Ohio
Fruit ICM News

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Calendar

May 10: High Tunnel Meeting, Mark Phillips Farm, Clark's Summit, Pennsylvania (eastern PA.) Contact John Esslinger for information at 570-963-6842.

June 28: Ohio Fruit Growers Society Board Meeting, Burnham Orchards, Berlin Heights, OH, 6:30 to 8:00 p.m. Contact Tom Sachs at 614-246-8290 or e-mail Tsachs@ofbf.org or Kathy Lutz at 614-246-8292 or e-mail growohio@ofbf.org.

June 28: Ohio Apple Marketing Program Board Meeting, Burnham Orchards, Berlin Heights, OH, 8:00 to 9:30 p.m. Contact Tom Sachs at 614-246-8290 or e-mail Tsachs@ofbf.org or Kathy Lutz at 614-246-8292 or e-mail growohio@ofbf.org.

June 29: Ohio Fruit Growers Society Summer Tour, Burnham Orchards, Berlin Heights, OH, 8:00 a.m. to 3:00 p.m. Contact Tom Sachs at 614-246-8290 or e-mail Tsachs@ofbf.org or Kathy Lutz at 614-246-8292 or e-mail growohio@ofbf.org.

Congratulations to Mike Ellis

Source: New York Berry News, Vol. 4, No. 1, Tree Fruit & Berry Pathology, NYSAES

Eight research projects have received $32,400 in funding for 2005 by the North American Strawberry Growers Association (NASGA) and the North American Strawberry Growers Research Foundation, Inc. Of the grants awarded, $27,400 came from NASGA and the Foundation, and an additional $5,000 from the California Strawberry Commission. To date, over $500,000 has been awarded to benefit industry-related research.

Projects funded for 2005 and the principal investigators include "Evaluation of Stobilurin Fungicides (Quadris and Cabrio) and Phosphorus Acid for Control of Leather Rot and Vascular Collapse of Strawberry, caused by *Phytophthora cactorum"* - Dr. Michael Ellis and Angel Rebollar-Alviter, Department of Plant Pathology, The Ohio State University/OARDC

Risk of Fungicide Drift from Soybeans to Apples

Source: Bruce Bordelon, Purdue University Commercial Small Fruit Production Specialist, Facts for Fancy Fruit, 05-01 April 15, 2005

With the potential for soybean rust showing up in the region this year, apple growers should be aware that there is potential for drift damage on certain varietiesfrom some of the strobilurin fungicides that may be used on soybeans. In particular, the azoxystrobin products Quadris and Abound are known to cause phytotoxicity to Macintosh-related apples varieties. These products may be used on soybeans. Growers should take time to visit their neighbors and discuss this potential problem.

Strobi Availability

Source: Gregory Shaner, Professor, Botany and Plant Pathology, Purdue Univ., Facts for Fancy Fruit, 4/15/05

Azoxystrobin, sold as Quadris in the field crop market, and trifloxystrobin, a component of Stratego, are both likely to be used against soybean rust should the disease develop this year. If a major epidemic develops, this will put a lot of strain on the fungicide delivery system. Various people have told me that thechemical companies and dealers are not going to forget about their regular customers as they try to take care of all the soybean farmers who may want product. Still, I think fruit growers might want to talk to their dealers about supply, and if pre-ordering is appropriate, maywant to do so. I think the fruit growers probably have a big advantage over soybean growers, in that they have a pretty good idea of how much material they need. Right now, it's all very uncertain for the soybeangrowers, because no one can say whether we will have a rust problem or not, especially in the northern states.

Petting Zoo Sanitation

Source: Peter Hirst, Purdue Univ. Commercial Tree Fruit Production Specialist, Facts for Fancy Fruit, 4/15/05

Cases of E. coli infection following visits to petting zoos or animal exhibits have been widely reported recently. In Florida, at least 22 people, almost all children, fell seriously ill after visiting one of three fairs in the past two months. State health officials are investigating 35 more cases. Last Autumn, 15 childrendeveloped the life-threatening kidney ailment in North Carolina, and a petting zoo exhibit at the state fair in October was determined to be the likely source. In all, 108 people, more than half of them small children, were affected by E. coli traced to the fair, although most hadfar milder symptoms than the 15.

Not that petting zoos are hazardous places for kids, but there is some level of risk. As with any aspect of your farm operation, you should do all you can to be aware of the risks and to reduce and manage the risk. Talk to your local health inspector to make sure you are in compliance with all regulations. The bad publicity and ramifications of a child becoming ill after visiting your petting zoo are pretty obvious, so do all you can to reduce the risk of this occurring.

Corrections in the 2005 Midwest Commercial Small Fruit and Grape Spray Guide

Source: Bruce Bordelon, Purdue University Commercial Small Fruit Production Specialist, Facts for Fancy Fruit, 05-01 April 15, 2005

We have become aware of a few mistakes in the printed version of the 2005 Midwest Commercial Small Fruit and Grape Spray Guide. We make every effort to assure that the updates are correct before wego to press, but occasionally mistakes slip through. This should be a good reminder to every grower that they should read and follow the label directions instead of depending on guides or advice from neighbors or others.

The corrections are:

On page 18 under the section Downy Mildew - the use of Ridomil Gold MZ and Ridomil Copper. We have listed the preharvest interval (PHI) for Ridomil Gold MZ as 42 days when it should have been listed as 66 days. And we listed the PHI for Ridomil Gold Copper as 66 days when it should be 42 days.

On page 50, Table 8 Fungicide Harvest Restrictions and Restricted - Entry Intervals (REI). The preharvest interval (PHI) for mancozeb on grapes is listed as 42 days. This is not correct. The PHI for mancozeb on grapes is still 66 days.

Finally, on page 63 under Sinbar 80 WP, the rate should read 1-2 lb, not 1-22 lb. We regret that these mistakes happened and will do our best to avoidthis in the future. If you find any other mistakes, please let us know.

Another problem that has come to our attention: Some of the copies were not assembled correctly by the printer and may be missing certain pages. If you received a copy that is not complete, let us know and we will send you a replacement.

April Apple Holdings Up 36 Percent from 2004

Source: http:www.fruitgrowersnres.com

Total March movement of fresh and processing apples of 20.5 million bushels was up 18 percent from movement in 2004 and 5 percent above the five-year average for March movement, according to the U.S. Apple Association's (USApple) nationwide survey of apple storage facilities.

The strong movement is attributed to greater supplies of fresh apples and continued strong demand this season. Movement of fresh apples from regular and Controlled Atmosphere (CA) storage of 13.1 million bushels during March was 21 percent higher than the March 2004 movement and 5 percent higher than the five-year average for March movement.

Movement of fresh-market apples from CA storage during March was 12.5 million bushels, 24 percent higher than the same time last year, and up 8 percent from the five-year March average. March movement of processing apples of 7.4 million bushels was 14 percent above 2004 movement and 5 percent higher than the five-year average for March movement.**April 1 U.S. Holdings**

Total U.S. holdings of fresh and processing apples on April 1 were 67.8 million bushels, a 36 percent increase from holdings on April 1, 2004 and 21 percent higher than the five-year average of 56.2 million bushels. April 1 U.S. fresh holdings of 45 million bushels were 41 percent above last year and 22 percent above the five-year average.

Holdings of fresh-market and processing apples in CA storage on April 1 were 61.7 million bushels, a 36 percent increase from April 1, 2004, and 20 percent higher than the five-year average. Fresh CA holdings on April 1 were 37 percent higher than holdings on April 1, 2004, and 18 percent above the five-year average for holdings on that date. Total processing apple holdings as of April 1 were 22.8 million bushels, 27 percent higher than on April 1, 2004, and 19 percent above the five-year average for that date.

Regional Fresh Apple Holdings

On a regional basis, fresh holdings on April 1 in the Northeast were 3.6 million bushels, a 6 percent decrease from holdings on April 1, 2004, but 11 percent higher than the five-year average for that date. Southeast April 1, 2005, fresh holdings were 38 percent lower than on April 1, 2004, and 37 percent below the five-year average for that date.

In the Midwest, April 1 fresh holdings were 1.8 million bushels, down 25 percent as compared to holdings on April 1, 2004, and 10 percent lower than the five-year average. Fresh market apples in storage in the Southwest on April 1 totaled 90,346 bushels, a 402 percent increase compared to that date in 2004. However, Southwest holdings were 21 percent lower than the five-year average. Northwest April 1 fresh holdings were 39.5 million bushels, 55 percent higher than on April 1, 2004, and 25 percent above the five-year average for that date.**Fresh Holdings by Variety**

On a varietal basis, April 1 fresh-market Red Delicious holdings were 18.5 million bushels, a 40 percent increase from that date in 2004, but 1 percent less than the five-year average. Fresh Golden Delicious holdings of 7.2 million bushels were up 61 percent from holdings on April 1, 2004, and 19 percent higher than the five-year average for that date.

Fresh Granny Smith holdings of 5.3 million bushels on April 1 were up 39 percent from holdings on April 1, 2004, and 57 percent above the five-year average for that date. McIntosh holdings on April 1 were 1 million bushels, up 8 percent from holdings on April 1, 2004, and up 37 percent from the five-year average. Fresh Fuji holdings of 5.1 million bushels on April 1 were up 64 percent compared to last year's holdings on that date, and increased 65 percent as compared to the five-year average.

Fresh Gala holdings on April 1 were 2.5 million bushels, up 58 percent from April 1, 2004, levels and 137 percent greater than the five-year average. Fresh Empire holdings were 842,720 million bushels, a 34 percent decrease from April 1, 2004, levels and 17 percent below the five-year average.

Maintaining Drip Irrigation Systems

Source: Dr. William Lamont, Associate Professor of Vegetable Crops, Department of Horticulture, Pennsylvania State University

Drip irrigation systems are becoming more widely used for horticultural crop production, especially vegetable crops. The system must function efficiently during the entire growing season. Failure at a critical point in the crop production cycle can cause loss of the entire crop. System failures are often due to inadequate maintenance of the system especially if fertigation is being utilized to supply nutrients to the plant's root zone. Maintenance of the drip irrigation system does take time and understanding; however, maintenance is critical for successful use of drip irrigation systems. This guide should help one understand how to maintain drip irrigation systems.

Water Quality

Water for drip irrigation can come from wells, ponds, rivers, lakes, municipal water systems, or plastic-lined pits. Water from these various sources will have large differences in quality. Well water and municipal water is generally clean and may require only a screen or disc filter to remove particles. However, no matter how clean the water looks, a water analysis/quality test prior to considering installation of a drip irrigation system should be completed to determine if precipitates or other contaminants are in the water. This water quality analysis should identify inorganic solids such as sand and silt; organic solids such as algae, bacteria, and slime; dissolved solids such as iron, sulfur, and calcium; and pH of the water. Water testing can be done by a number of laboratories in the state. Your local Cooperative Extension Service (CES) County Extension Educator can supply a list of laboratories or suggest a local lab that can do water quality analysis. Check with the lab first to obtain a sample kit containing a sampling bottle that is clean and uncontaminated.

Factor	Plugging Hazard		
	Slight	Moderate	Severe
Physical	In parts per million (ppm) except pH		
Suspended Soils (filterable)	<50	50-100	>100
Chemical			
pH	<7.0	7.0 - 7.5	>7.5
Manganese	<0.1	0.1 - 1.5	>1.5
Iron	<0.1	0.1 - 1.5	>1.5
Hardness	<150	150 - 300	>300
Hydrogen sulfide	<0.5	0.5 - 2.0	>2.0

Table 1: Criteria for Plugging Potential of Drip Irrigation System Water Sources

In addition to these factors, it is desirable to ask for any additional tests that might be necessary. If the water is also to be used as a household supply or might be used as a drinking water source, the analysis should also include the basic drinking water analysis, which includes bacterial counts, nitrates, or other suggested tests. Also salts, Chlorides, Sodium, Calcium (for general irrigated water quality) should be analyzed.

Hydrogen sulfide can often be detected by a bad "rotten egg" smell. If a review of your water test indicates factors that may cause potential plugging (Table 1), then special care in drip system maintenance needs to be practiced. High levels of a factor might not render a well unsuitable for drip irrigation, but will make appropriate water treatment a requirement before successful use in a drip irrigation system.

Any surface water such as streams, ponds, lakes, rivers, or pits will contain bacteria, algae, or other aquatic life. Sand media filters are absolute necessities. **Even though sand media filters will be more expensive than screen or grooved-disk filters, they are highly recommended for water sources that have high levels of suspended organic and inorganic materials.**

Maintenance of the System Filters

Both screen and sand media filters in a drip irrigation system should be checked during or after each operating period and cleaned if necessary. A clogged screen or grooved-disk filter can be cleaned with a stiff bristle brush or by soaking in water. A sand media filter should be back-flushed when pressure gauges located at the inlet and outlet sides indicate a five-psi difference. Check drip irrigation lines for excessive leaking and look for large wet areas in the planting area, indicating a leaking tube or defective emitter. It is also a good practice to flush submains and laterals periodically to remove sediments that could clog emitters. Systems can be designed with automatic back flushing devices and automatic end line flushing
devices, but still require manual checks.

Chemical Control Measures

Unfortunately, filtration alone is not always adequate to solve all water quality problems. Chemicals are necessary to control algae, iron and sulfur bacteria, and disease organisms. Chemicals can cause some materials to settle out or precipitate out of the water while causing other materials to maintain solubility or stay dissolved in the water. Chlorine is a
primary chemical used to kill microbial activity, to decompose organic materials, and to oxidize soluble minerals causing them to precipitate out of solution. Acid treatments are used to lower the water pH to either maintain solubility or to dissolve manganese, iron, and calcium precipitates that clog emitters or orifices. Potassium permanganate is also used to oxidize iron under some conditions. It is recommended to install the filtration system after the chemical treatment to remove any particles formed. Chemigation protection and injection equipment requirements vary with toxicity class of the injected chemicals.

Chlorination

The common practice of chlorination is the addition of chlorine to purify drinking water supplies. Chlorine acts as a powerful oxidizing agent in water, and vigorously attacks organic materials. Free available chlorine also reacts strongly with readily oxidizable substances such as iron, manganese, and hydrogen sulfide. To be effective, a residual of active chlorine in parts per million of available chlorine should be measurable near the end of the lateral lines of the irrigation system.

The amount of chlorine added to the system will be the residual desired plus the amount needed by the water to oxidize the materials present. This amount can vary considerably over a season. Contact time between chlorine and the water should be maximized to get the most benefit.

Table 2: Common chlorine compounds used in micro-irrigation

Compound	Form	% Available
Calcium hypochlorite	dry	65-70
Sodium hypochlorite	liquid	5.26-15
Chlorine gas	gas	100

The gas and liquid forms of chlorine are more commonly used (Table 2). Common household bleach, 5.25% sodium hypochlorite, is used in many small operations. Chlorine gas is more dangerous (very poisonous and very corrosive). A commercial dealer should install the gas-metering device called a chlorinator and train the operators. Chlorine gas is heavier than air, so adequate ventilation is recommended.

The pH of the water greatly affects the effectiveness of chlorination. Acidic water causes greater availability of hypochlorous acid (HOC), which has an efficiency for killing microorganisms that is 40 to 80 times greater than that of hypochlorite (OC-). When chlorine is dissolved in water, HOC and OC-, which together are referred to as "free available chlorine," co-exist in an equilibrium relationship influenced by temperature and pH.

A general formula for calculating the amount of chlorine to inject in liquid form (sodium hypochlorite, NaOC) is: IR = Q x C x 0.006/S where:

IR = Chlorine injection rate (gal/hour)

Q = Irrigation system flow rate (gal/min)

C = Desired chlorine concentration (ppm)

S = Strength of NaOC solution used (percent)

Example: A grower wishes to use household bleach (NaOC at 5.25% active chlorine) to achieve a 3 ppm chlorine level at the injection point. The flow rate of his irrigation system is 90 gpm. At what rate should he inject the NaOC?

IR = 90 gpm x 3 ppm x 0.006/5.25
= 0.31 gallon per hour

At an irrigation flow rate of 90 gpm, the grower is pumping (90 x 60) 5400 gph. The goal is to inject 0.31 gallon of bleach into 5400 gallons of water each hour that injection occurs. If the injector is set for a 300:1 ratio, it will inject 5400/300 or 18 gallons per hour. Then, 0.31 gallon of bleach should be to 18 gallons of water in the stock solution.

Note: Be careful to use the same time units (hours) when calculating the injection rate.

Commercial Drip Maintenance Treatment Solutions

Several commercial solutions are available that contain a mixture of ingredients to deal with pH, iron, and hardness water problems. These commercial products come with instructions on dilution concentrations for daily maintenance or "shock" treatment to unclog plugged lines. For small producers getting started with drip irrigation, these commercial products should be considered as a water treatment.

(Reprinted with permission from: *The Vegetable and Small Fruit Gazette*, Vol 9 No 4, April 2005) New York Berry News, Vol. 4, No. 1, Tree Fruit & Berry Pathology, NYSAES

A Case Study: Japan and Apples

Source: Farm Bureau News, April 4, 2005, Volume 84, No. 7, <http://www.fb.og.fbn/>

A World Trade Organization ruling concerning U.S. exports of apples to Japan illustrates how the WTO dispute process works. The dispute began when the United States said that Japan's import restrictions on U.S. apples, in place since 1994, were not based on any scientific evidence. Japan banned imports of apples from orchards at or near where fire blight, a bacterial disease, has been detected. However, the United States pointed to several year's worth of evidence that mature fruit does not transmit the disease. The import restriction resulted in nearly cutting off U.S. apple exports to Japan.

After a decade of attempts to negotiate a solution, the United States in March 2002 requested WTO dispute settlement consultations. Consultations were unsuccessful, so a dispute panel was established in June 2002. The panel examined statements from Japan and the United States and other evidence, and reported that Japan's import restrictions were not based on science and therefore, they were not consistent with Japan's obligations under the WTO agreements. Japan appealed the ruling on Aug. 28 of that year, but the WTO Appellate Body on December 1 upheld the earlier ruling. In January 2004, the United States and Japan met to agree on the "reasonable period of time" for Japan to implement the ruling by changing its import restrictions. Both countries agreed that Japan should make its import rules consistent with WTO commitments by June 30, 2004.

The Office of the U.S. Trade Representative announced in July 2004 that Japan had not complied with the earlier ruling and that the United States would ask a WTO panel to review Japan's compliance. It also said the United States would seek authorization to impose additional tariffs of $143.4 million on Japanese exports, as compensation for Japan's continued non-science-based import restrictions. The WTO dispute panel on March 10, 2005, issued a preliminary ruling that Japan had not complied with the earlier ruling. The panel's final ruling is expected this May. Then, 60 days later, the WTO will decide whether the United States can impose the retaliatory tariffs

Illegal Use of Sodium Cyanide

Source: Joanne Kick-Raack, OSU Pesticide Applicator Training Coordinator

The United States Environmental Agency (EPA) and state departments of agriculture have recently been alerted that some beekeepers have been using sodium cyanide compound to control pests in their honey bee colonies/hives. Specifically, apiarists have been purchasing and using sodium cyanide compound as a fumigant in beehives to destroy or mitigate wax moths, including the caterpillar and larvae, as well as cull out weaker bees. (Wax moth includes both the Greater Wax Moth, *Galleria mellonella,* and the Lesser Wax Moth, *Achroia grisella,* both of which are sometimes referred to as the wax wing moth.) These practices are illegal and have the potential for serious harm to human health and the environment.

All pesticides distributed in the United States must be registered by the EPA. The Federal pesticide law [the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) defines a pesticide to include any substance intended for controlling, mitigating or destroying pests. A substance is a pesticide and requires registration as such if the person distributing the substance (1) makes claims, either expressed or implied, that the substance can be used as a pesticide or (2) distributes the substance with the knowledge that the substance will be used to control pests.

Any individual selling or distributing sodium cyanide compound for mitigating any pests, including the wax moth, caterpillar and larvae, or any other pest for use in bee hives or colonies is selling and distributing an unregistered pesticide and subject to penalties of up to $6,500 per violation under FIFRA.

Currently, there are no sodium cyanide or similar sodium cyanide compound products registered by the EPA for pest control in honey bee colonies/hives. Also, there are no established residue tolerances for ant cyanide compound in honey or beeswax. Honey analyzed and found to contain any cyanide compound residue would be considered adulterated under the Federal Food, Drug and Cosmetic Act, and could be seized. The seizure of honey due to alteration with a highly toxic chemical would be detrimental to the entire apiary industry.

Further, use of sodium cyanide in an apiary setting can be extremely dangerous. The compound is highly toxic to humans and other warm-blooded animals, and it is a Toxicity Category I compound - EPA's highest toxicity level for pesticides. This rating indicates the greatest degree of acute toxicity for oral, dermal, and inhalation effects. It is highly corrosive to the skin and eyes. Cyanide can be absorbed through the skin and its vapor is absorbed extremely rapidly via the respiratory tract.

Beekeepers who are currently in possession of the highly toxic, unregistered sodium cyanide compound or related products should contact their state agricultural agency for information on proper storage and disposal of the product.

The phone number for the Ohio Department of Agriculture is 1-800-282-1955. The state agricultural agency can also provide information on registered pesticides, such as paradichlorobenzene and aluminum phosphide products, that are legal to use to mitigate pests in honey bee colonies/hives.

Fruit Observations and Trap Reports

Site: Waterman Lab, Columbus
Dr. Celeste Welty, OSU Extension Entomologist

Apple: 4/13 to 4/20/05 Early bloom on 4/20		
Redbanded leafroller	36	down from 96
Spotted tentiform leafminer	200	down from 790
San José scale	3	(first report)

Site: Medina, Wayne, and Holmes Counties
Ron Becker, IPM Program Assistant
Southern Wayne and Holmes Counties (4/14)STLM - 360 (Average of 5 traps)Northern Wayne and Medina Counties (4/19)STLM - 450 (Average of 4 traps)

Results from the STLM traps tends to be inconsistent, with a trap in one block having counts as high as 1000 and the block next to it having 0-50. Most apples are in the tight cluster to pink stage. Peaches are starting to bloom. Redskin seemed to come through the winter without losing too many buds.

Other Ohio Observations:
Ted Gastier, Huron County Extension Educator

What a difference a week makes! From a deficit in Degree Day accumulations (particularly in the North) last week to normal and above numbers this week.

A reminder to those of you using a WeatherTracker for scab prediction. The best use of the instrument for early season is to support your scab management decisions based on your own experience in your own orchards. It should not replace the knowledge you have gained through the years.

Peach producers are mostly cautiously optimistic about crop prospects. However, we continue to receive scattered reports of extensive bud damage, so we will know more in several weeks.

Pest Phenology

Coming Events	**Degree Day Accum.** Base 50°F
Redbanded leaf roller 1st catch	32 - 124
Tarnished plant bug active	34 - 299
Green apple aphid present	38 - 134
Spotted tentiform leafminer 1st catch	39 - 113
Oriental fruit moth 1st adult catch	44 - 338
Rosy apple aphid nymphs present - 1st egg hatch	56 - 116
Pear psylla 1st egg hatch	60 - 166
Obliquebanded leafroller larvae active	64 - 160

Revised thanks to *Scaffolds Fruit Journal* (Art Agnello)

Degree Day Accumulations for Ohio Sites

April 20, 2005

Ohio Location	**Degree Day Accumulations Base 50°**	
	Actual	**Normal**
Akron-Canton	105	93
Cincinnati	239	183
Cleveland	90	88
Columbus	197	127
Dayton	171	128
Kingsville	63	54
Mansfield	103	91
Norwalk	84	79
Piketon	214	200
Toledo	90	74
Wooster	111	80
Youngstown	88	80