Ohio Fruit ICM News

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Calendar - Newly added in ***Bold***

August 24, Organic Horticultural Crop Field Day, OARDC, Wooster, Ohio. For more information phone (330) 263-3878.

August 24, 2006 Bramble Field Day, 3pm – 7pm at Nourse Farms, Whately MA. Please pre-register for this meeting by contacting Sonia Schloemann at 413-545-4347 or sgs@umext.umass.edu.

August 25-26, Mohican Valley Farm Festival featuring four farms in Ashland County engaged in vegetable production, free range poultry, certified organic poultry processing, orchard and small fruit production and horticulture. Workshops and seminars for consumers and producers will also be offered. This fresh taste of the country event is sponsored by Ohio State University Extension, the Ohio Ecological Food and Farm Association, Ashland County Pheasants Forever, Natural Resources Conservation Service, Ohio Farm Bureau, American Small Farm Magazine, Ashland County Soil and Water Conservation District, and Ashland County Farm Bureau. For more information, visit: www.Mohicangardens.com

Aug. 30-Sept.1 North American Fruit, Explorers (NAFEX) and SFF Annual Meeting, Holiday Inn North, Lexington, KY. Contact John Strang 859-257-5685; e-mail: jstrang@uky.edu

September 14-15, The Northwest Ohio Cooperative Kitchen Presents Ideas to Reality: Value Added Success - two workshops including, product diversification and packaging (September 14 from 6 to 8 p.m. at Agricultural Incubator Foundation - NOCK, 13737 Middleton Pike, Bowling Green, OH) and Value-Added Agriculture & Cooperative Development (September 15 from 8:30 to 10:30 a.m. at EISC & CIFT Main Office, 5555 Airport Highway, Ste. 100, Toledo, OH). For more information, contact Paula Ray, Agricultural Incubator Foundation at 419-823-3099 or via e-mail: aif@agincubator.org. You may also visit the Center for Innovative Food Technology website for additional details and the registration form: http://www.cift.eisc.org

September 16-17, Ohio Pawpaw Festival, Lake Snowden. The Eighth Annual Ohio Pawpaw Festival will take place Saturday, September 16 & Sunday, September 17, 2006, at Lake Snowden near Albany, Ohio. For more information http://www.pawpawfest.com

September 19-21, Farm Science Review, Molly Caren Agricultural Center, London. http://fsr.osu.edu/

September 21, Grape and Pawpaw Field Day KSU Research Farm, Mills Lane, Frankfort, KY. For more information contact Kirk Pomper at 502-597-5942

October 6-7, U.S. Highbush Blueberry Council Fall Meeting. Regency, Bar Harbor, Maine , Regency, Bar Harbor, Maine. For more information (207) 288-9723.

November 9-11, Southeast Strawberry Expo, Sunset Beach, NC (near Wilmington). For more information, contact the NC Strawberry Association, 919-542-3687 or ncstrawberry@mindspring.com

December 5-7, Great Lakes Fruit, Vegetable and Farm Market EXPO. DeVos Place, Grand Rapids, Mich., www.glexpo.com.

January 7-9, 2007, Wisconsin Fresh Fruit and Vegetable Conference, Olympia Resort and Conference Center, Oconomowoc, www.wisconsinfreshproduce.org

Jan. 8-9, 2007, Kentucky Fruit and Vegetable Conference and Trade Show, Holiday Inn North, Lexington, KY. Contact John Strang 859-257-5685; e-mail jstrang@uky.edu

January 25-28, 2007, Southern Sustainable Agriculture Conference. The Galt House Hotel and Suites, Louisville, Ky. For more information (678) 494-0696

Jan. 29. Beginning Commercial Apple Production Workshop. Indianapolis. For more info contact Peter Hirst, 765-494-1323 or hirst@purdue.edu

Jan. 29-31. Indiana Horticultural Congress and Trade Show, Indianapolis.

January 30-February1, 2007, Mid-Atlantic Fruit & Vegetable Convention. Hershey Lodge &. Convention Center, Hershey PA

February 9-12, 2007, North American Strawberry Growers Association Strawberry Symposium. Ventura, California. For more information http://www.nasga.org/.

February 12-13, 2007 Ohio Grape-Wine Short Course, Shisler Conference Center at OARDC in Wooster, OH.

February 14-15, 2007, Empire State Fruit and Vegetable Expo Syracuse, N.Y. For more information http://www.nysaes.cornell.edu/hort/expo/

February 16-17, 2007, North American Farmers' Direct Marketing Conference and Trade Show. Hyatt Regency Hotel, Calgary, Alberta, Canada. For more information www.nafdma.com.

Comments from the Editor

I missed Ron Becker's trap report last week so that is in here. SCAFFOLDS Fruit Journal can be subscribe to by emailing Dr. Agnello at ama4@cornell.edu or it is also online at http://www.nysaes.cornell.edu/ent/scaffolds/. Facts for Fancy Fruit can be subscribed to at http://www.hort.purdue.edu/fff/mailinglist.html.

Coming Events -Art Agnello SCAFFOLDS Fruit Journal, Volume 15, No. 23

COMING EVENTS Ranges (Normal +/- Std Dev): 43F 50F

Coming Events:	Ranges (Normal +/- Std Dev):	
Apple maggot flight subsides	2772-3374	1908-2368
Lesser appleworm 2nd flight peak	2197-3259	1473-2263
Lesser peachtree borer flight subsides	2996-3446	2017-2433
Obliquebanded leafroller 2nd flight peak	2620-3016	1784-2108
Oriental fruit moth 3rd flight peak	2641-3249	1821-2257
Oriental fruit moth 3rd flight subsides	2962-3381	2000-2288
Redbanded leafroller 3rd flight peak	2746-3206	1881-2327
San Jose scale 2nd flight subsides	2639-3349	1785-2371
Spotted tentiform leafminer 3rd flight peak	2599-3045	1775-2121

Fruit Observations and Trap Reports Trap reports for Columbus are posted at least once per week on the internet at http://bugs.osu.edu/welty/tree-traps.html

Site: Holmes, Medina, and Wayne Counties
Ron Becker, IPM Program Assistant
Date: August 18

Frog eye leaf spot is starting to be noticed more than in past years. We have also started noticing the fruit rot phase (black rot) on a very limited number of apples (mostly Cortland). Sooty blotch and fly speck are starting to show up in the sprayed orchards.

Miticides applied last week for European red mite (in both apples and peaches) are working well. Otherwise, insect activity remains low.

Wayne:

Codling Moth - 4.3 (down from 8.9)
Apple Maggot - (Sum of 3, with apple essence lure) - .3 (same as last week)

Holmes:

Codling Moth - 2.1 (same as last week)
Apple Maggot - (Sum of 3, no lure) - 0 (same as last week)

Medina:

Codling Moth - 1.8 (up from 1.5)
Apple Maggot - (Sum of 3, no lure) - 0 (same as last week)

Labor Shortage

John Wargowsky, OFBF Director of Labor Services and Tom Sachs, OFGS & OVPGA Executive Director, are looking for information on how labor shortages may have affected you this growing season. They wish to compile this data to reinforce the need for comprehensive immigration reform. If you wish to help, please e-mail John Wargowsky (jwargows@ofbf.org) the following information if you have experienced worker shortages this year.

1) Crop -
2) Number of workers short -
3) Total workers needed -
4) Crop loss in terms of acres, dollar value lost, etc. -
5) Indicate if you prefer your data be used only in collective data or if we may contact you develop media stories to present our story to the public and Congress.

Controlling Flyspeck Prior to Harvest by Dave Rosenberger, Plant Pathology, Highland (Source: Art Agnello SCAFFOLDS Fruit Journal, Volume 15, No. 23)

Flyspeck disease on apples continued to cause problems for some New York and New England apple growers in 2005. Last summer I published an article reviewing our current understanding of flyspeck development in northeastern United States (Scaffolds Fruit Journal 14[14], 20 June 2005; http://www.nysaes.cornell.edu/ent/scaffolds/2005/050620.html). To summarize, flyspeck ascospore release begins about the time that apple trees reach petal fall. Ascospores are relatively unimportant in sprayed orchards because scab fungicides prevent infections, but the ascospores initiate new infections on wild hosts in the orchard perimeters. After

270 hr of accumulated wetting counting from petal fall (hr-awpf), primary infections initiated by ascospores on wild hosts begin releasing conidia that blow into orchards, where they can initiate infections on apple fruit. Another 270 hr of accumulated wetting (hr-aw) is required before the flyspeck becomes visible on fruit. We have documented repeatedly over the past five years that flyspeck incidence on fruit left unprotected after early June increases rapidly soon after we reach 540 hr-awpf. Dew periods must be included in calculations of hr-aw, and in some years dews contribute a significant number of wetting hours during August and September.

In the article cited above and in previous extension articles, I have suggested that Topsin M, Sovran, Flint, and Pristine would eradicate flyspeck infections on apple fruit that had not yet accumulated more than 100 of the 270 hr-aw required for lesion development on fruit. That recommendation was based on my interpretation of previous field trials, and it meant that adequate flyspeck control should be expected if the first summer fungicide spray was applied anytime between 270 and 370 hr-awpf. Unfortunately, research conducted in 2005 suggests that our model for spray timing needs some revisions. The details of the 2005 trial have been published (see citation at the end of this article) and will not be repeated here, but the resulting changes in our understanding of flyspeck are outlined below. Those who want only the practical recommendations without the confusing details can skip directly to the last section of this article.

Revised understanding of fungicide activity against flyspeck

Our 2005 field trial provided evidence that none of our apple fungicides truly eradicate pre-existing flyspeck infections. Instead, the fungicides appear to arrest fungal growth, thereby extending the incubation period for flyspeck. Infections initiated in late June or early July before the first summer fungicide is applied may become "quiescent" until fungicide residues drop below the levels required to suppress fungal growth. As fungicide residues dissipate during the interval between the last spray and harvest, some of these suppressed colonies can begin growing again and then appear on fruit prior to harvest, even when there is less than 270 hr-aw between the presumed end of fungicide protection and the time that fruit are harvested.

As an example, consider a hypothetical case where the first summer fungicide was applied at 370 hr-awpf. Some of the earliest flyspeck infections in that orchard would have a 100 hr "head start" toward the 270 hr-aw required for disease appearance. If fungicide coverage was maintained throughout the rest of the summer, those early infections would remain suppressed right up through harvest. However, if a heavy rain (more than 2 inches rainfall) occurred on 1 Sept. and removed all fungicide residues, then the suppressed flyspeck infections could resume growth and might appear after only 170 hr of additional wetting, counting from the end of the 1 Sept. rain event in this example.

If fungicides suppress but do not eradicate pre-existing flyspeck infections, then we must grapple with other unresolved issues. Do suppressed lesions really take off again where they left off as I've suggested in the example in the previous paragraph, or does post-infection application of fungicides set back lesion growth so that more than 270 hr-

aw (pre-spray hours plus end-of-season hours) are required before the disease appears on fruit? Do weather conditions following post-infection fungicide sprays affect survival of flyspeck infections? How can we estimate when suppressed flyspeck colonies resume growth since we have no accurate means of assessing when fungicide residues on fruit surfaces drop below suppressive levels? I don't have answers to these questions, but the answers may not be essential for designing control programs on a practical level.

Revised spray-timing recommendations for controlling flyspeck:

Given all of the evidence available to date, a conservative approach to controlling flyspeck can be outlined as follows:

1 - Fungicide protection against flyspeck should be initiated beginning at 270 hr-awpf and should be maintained until close to harvest, with fungicide coverage being renewed every 21 days or after 2 inches of accumulated rainfall, whichever comes first.

2- The 270 hr-aw incubation period for flyspeck on fruit can be viewed as a cumulative "grace period" for absence of fungicide coverage during the growing season. If the first spray during summer is delayed to 370 hr-awpf (thereby using up 100 hr of the grace period), that may reduce the pre-harvest "grace period" to only 170 hr-aw for the period after fall rains remove fungicide protection prior to harvest.

3 - Growers who fill large storage rooms rapidly during harvest should recognize that flyspeck can continue to develop on warm fruit after harvest if fruit are wet. I have no detailed data on flyspeck development during storage, but I would guess that 70 hr of the 270-hr incubation period might be completed after harvest in storage rooms where high humidity and fluctuating temperatures caused by the addition of warm fruit each day can result in condensation on cooled fruit from previous harvests. Growth of flyspeck on harvested fruit would cease as soon as fruit surface temperatures in the middle of the stack drop below the limiting temperature for flyspeck incubation, but I'm not certain what that temperature is (perhaps 45°F?). If fruit remain wet and warm after harvest, then the grace period for accumulated wetting during the growing season might be only 200 hr because some of the grace period must be reserved for postharvest disease development. Again, we have no experimental evidence pro or con, but I suspect that postharvest fungicide drenches will suppress flyspeck development in storage. If that is true, then the full 270-hr-aw grace period would be available pre-harvest for fruit that will receive postharvest fungicide treatments.

Practical suggestions for late-summer control of flyspeck

The bottom line is that in years favorable for flyspeck development, we can take fewer risks (i.e., we need tighter summer fungicide programs) than we had previously supposed. In hot, dry seasons, one or two fungicide sprays will still provide complete control of flyspeck, but in wet years a final fungicide spray will be needed in September for varieties that will be harvested after September 20.

Severity of flyspeck in any given year may be influenced by the weather conditions the previous year because wet summer/fall seasons will give rise to more overwintering inoculum in wild hosts. The higher inoculum levels will result in greater disease pressure the following year. Wet summers also give rise to situations during the growing season where fruit are unprotected due to fungicide wash-offs from thunderstorms or other rain

events. Those intermittent periods without fungicide protection are of little consequence in years with dry September weather because they generally will not exceed the 270-hr-aw grace period required for signs of flyspeck to appear on fruit. In a wet September, however, the cumulative effect of intermittent lapses during the growing season plus pre-harvest wash-off of fungicides can result in significant losses to flyspeck if no sprays are applied in September.

Decisions on if and when to apply a September spray should be made after careful consideration of numerous factors:

1 - Did the orchard in question have consistent fungicide coverage from 270 hr-awpf up through August, or were there significant periods where flyspeck infections could have been initiated during summer? In a year when July and August are hot and dry, even a modest fungicide program terminating in mid-August will probably prove adequate, whereas a September spray may be more critical if the first summer spray was delayed and/or in years where frequent downpours eliminated fungicide protection between sprays.

2 - Is the orchard in question a known problem block that is consistently exposed to high inoculum and/or slow drying conditions? If so, apply a September fungicide spray to at least the orchard perimeter rows where inoculum levels are highest.

3 - Are extended wetting periods predicted for the first 15-20 days of September? Orchards with high inoculum and or sketchy spray coverage during summer should be recovered in September prior to predicted wettings that might last 3-5 days (e.g., a hurricane coming up the east coast).

4 - Does the orchard contain clustered fruit where coverage from August sprays may have been less than perfect? If so, an extra spray in September may help to cover fruit that shifted position since the last spray in mid-August.

Even if fungicides are applied at the correct times, control failures can occur due to poor spray coverage. Using more water per acre and reducing travel speeds can provide improved coverage, especially for heavily cropped trees where fruit are clustered on limbs.

There has been little research on the value of spray adjuvants for improving fungicide activity against flyspeck. However, a good spreader/sticker might improve fungicide coverage and retention for sprays applied in late summer. Be aware, however, that using too much spreader can actually increase run-off from the fruit, thereby reducing fungicide residues. A really effective sticker might prevent fungicides from redistributing to the back sides of fruit during subsequent wettings. Thus, I am reluctant to recommend any specific adjuvants for late summer sprays because I'm not certain how they will affect flyspeck control.

Reference cited

Rosenberger, D.A. and Meyer, F.W. 2006. Post-infection control of flyspeck with new fungicides, 2005. Fungicide and Nematicide Tests (online.) Report 61:PF024. DOI:10.1094/FN61. The American Phytopathological Society, St. Paul, MN.

Michigan Predicted Peak 2006 Apple Harvest Dates by Philip Schwallier, District Horticulture Agent, CHES Coordinator, Amy Irish-Brown, District ICM Agent, CHES (Source: MSU Fruit Crop Advisory Team Newsletter, Vol. 21, No. 14, July 25)

Apple maturity for 2006 is expected to be near normal in the southern part of the state to one week ahead of normal in the northern part of the state. Most of the state experienced an early end of a mild winter and periods of alternating hot and cold temperatures. As a result, bud growth developed simultaneous from the south to the north. Bloom developed concurrently and was compressed from the south to the north, perhaps one of the most compressed bloom ever.

Early bloom and cool/hot alternating weather give us predicted harvest dates near normal to as much as 10 days ahead of normal (Table 1). These predicted harvest dates are for the center or peak harvest of these varieties for CA storage. This year the 2006 predicted harvest dates are compared to the rough normal harvest dates and last year's predicted harvest dates. This year the state will harvest apples roughly the same as last year to one week ahead of last year (Table 2).

Hot temperatures during July and August will hasten the maturity of some varieties. Gala is notorious for ripening early when late summer temperatures are above normal. Other varieties are less prone to hot temperatures advancing fall maturity. Still other varieties ripen when cold temperatures occur at near harvest time.
The normal harvest dates for other varieties are listed in Table 3 for the Grand Rapids area. This year's 2006 predicted dates are a rough estimate based on the McIntosh, Jonathan and Red Delicious predicted dates. Other areas of the state should adjust non-predicted varieties based on their own history.

Table 1. 2006 predicted peak harvest dates.

Full bloom date				**Predicted harvest date**			
Station	McIntosh	Jons	Reds	McIntosh	Jons	Reds	Observer
SWMREC	4-29	5-1	5-3	9-4	9-20	9-29	Shane
Deerfield	4-29	5-2	5-4	9-1	9-20	9-27	Tritten
Flint	5-1	5-4	5-5	9-3	9-23	9-29	Tritten
Peach Ridge	5-2	5-3	5-4	9-6	9-23	9-30	Schwallier
Ludington	5-10	5-11	5-11	9-13	10-4	10-10	Danilovich
NWMHRS	5-8	5-12	5-12	9-10	10-2	10-8	Nugent

Table 2. 2006 predicted peak harvest dates compared to normal and last year.

Days ahead of normal				**Days ahead of last year**		
Station	McIntosh	Jons	Reds	McIntosh	Jons	Reds
SWMREC	6	1	1	0	0	-3
Deerfield	7	1	4	7	7	7
Flint	7	2	3	6	5	7
Peach Ridge	6	5	6	2	2	3
Ludington	3	1	2	3	-5	-2

NWMHRS	10	7	7	6	7	7

Table 3. Normal peak harvest dates for varieties for the Grand Rapids area.

Variety	**Normal date**	**2006 predicted date**
Paulared	8-24	8-18
Gingergold	9-2	8-26
Gala	9-10	9-3
McIntosh	9-15	9-6
Honeycrisp	9-18	9-12
Empire	9-20	9-14
Jonathan	9-28	9-23
Jonagold	9-28	9-23
Golden Delicious	10-2	9-25
Red Delicious	10-5	9-30
Idared	10-10	10-2
Rome	10-15	10-9
Fuji	10-25	10-20
Braeburn	10-25	10-20
Goldrush	11-1	10-26

Ohio Poison Control Number

(800) 222-1222
TDD # is (614) 228-2272