas trees from 2:15 to 4:15 p.m. for all interested parties at no additional cost. Also, a Lake Farmpark Tour on good management practices with petting zoos (preventing E. coli O157:H7 contamination) will be available for up to 20 people for an additional $10 per person fee and runs from 2:30 to 4:30 p.m. Pre-registration is requested for the maze and Lake Farmpark interactive seminars.

The registration fee for OFGS members is $10 per person and $15 per family (husband, wife and children under 18). Registration for non-members is $15 per person and $20 per family. Please park and register at the farm at 8765 Mulberry Road. Participants may join OFGS at the tour. A block of rooms has been reserved at the Ramada Inn and Conference Center at 6051 SOM Center Road, Willoughby (intersection of St. Rte. 91 and I-90) for June 29 and 30 at a special rate of $79 plus tax. This includes complimentary continental breakfast and heated indoor and outdoor pools. A special package of $139.99 plus tax that includes one night and two adult tickets to Six Flags Worlds of Adventure is available. Call (440) 944-4300 by June 2 to make reservations. Ask for sales if you wish to buy the package including Six Flags tickets.

Contact the OFGS office by phone (614) 249-2424, fax (614) 249-2200 or e-mail growohio@ofbf.org for complete information.

Bird Control in Small Fruit Crops

Source: Richard C. Funt, OSU Dept. of Horticulture and Crop Science

Birds can be a major threat to many small fruit crops. Growers may see 10 to 30% of a blueberry crop destroyed. A flock of 5,000 starlings can consume one ton of food over a 10 day period. It has been observed that mid-season ripening blueberries can be the most heavily damaged. Robins (young aggressive types), starlings, finches, orioles, and cedar waxwings have been identified in order of importance as birds that cause problems in fruit crops.

Bird damage patterns can vary from year to year and can be localized, depending on the source. Birds can fly 10 to 15 miles from a resting site to feed. It is difficult to stop birds from feeding once they start. They can establish their home territory in late April and May and remain until the crop ripens. Crops near resting areas, wooded lots, and ponds are most vulnerable. Birds generally feed before sunrise and again late in the day or slightly after sunset.

Types of bird repellents:

Physical barrier - Netting, either plastic or rope (known as tobacco netting) has generally been recommended, but it takes a lot of labor, and birds can occasionally get under or eat through it. Nets do offer nearly 100% protection, particularly in high valued crops. Placing the netting over the crop is best. Full field netting must be removed before winter because the ice load breaks it. Ultraviolet light also breaks down the material.

Propane cannons - These cannons give unexpected blasts and should be set at intervals greater than one blast per three minutes. However, neighbors who work early or late shifts and rest during the day may become angry if these are used. Timers can be used to provide flexibility and are turned off during the off-feeding periods.

Electronic sound devices - Some devices simply disrupt bird communications. Other devices use digital electronic sound to produce distress calls. Several 'chips' of different calls are available on one device. Some reports say that these devices can attract hawks and more hawks scare birds away.

Pistol cartridges and other sound devices - Special cartridges launched from hand guns which explode high in the air near birds can quickly clear a field or wooded lot. They can be an effective manual scare device.

Shot guns are often used, but are generally ineffective. In some cases, protected species can be harmed.

Aluminum pie plates, firecrackers, and *Mylar* humming lines may work for a few days and are best just before harvest. The same is true for artificial hawks, stuffed owls, or snakes.

Use an Integrated Approach

Using one deterrent system is not effective; therefore, use a combination of methods. Random unexpected noise, positioning devices near perimeters and flight patterns, using scare devices near the fruit planting, and encouraging predators can be effective.

Here are some tips:

1. Start bird control methods 10 to 30 days before the crop ripens. Watch and be aware of the birds' habits and their reaction.
2. Change the method of control. Move devices once per week and change the type of noise.
3. Control birds 30 minutes before sunrise to early morning and late afternoon to 30 minutes after sunset.
4. Consider the amount of fruit loss versus the cost of equipment or material and labor to control birds.

Remember:

Once birds start to eat the crop, they are difficult to remove. Control is based on knowing how birds

behave. Start controls before fruit starts to turn from green to pink, red or blue. Use several methods and change positions once per week.

Reference: *Bird Control on Grape and Tender Fruit Farms* by H.W. Fraser, K.H. Fisher and I. Frensch, Fact Sheet 98-035. Ministry of Agriculture, Ontario, Canada.

Using Apogee To Help Manage Fire Blight

Source: Bill Turechek, Dave Rosenberger, & Herb Aldwinckle, Plant Pathology, and Jim Schupp & Terence Robinson, Cornell Horticultural Sciences

Fire blight remains one of the most destructive and difficult-to-control diseases of apples and pears. Young high-density apple plantings are especially at risk because they often contain vigorously growing, blight-susceptible cultivars that were propagated on highly susceptible rootstocks. Under high risk conditions, the recommended applications of copper at green tip and streptomycin during bloom may not provide complete protection against fire blight. When blight becomes established in young orchards, large numbers of trees can be killed within a single season. This article contains suggestions for optimizing use of Apogee for controlling fire blight in orchards that are at high risk.

Apogee (Prohexadione Calcium) is a growth regulator that has demonstrated potential for managing *shoot blight* infection in experimental trials conducted in New York, Michigan, and Virginia. ***Apogee is ineffective for control of the blossom blight phase of the disease and is registered only for apples, not for pears***. Apogee works by "shutting down" the growth of a tree and, therefore, is used primarily to control overly vigorous trees and reduce the need for seasonal pruning. Apogee has value in fire blight management because when trees stop growing, they become relatively resistant to new blight infections, and further expansion of established infections is arrested. Thus, Apogee can significantly reduce secondary spread of fire blight (i.e., shoot blight infections) in orchards where streptomycin sprays failed to provide 100% control of blossom blight. (Shoot blight is rarely a serious problem in orchards that do not have any blossom blight unless secondary inoculum is coming from adjacent blocks that had blossom blight.) In trials conducted in New York, the best control of shoot blight was obtained when Apogee was applied during late bloom or early petal fall (when shoots were 1 inch long) at 12 oz/ 100 gal, with a second application 3 weeks later.

The problem with using Apogee to control shoot blight is that the first application of Apogee must be made before the effectiveness of streptomycin blossom sprays can be evaluated. Research trials in both the Hudson Valley and Geneva have shown that if the first Apogee application is delayed until blossom blight symptoms appear, then Apogee will have almost no benefit for controlling fire blight. Apogee has no effect on shoot growth or fire blight for at least 10 days after application, so it acts too slowly to be of value as a rescue treatment for orchards with blight symptoms.

In mature orchards where trees have already filled their spaces, the decision on whether or not to use Apogee can be based on a combination of its potential value as a vegetative growth inhibitor and as a supplement to fire blight control. In young orchards where trees have not yet filled their spaces, the decision is much more complex. Using Apogee for fire blight control in young orchards will cause reduced vegetative growth (see Table 1 for an example). That, in turn, will decrease profitability of the orchard in succeeding years because it will increase the number of years required for trees to fill their spaces and for the orchard to reach the break-even point. Because of this, one needs to seriously consider whether the delay to reaching full production and/or the reduction in fruiting capacity outweighs the

potential loss due to fire blight plus the cost of an application, and that decision must be made at petal fall.

Table 1. Calculated estimates of tree size and yield in years three through six of 'Gala'/M.26 apple trees treated with Apogee in the third year of planting. Calculations on Apogee-treated trees are shown in parentheses and were calculated based on the assumption that Apogee application would reduce tree canopy (volume) by 40% compared with unsprayed trees.

Year	Height (ft)	Width (ft)	Volume	Yield (bu/acre)	Yield Reduction with Apogee (bu/acre)
3	7.0 (7.0)	6.3 (6.3)	1164 (1164)	309 (309)	None
4	8.5 (7.9)	7.7 (7.1)	2111 (1668)	560 (402)	118
5	10 (9.4)	9.0 (8.5)	3393 (2845)	900 (755)	145
6	10 (10)	9.0 (9.0)	3393 (3393)	900 (900)	None

The cost-benefit analysis for deciding whether or not to apply Apogee in young orchards will hinge on several factors. These include the number of fire blight infection periods that occurred during bloom, the severity of fire blight the previous season, the susceptibility of the scion variety and rootstock, and the age and vigor of a planting. After extended discussions among the fire blight researchers and horticulturists at Geneva and Highland, we developed the following model for determining when Apogee applications might be justified as a blight-prevention strategy in a young apple orchard. This point system was derived from our "best guesses", so this model will undoubtedly change as more data become available. The model assumes that growers are making every attempt to control blossom blight using streptomycin or streptomycin plus

Messenger in young orchards. Apogee use is therefore viewed as an additional measure to be employed only in the most severe situations.

At petal fall, circle the appropriate response for the orchard in question:

1. Was fire blight found in or around your orchard in the past 2 years?
Yes=1, No=0

2. Is the cultivar susceptible?
Very=100, Moderately=50, Slightly=0

3. Tree vigor status?
Below average=0, Average=50, Above Average=100

4. Did MARYBLYT predict a high risk or an infection event prior to petal fall?
No=0
Yes, and the total EIP is less than 200=50
Yes, and the total EIP is greater than 200=100

5. Did you omit any streptomycin sprays that would have been required to cover MARYBLYT infection periods?
No=0, Yes=100

6. Have there been any trauma events during bloom (hail or wind storms)?
No=0, Yes=100

Now apply the formula: ***y* = 1 - (2+3+4+5+6)**, where you replace the numbers in the formula with the points from the corresponding question above. If *y* is 250 or greater, then an Apogee application is probably warranted. For Apogee treatment of trees less than 5-years old, the rate of application should be reduced to 6 oz/100 gal, and the grower must balance the benefit of shoot blight control against the drawback of reduced shoot growth.

Several questions come up as one considers each of these conditions. Again, we stress that this model was written specifically for plantings between the ages of 2 to 6 years old, the orchard ages that frequently suffer the most severe tree losses to fire blight. Fire blight in or around your orchard means exactly that. In this model, we make the assumption that disease pressure is insignificant in orchard blocks where fire blight has been absent for two or more years.

We also assume that the orchard blocks in question are regularly scouted and that good sanitation practices, such as pruning, are followed. If any of your blocks (or any of your neighbor's blocks) have had fire blight in them in the last two years, consider that the potential for fire blight infection exists in your orchard should conditions be favorable during bloom. Favorable conditions means those conditions which pose a high risk for infection as determined by the fire blight forecaster *MARYBLYT*.

Apple cultivars differ considerably in their susceptibility to fire blight, but cultivars may be grouped differently, depending on how susceptibility is evaluated. Table 2 ranks the susceptibility of several cultivars based on field observations. Although a particular cultivar's susceptibility to fire blight is largely a function of its genetic make-up, other factors, particularly nutrition, contribute to a tree's susceptibility. In general, vigorously growing trees are more susceptible to fire blight than slow-growing trees. Orchards with high nitrogen levels where young trees are being pushed to fill their allotted space should be considered high risk for fire blight, and thus good candidates for Apogee to slow tree growth.

Table 2. Relative susceptibility of commonly grown cultivars to fire blight(1)

Very Susceptible		Moderately Susceptible		Slightly Susceptible
Braeburn	Jonamac	Baldwin	Gravenstein	Delicious
Fuji	Jonathan	Cameo	Macoun	Liberty
Fuji 2	Mutsu	Cortland	McIntosh	Northern Spy
Gala	Paula Red	Empire	Monroe	Stayman
GingerGold	R. I. Greening	Enterprise	NY 674	
Honeycrisp	Rome Beauty	Fortune	Pioneer Mac	
Idared	Spigold	Gold Rush	Spartan	
Jerseymac	Twenty Ounce	Golden Delicious	Starkspur	
Jonagold	Tydeman	Golden Supreme	Wealthy	

(1) Modified from: Breth, D.I., Reddy, M.V.B., Norelli, J., and Aldwinckle, H. 2000. Successful fire blight control is in the details. New York Fruit Quarterly 8(1):10-16.

For those who run *MARYBLYT* on their farm, the answers to question numbers 4 through 6 are straightforward. Referring to question 4, consider the highest EIP (**E**piphytic **I**noculum **P**otential) value attained during bloom. Remember that *MARYBLYT* resets EIP values to zero after a streptomycin application, so be careful to look over the entire range of EIP values during bloom. Referring to question 5, a missed application is an application that was not applied within 24 hours after a *MARYBLYT* 'high risk' warning (i.e., 3 out of the 4 infection criteria have been met). We assume that you check and update *MARYBLYT* once every 24 hours (i.e., daily, preferably at the same time each day). And lastly, we consider a trauma event has occurred if hail has opened wounds on trees or winds have been high enough to noticeably damage the foliage prior to petal fall. Under the most severe conditions (e.g., those that occurred in Southwestern Michigan in 2000), virtually all apple cultivars can develop fire blight. This is a judgement call and should vary depending upon the varieties affected and the extent of damage.

Apogee is used in situations where fire blight was not well managed (for whatever reason). It is important to note that Apogee **will not** and **cannot** act as a substitute to standard management practices. Thus, an effective program for management mandates that Apogee be used in conjunction with a delayed dormant copper spray, timely blossom blight sprays, and good sanitary practices as part of an integrated pest management strategy to control fire blight.

FQPA Comments Needed on Consent Decree

Source: John Wargowsky, Ohio Fruit & Vegetable Growers

On January 19, 2001, the EPA entered into an agreement with the Natural Resources Defense Council to "settle" litigation pending on the Food Quality Protection Act (FQPA). The EPA chose to exclude other organizations, including the American Farm Bureau, American Crop Protection Association, and American Chemistry Council.

The agreement calls for a "Consent Decree" that would impose a court-enforceable schedule for implementation of parts of the FQPA. In many cases key data will not be available on products before EPA will be required to make decisions. A rush to meet these deadlines may jeopardize the future availability of product uses and products. For this schedule to take effect, the judge must agree to the Consent Decree. Before making his decision, the judge will consider the comments of all affected parties.

Ohio fruit and vegetable growers are asked to write letters describing their concerns about this issue and send them to the EPA by May 21. Send letters to: U.S. Environmental Protection Agency, OPP Public Regulatory Docket (7502C), Docket for Comments on Proposed Consent Decree and Settlement Agreement - FQPA Implementation, Ariel Rios Building, 1200 Pennsylvania Avenue, NW, Washington, D.C. 20460 or **e-mail comments to: <opp-docket@epa.gov>**.

Information and concerns to include in your letter: Your name and description of your farm. If you use organophosphates such as Imidan, Guthion, Lorsban/Dursban, or carbamates such as Sevin, tell the EPA why these products are important to your operation and what would happen if you lost access to them. Express outrage/concern regarding the Consent Decree and the process thus far (i.e. EPA ignoring farmers concerns and moving ahead and signing an agreement with the Natural Resources Defense Council only.) The Consent Decree is inconsistent with the intent of Congress for a science-based

implementation of FQPA. Arbitrary cancellation of products would greatly reduce the number of pest control tools available to growers. Further study and research is still needed for the development of a Cumulative Risk Assessment model. Premature restrictions on products without the availability of alternatives could have a devastating impact on agriculture.

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: East District; Erie & Lorain Counties

Source: Jim Mutchler, IPM Scout

Traps Used: STLM=wing traps, SJS=Pherocon-V, Others=MultiPher®

Apple: 5/2 - 5/8
RBLR: 34.5 (up from 27.5)
SJS: 1.9 (up from 0)
STLM: 808 (up from 675)

Peach: 5/2 - 5/8
OFM:* 23.3 (up from 3.7)
RBLR: 47.3 (up from 45.7)

Other pests include green apple aphid, white apple leafhopper, European red mite, rosy apple aphid.

*OFM Biofix April 30, DD (base 45) accumulated 5/9 = 185. See last week's OFM article.

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: 5/2 - 5/8
RBLR: 28.6 (down from 77.3)
SJS: 0 (same)
STLM: 250 (up from 175)
PC: 0 (down from 1)

Peach: 4/24 (bloom) - 5/1 (fruit set)
OFM:* 18.8 (up from 15.8)
RBLR: 59.8 (down from 70.2)
TPB: 0.3 (first report)

Other pests include green apple aphid, white apple leafhopper, European red mite, green peach aphid.

*OFM Biofix April 30, DD (base 45) accumulated 5/9 = 185. See last week's OFM article.

Northern Ohio Apple Scab & Fire Blight Activity from SkyBit®

	Dates (Green tip = April 9, Bloom = May 1)	**Level of Disease Activity**
Observed	May 1-7, 9	**Scab** active, but no infection
	May 8	Possible **scab** infection & damage
	May 1-7, 9	No **fire blight** activity
	May 8	**Fire blight** active, but no infection
Forecast	May 10, 14, 15	**Scab** active, but no infection expected
	May 11-13, 16-19	Possible **scab** infection & damage
	May 10	No **fire blight** activity
	May 11, 12, 19	Possible **fire blight** infection & damage
	May 13-18	**Fire blight** active, but no infection

Degree Day Accumulations for Selected Ohio Sites January 1, 2001 to date indicated

	Actual DD Accumulations 5/9/01				**Normal Degree Day Accumulations for 5/16/01**	
Location	**Base 43° F**	**Base 43° F normal accumulations**	**Base 50° F**	**Base 50° F normal accumulations**	**Base 43° F**	**Base 50° F**
Akron - Canton	500	476	288	213	586	282
Cincinnati	783	762	458	374	906	474

Cleveland	497	449	294	201	554	265
Columbus	709	585	418	274	710	356
Dayton	670	594	406	282	721	367
Mansfield	517	464	307	208	572	275
Norwalk	512	429	301	191	535	257
Piketon	771	782	445	393	923	492
Toledo	493	416	284	184	523	250
Wooster	537	437	316	188	541	251
Youngstown	482	422	278	186	522	246

Phenology

	Range of Degree Day Accumulations	
Coming Events	**Base 43° F**	**Base 50° F**
San Jose scale 1st catch	189-704	69-385
Lesser peachtree borer 1st catch	224-946	110-553
White apple leafhopper nymphs present	236-708	123-404
Oriental fruit moth 1st flight peak	259-606	96-298
1st codling moth catch	273-805	141-491
Spotted tentiform leafminer sap-feeders present	295-628	130-325
European red mite egg hatch complete	361-484	183-298
Plum curculio oviposition scars present	448-670	232-348

Thanks to *Scaffolds Fruit Journal* (Art Agnello)

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