Ohio Fruit ICM News
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Calendar

September 20-22: Farm Science Review, Molly Caren Agricultural Center, London, OH. Details at: <http://fsr.osu.edu>.

October 14-15, 2005: Highbush Blueberry Council (USHBC) Fall Meeting, Amway Grand Plaza Hotel, 187 Monroe NW, Grand Rapids, Michigan. Call 616-885-2000 for more information.

November 15: Ohio Ag and Hort Human Resource ManagersForum, Hilliard, OH. 10:00 am - 2:30 pm. Registration and fee requested by November 8. Contact Mid American Ag and Hort Services at 614-246-8286, or visit <www.midamservices.org> and click on Eventsfor registration form and details.

December 6-8, 2005: Great Lakes Fruit, Vegetable, and Farm Market EXPO, DeVos Place Convention Center, Grand Rapids, Michigan. For additional information, visit <www.glexpo.com>.

Third generation codling moth: Count on it!

Source: David Epstein, MSU IPM Program; Carlos Garcia-Salazar, MSU Extension; John Wise and Larry Gut, MSU Entomology, MSUE Fruit CAT, (The tables were dropped due to tabulation problems. They are available at: http://www.ipm.msu.edu/CAT05_frt/F08-23-05.htm)

The incidence of unusually high daily temperatures and overall degree day accumulations registered this summer in Michigan will result in a third generation of codling moth (CM) for most of the state. Using photoperiod and temperature data from weather stations around the state, a model developed by Drs. Carlos Garcia-Salazar and Mark Whalon predicts full third generation CM activity for all growing regions of the state south of Bear Lake in Mason County (Table 1). Dr. John Wise, at TNRC in Fennville, reports that third generation began August 18 at TNRC.
Third generation adults will mate, the females will lay eggs, and growers will find worms in their apples at harvest time if control measures are not taken to manage this third generation. Also keep in mind that eggs laid on harvested fruit will hatch in the packing-house or on the processing line, further exacerbating problems for growers not taking actions to control the third CM flight.

The third generation is often referred to as a suicide generation, because under average Michigan weather conditions, the larvae that hatch from third generation eggs do not have enough time to mature to the overwintering fifth larval instar life stage. This year a large percentage of larvae will enter diapause and therefore contribute to the next seasons population.

Important considerations for third generation CM control include predicted harvest dates for different cultivars and associated pre-harvest (PHI) and re-entry intervals (REI) for the different control materials (Table 2). Options for controlling CM include conventional broad-spectrum insecticides, like the organophosphate (OP) compounds, Guthion and Imidan and a number of pyrethroid insecticides. These materials are applied primarily targeting CM egg hatch, beginning at 250 GDD post biofix. Apple growers should be aware that resistance to the OP compounds has been detected in Michigan orchards across the state, most extensively in the Fruit Ridge and southwest production areas. The levels of resistance detected were high enough that heavy dependence on OP's for CM control would likely have failed to protect the crop from infestation.

Among the newer insecticides for CM control registered over the past few years are the insect growth regulators Rimon and Intrepid. Rimon acts by suppressing development within the egg, as well as larvae that consume it. Hatching of eggs laid by treated adults will also be inhibited. Eggs are particularly susceptible to these products when laid on top of sprayed residue, thus sprays are timed earlier than most other CM control materials. Suggested timing for the first application is biofix plus 100 GDD.

Intrepid provides good control of CM with a residual action of about 10 to 14 days. This product is an insect growth regulator that primarily affects CM larvae, but also has some activity on eggs and has sublethal effects on adults. The best results have been achieved by applying the first spray at biofix plus 150 to 200 GDD to take advantage of the sublethal effects. The addition of an agricultural adjuvant is recommended to improve initial spray deposition.

The neonicotinoids, Assail and Clutch, are another group of compounds that have recently become available for CM control. Assail will provide good control of CM with a

residual action of 10 to 14 days. Proper timing and coverage is required to achieve control. The best results have generally been achieved when the first application is made prior to the start of egg hatch (ca. biofix plus 150 to 200 GDD). Assail is labeled for CM control at the rate of 2.5 to 3.4 ounces per acre, but the high rate has shown better performance, especially for second generation CM.

Clutch, a new neonicotinoid registered for use in pome fruits, is a broad-spectrum material targeting CM as well as aphids, leafhoppers, PC, STLM, OFM and pear psylla. Trials conducted at the TNRC in 2004 showed Clutch to be most effective against CM applied at the egg hatch timing of 250 GDD and at the high rate of 6-oz/ac rate. Significantly less control was achieved using a lower rate of 3-oz/ac.

Danitol can provide good control of CM. It is highly active and fast acting on all live stages, though residual activity is limited.

SpinTor is not typically used for CM control, although its strong activity on eggs and its short PHI may be useful for third generation control considerations.

Sevin is a carbamate insecticide not typically used for CM control, but with a 3 day PHI, it may be useful for control of CM adults and larvae very near harvest.

Granulosis virus is another material with a very short REI and PHI. This is a naturally occurring virus that goes by the scientific name of Cydia pomonella granulovirus (CpGV), and is only active on the larval stage of codling moth. Two CpGv products were available for use last year, Cyd-X and Virosoft. Our MSU on-farm trials and grower feedback indicated both performed well. Consult June 1, 2004 Fruit CAT Alert article for a detailed discussion of CpGv and its use. Our overall experience is that frequent application of a low rate of product is the best approach for using this biopesticide. (Figure 1)

Observations from the IDFTA China Tour and Implications for the US Apple Industry

Source: Dave Rosenberger (DH) - Plant Pathology, Highland; Steve Hoying (SH) - Lake Ontario Fruit Team, Newark: & George Lamont (GL) - NYS Hort Society, Albion,
Scaffolds Fruit Journal, Volume 14, Issue 23, August 22, 2005

The three of us participated in the IDFTA tour of apple production in China that occurred July 12-24, 2005. David Eddy, Senior Western Editor with Meister Media, provided an excellent blog about our trip that can be accessed on-line at: http://www.americanfruitgrower.com/e_notes/page.php?page=trip

The objective of this article is to summarize our personal assessments of how developments in China might affect the apple industry in northeastern United States. After our return to the US, each of us agreed to compile a list of our top five observations that might have implications for the eastern apple industry. Those observations were submitted without any further discussion or consultations among the authors. Our

individual observations were then grouped into several broad categories with minimal editing. The initials preceding each observation below indicate the author who contributed the comment.

Observations on China's economy and growth trajectory:

DR: Energy demands from continued urbanization/industrialization will cause continued upward pressure on world fuel prices over the next two decades. Sixty to seventy percent of the 1.3 billion people in China still live in small rural villages, but most of them aspire to a US lifestyle. The apple industry should be seriously thinking about how to reduce fuel requirements for growing, storing, and shipping fruit because the coming energy crisis will cause huge economic dislocations and re-juggling of industries within the world economy.DR: The Chinese people are industrious, optimistic, entrepreneurial, and appear to operate with a minimum of government interference (or assistance) in their agricultural enterprises.SH: Throughout the country, Chinese people are excited about the world attention that they will receive as they host the Olympics in 2008. In preparation for the Olympics, China is putting a "new face" on the country with an astonishing building and beautification program. We saw building cranes scattered like oil derricks across the country, particularly in Beijing and Qingdao, which are venues for the Olympics. An unbelievable amount of money is being spent just on landscaping highways. Money spent preparing for the Olympics may be reducing expenditures for other sectors such as agriculture. Up-to-date national policies for agriculture appear to be lacking, except perhaps as it relates to higher education, which the Chinese value greatly.

SH: The apple sector, although large by our standards, is relatively small as a total part of the Chinese economy. The manufacturing sector that is producing products for Dollar Stores and Walmarts is likely to receive more government attention and support than is agriculture. However, the industrialization of China may create labor shortages for agricultural producers and is already contributing to huge problems with air quality and water pollution. If and when China begins to address the costs of air and water pollution, that may cause both a slow down in their industrialization process and a significant increase in their costs of production for both agricultural products and manufactured goods.DR: Air and water pollution in China is tremendous; curbing pollution will eventually become essential and will significantly increase their costs.GL: China will continue to grow as a world economic power unless the political system blows up.

China's apple industry is huge and will continue to impact world markets:
GL: The volume of apples grown in China will continue to grow.SH: Chinese growers can use available technology to produce high-quality apples, but yields of high quality apples are low. Nevertheless, even if only a small percentage the 1.1 billion bushels of apples China produces expressly for fresh consumption are suitable for export, that could still be enough to disrupt world marketing. As the quantity of high-quality export apples increases, China's fresh-market production could set a floor price, at least for Fuji apples, and that pricing could affect the floor price for other varieties grown in the US.GL: Chinese will consume more apples and apple juice as their incomes increase.Implications for fresh-market apple producers:GL: China can grow good quality fresh apples, but the

growth in fresh-market apples will be slow because of literacy problems among producers and land policies that favor small producers.DR: China can and will produce high-quality Fuji, Gala, and other hard varieties for export to Pacific Rim countries, including the west coast of the US. Their ability to produce and export softer varieties (e.g., Mac, Empire) and niche varieties (e.g., Macoun, Honeycrisp, Stayman, Silken, etc.) is more questionable. This observation may have implications for what varieties eastern growers should be planting.SH: Significant quantities of fresh Chinese apples, other than Fuji, are unlikely to reach US markets for the foreseeable future (5 years). Even if the Chinese can meet phytosanitary standards for shipment of fresh apples to the US, export of varieties other than Fuji will be limited because the Chinese currently lack suitable precocious and disease-resistant rootstocks that would allow their industry to convert rapidly to other apple varieties.

DR: The development of China may have greater impacts on apple producers in the Pacific Northwest than on fresh-market apple producers in eastern United States. As China and India compete for fuel, higher fuel prices will raise costs for shipping west coast apples to eastern markets in the US. At the same time, the saturation of Pacific rim countries and western United States with cheap, hard "commodity" apples from China will set a low floor price for the kinds of apples traditionally produced in Washington State. Production of eastern varieties might remain profitable IF eastern producers and brokers can establish and maintain a market identity for eastern apples as compared with the "commodity" apples that will come from China.Implications for processing apples:GL: The volume of juice apples and apple juice concentrate from China will grow at a faster rate than fresh apple production and will be an increasing threat to the US processing market.SH: Chinese apple production poses a tremendous threat to the processing apple industry in the US. China already has the largest concentrate plants in the world and can move their concentrate to any place in the world through the Hong Kong container ports. Although some (many?) locations in China lack adequate roads and cold storage facilities for handling fresh apples, huge quantities of fruit suitable for concentrate production can be moved from relatively remote locations to the concentrate factories. At the same time, their fruit industry is looking for alternate products and outlets other than concentrate. Andre Juice (the largest concentrator in the world with a 1,020,000 ton concentrate capacity) has already built a jelly factory for using the pectin from the pomace. It seems likely that the Chinese will soon start to produce slices and perhaps dehydrated sauce for multinational companies in search of less expensive processing product than what can be accessed in the U.S.Summary comments: None of us can predict how world events will unfold over the next decade, the next year, or even the next day. Those of us on the IDFTA tour had an interesting glimpse of China as an apple producing country and as an emerging world power. Nevertheless, it was only a glimpse, and that glimpse was limited to a short time period and a relatively small area of a huge country. We came away with some common observations, some differences of opinion, and many "what if" questions. However, none of us would deny that China and Chinese apple producers will have a huge impact on the US apple industry over the next decade. It will be interesting to see how those impacts develop and what directions they will take.

AZM and Peaches
Source: Art Agnello, Entomology, Geneva, Scaffolds Fruit Journal, Volume 14, Issue 23, August 22, 2005

Peach growers probably have been aware of the impending termination of use of azinphosmethyl (AZM) products on peaches and nectarines proposed in 2001 by the EPA in their IRED (Interim Reregistration Eligibility Decision) agreement with the technical registrants -- Bayer CropScience, Gowan Company, and Makhteshim Chemical Works. These uses were originally scheduled to be phased out in December 2005, pending the evaluation of public comments submitted to EPA intended to support further review of this decision. Those comments have now been received and ruled NOT to merit a rescinding of this phase-out date; however, the EPA has in fact decided to extend the sale and distribution of existing stocks, as well as use by growers, until September 30, 2006. The full text of this decision can be accessed in the August 17, 2005 (Volume 70, Number 158) of the Federal Register, at:http:// www.epa.gov/fedrgstr

It makes somewhat dense reading, but what they want to make clear is that AZM registration on these crops will not be extended, but now they are allowing the use of existing stocks through next year's season. It may be prudently suggested that growers of these crops might wish to stock up on the currently labeled products for use next year.

National Apple Crop Estimate Down 10 Percent from 2004
Source: http://www.fruitgrowersnews.com

The U.S. Apple Association (USApple) released its 2005 production forecast during the Apple Crop Outlook and Marketing Conference Aug. 18-19 in Chicago. Total apple production in the United States this year is estimated at 223.45 million bushels, down 10 percent from last year and down 2 percent from the five-year average, according to USApple.

The Eastern crop is estimated at 53.7 million bushels, down 10 percent from last year's crop. In New York, the estimate is 25 million bushels, down 18 percent from 2004 but up 4 percent from the five-year
average. Pennsylvania's estimate is 10.5 million bushels, up 9 percent from last year and up 2 percent from the five-year average. In Virginia, the forecast is 6.5 million bushels, down 9 percent from 2004 and down 6 percent from the five-year average. North Carolina's forecast is 4.1 million bushels, up 11 percent from last year and up 14 percent from the five-year average. West Virginia's estimate is 1.9 million bushels, down 11 percent from the five-year average.

The Midwest crop is estimated at 27.67 million bushels, up 3 percent from both 2004 and the five-year average. Michigan is forecast at 20 million bushels, up 8 percent from its five-year average. Ohio's estimate is 2 million bushels, down 7 percent from 2004 and

down 4 percent from the five-year average. In Illinois, the estimate is 1.3 million bushels, up 19 percent from its five-year average.

The Western crop is estimated at 142 million bushels, down 12 percent from 2004 and down 3 percent from its five-year average. Washingtons estimate is 126 million bushels, down 13 percent from last year and down 1 percent from the five-year average. California's estimate is 9.7 million bushels, up 5 percent from last year but down 15 percent from its five-year average. In Oregon, the forecast is 3 million bushels, down 20 percent from last year and down 19 percent from the five-year average. Idaho's crop estimate is 1.5 million bushels, down 28 percent from 2004 and down 29 percent from its five-year average.

Pest Phenology

Coming Events	Degree Day Accum. Base 50°F
Codling moth 2nd flight subsides	1944-2536
Lesser appleworm 2nd flight subsides	1973-2387
Oriental fruit moth 3rd flight subsides	2000-2288
Lesser peachtree borer flight subsides	2011-2425
Obliquebanded leafroller 2nd flight subsides	2022-2438
Redbanded leafroller 3rd flight subsides	2142-2422
Spotted tentiform leafminer 3rd flight subsides	2246-2432

Revised, thanks to Scaffolds Fruit Journal (Art Agnello)

Degree Day Accumulations for Ohio Sites August 24, 2005

Ohio Location	Degree Day Accumulations Base 50° F Actual	Normal
Akron-Canton	2291	2167
Cincinnati	2872	2816
Cleveland	2372	2128
Columbus	2706	2432
Dayton	2521	2509
Kingsville	2117	1973
Mansfield	2224	2147
Norwalk	2333	2124
Piketon	2725	2736
Toledo	2409	2121
Wooster	2352	2016
Youngstown	2102	1969

Pesticide Fate Database Now Available on the Web
Source: EPA's Office of Pesticide Programs 08/19/05 http://www.epa.gov/pesticides via Will Smith, Cornell, Senior Extension Associate, Pesticide Management Education Program

The Environmental Protection Agency (EPA) is making available on the Web a database that provides information about what happens to pesticides after they are used in the environment. The database contains summary information on the physical and chemical properties and the environmental fate and transport of pesticides found in products registered in the United States. It also contains information on the degradates, or breakdown products, of these registered pesticides. Using a query-based system, the Pesticide Fate Database allows users to search, sort, and retrieve up-to-date pesticide fate and chemistry information derived from studies submitted by pesticide manufacturers in support of the registration/reregistration of their pesticide products. Some of the important information about pesticides in the current database include:

1) basic physical and chemical properties,

2) biotic and abiotic degradation half-lives in soil and water,

3) adsorption/desorption constants, and

4)bioconcentration factors in fish. For non-agricultural chemicals such as antifoulants and wood preservatives, the availability of the chemicals in water and leaching data are also included.

This information about pesticides can be used for assessing pesticide exposure for ecological risk assessments and drinking water exposure assessments. The database is currently populated with about 188 pesticide active ingredients and will be expanded to include more chemicals in the future. The Pesticide Fate Database andinstructions for using this database can be found at the following address:http://cfpub.epa.gov/pfate/index.cfm .

Fruit Observations and Trap Reports

Site: Waterman Lab, Columbus
Dr. Celeste Welty, OSU Extension Entomologist, and Gretchen Sutton, Graduate Assistant

Apple: 8/18 to 8/24/05
Redbanded leafroller 28 down from 45
Spotted tentiform leafminer 45 up from 34
San José scale 3 down from 4

Codling moth (3 trap mean) 3 down from 5
Lesser appleworm 6 down from 13
Tufted apple budmoth 15 same as last week
Variegated leafroller 0 down from 7
Obliquebanded leafroller 1 down from 3
Apple maggot (sum of 3 traps) 1 up from 0

Site: East District; Erie and Lorain Counties
Jim Mutchler, IPM Scout/Technician

Apple: 8/16 to 8/23/05
Codling mothn(3 trap mean) 2.4 down from 3.3
Oriental fruit moth 4.1 down from 4.9
Redbanded leafroller 10.4 down from 12.4
San Jose scale 20.9 up from 16.3
Lesser appleworm 1.0 down from 5.5
Apple maggot (sum of 3 traps) 2.7 down from 5.1
Beneficials found: lacewings eggs and adults, native lady beetles, brown lacewing adults

Peach: 8/16 to 8/23/05
Redbanded leafroller 7.3 down from 9.7
Oriental fruit moth 1.0 same as last week
Lesser peachtree borer 18.3 down from 18.7
Peachtree borer 3.3 up from 2.7
Beneficials found: lacewing eggs and adults, native ladybeetle

Site: West District: Huron, Ottawa, Richland, and Sandusky Counties
Lowell Kreager, IPM Scout/Technician

Apple: 8/15 to 8/22/05
Codling moth (3 trap mean) 0.2 down from 0.5
Oriental fruit moth 7.0 up from 3.0
Redbanded leafroller 10.1 up from 6.8
San Jose scale 0.0 same as last week
Spotted tentiform leafminer 1374 up from 413
Lesser appleworm 11.8 same as last week
Apple maggot (sum of 3 traps) 0.0 same as last week
Beneficials found: lacewing adults, brown lacewing adults, banded thrips, native ladybeetles, multicolored Asian ladybeetles

Peach: 8/15 to 8/22/05
Redbanded leafroller 8.0 down from 18.0
Oriental fruit moth 3.6 up from 3.0
Lesser peachtree borer 5.5 down from 5.9
Peachtree borer 1.0 down from 0.3

Terminal Market Fruit Prices, August 25, 2005

Chicago http://www.ams.usda.gov/mnreports/HX_FV010.txt

Blueberries: Market steady;
MI med 28.00 some high as 30.00 flats 12 6-oz cups with lids OR med-lge 16.00-18.00 fr qual 12.00

Grapes: Market about steady;
Cartons 12 1-qt baskets MI U.S. One Concord 21.00

Peaches: Market about steady;
25 lb cartons loose IL U.S. ExOne Various Yellow Flesh Varieties 2 1/4"up 14.00-15.00 Various White Flesh Varieties 2 1/2"up 18.00 U.S. One Various Yellow Flesh Varieties 2 1/2"up 18.00 Various White Flesh Varieties 2 1/2"min 18.00 2 1/4"up 16.00

Detroit http://www.ams.usda.gov/mnreports/DU_FV010.txt

Apples: Market about steady;
Cartons tray pack NY U.S. ExFcy Mcintosh 88s 19.00 100s 19.00.
3-lb film bags MI U.S. ExFcy Earligold 2 1/2" min 14.00-14.50 Early Mcintosh 2 1/2" min 14.50-15.00 Paula Red 2 1/2" min 12.00-13.50

Blueberries: Market steady; flats 12 1-pt cups with lids MI med-lge 28.00 some 24.00 med 28.00-30.00 mostly 28.00 fr cond 10.00-12.00

Grapes: Market about steady;
Cartons 12 1-qt baskets NY U.S. One Concord med 23.50-24.50

Peaches: Market steady;
1/2 bushel cartons NJ U.S. ExOne Various Yellow Flesh Varieties 2 3/4"up 14.00-16.00 2 1/2"up 10.00-12.00

Pittsburgh http://www.ams.usda.gov/mnreports/PS_FV010.txt

Apples: Cartons 12 3-lb film bags WV U.S. ExFcy Mcintosh 2 1/2" up 15.50

Blueberries: Flats 12 1/2-pt cups with lids MI med-lge 25.00-27.00

Nectarines: 25 lb cartons loose
NJ U.S. Fcy Various Yellow Flesh Varieties 2 1/2"up 24.00 2 3/4" up 24.0

Peaches: 25 lb cartons loose NJ U.S. ExOne Various Yellow Flesh Varieties 2 3/4"up 14.00-14.50 PA U.S. Fcy Redhaven 2 1/2"min few 14.50. WV U.S. ExOne Redglobe 2 1/2"up 12.00-15.00 Sun Bright 2 1/4"up 9.00