



Newsletter

Extension

Fruit ICM News

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Calendar

July 6-8: International Dwarf Fruit Tree Association Summer Tour, Kelowna, BC, Canada; Charles Ax, International Dwarf Fruit Tree Association; 570-837-1551; Web site: <http://www.idfta.org>.

August 4-5: HACCP Workshop, Leesport, PA. A Hazard Analysis Critical Control Point (HACCP) workshop will take place at the Berks County Ag Center in Leesport, PA. For more information please contact Dr. Luke LaBorde, Penn State University, at 814-863-2298 or e-mail at llf15@psu.edu.

Effect of Rain on Fungicide Wash-Off

Source: Bruce Bordelon, Purdue Horticulture, Facts for Fancy Fruit FFF03-07

I've had several calls this year (and in years past) from growers wanting to know what they should do about spraying their grapes with all the rain we've had lately. They can't spray "because it's always raining" is the common complaint. That reminded me that we ran an article about this time last year written by Jim Travis, Plant Pathologist at Penn State. Jim noted that if you are using protectant fungicides, you need to consider the effect of rain on wash-off of the materials.

The strobilurin (Abound, Sovran, Flint) and sterol inhibitor (Nova, Procure, Rubigan) fungicides are absorbed into the leaf and fruit tissue after application (once the residue has dried) and are not affected by rain wash-off. The protectant (Dithane, Manzate, Penncozeb, Captan, Ziram, Thiram, Polyram) fungicide residues can be affected by rain. A general rule-of-thumb for the effect of rain on washing-off protectant

fungicides follows:

- Less than one inch of rain since the last spray will not significantly affect residues.
- One to two inches of rain will reduce the residue by one half. Reduce the number of days until the next spray by one half.
- Over two inches of rain since the last spray will remove most of the spray residue. Renew the fungicide deposit as soon as possible.

So, during all this rainy weather, growers have a couple of options. They can use the new strobilurins or sterol inhibitors and time sprays so that residues dry on the plants before the next rain event, or they can continue to use protectants and monitor rainfall to determine appropriate timing of the next spray. NOT spraying because of frequent rainfall is not an option unless you want to have a major disease outbreak. We are still in the critical period for control of black rot. The first two post-bloom sprays are critical. So don't let a little rain stop you from getting your job done!

OFGS Summer Tour a Success

Source: Tom Sachs, Executive Director, Ohio Vegetable and Potato Growers Association (OVPGA) & Ohio Fruit Growers Society (OFGS)

Fruit growers' expectations were as high as the temperature for the 2003 Ohio Fruit Growers Society Summer Tour at Glen Hill Orchards in Mount Vernon, Ohio. The June 25th tour was a resounding success, as over 300 enthusiasts toured the immaculate farmstead and orchard. Hosts Maureen Buchwald and Rich Ridenbaugh showcased their 106 acres of apples and peaches, while over 30 exhibitors and sponsors interacted with their customers and growers swapped ideas on fruit production.

Orchard tours were the main focus as Maureen explained business history and operations, labor management practices, and marketing philosophy. She recounted orchard renovations since 1976 and proudly displayed their modern, refrigerated and controlled atmosphere apple storage facilities and modern migrant labor housing. Additionally, Rich explained numerous cultural practices that allow for annual production of 65,000 apple and 2,800 peach bushels. A small sample of Rich's handiwork was a 2001 planting of Scarlet Spur and Gibson Golds, a 2002 planting of Honeycrisp and Gala, and a 2003 planting of Gale Gala and Pioneer Macs.

A further tour stop showed an Imidan demonstration project conducted by Ohio State University (OSU) Entomologist, Celeste Welty. This trial had been established to compare control of codling moth and plum curculio with the grower's standard program of mid-level rate of Imidan plus Avaunt and a high rate of Imidan. According to Celeste, Glen Hill is not experiencing codling moth control problems, but data on insecticide efficacy is needed.

Additionally, Dave Gress of Fruit Growers Marketing Association instructed growers about the wholesale apple market and described his positive perspective on an excellent 2003 Ohio apple crop in quality and quantity.

The final tour stop consisted of a demonstration of Good Agricultural Practices and Good Handling Practices by Shari Plimpton of the Center for Innovative Food Technology. Shari is a food safety educator with the Ohio Specialty Crop Food Safety Initiative.

Many growers who are subject to the Ohio Apple Marketing Program's (OAMP) market assessment had the opportunity for free apple promotional materials that had recently been developed with funds from

USDA's Specialty Crop Block Grant Program. An Apple Promotion Display Box with new UPDATED Ohio Apple Variety Charts and an aluminum Apple Promotion Display Sign was their reward for attending the Summer Tour. Betty Eshelman, OAMP chairperson eagerly dispensed signs to qualifying participants, while also selling many other Point of Purchase materials to apple marketers.

The Ohio State University Fruit Team was one of the many exhibitors and allowed for great interaction between growers and OSU resource personnel. Another OSU resource person was John Ellerman, who promoted the Direct Agricultural Marketing Association's new marketing website:

<http://www.farptomarkets.com>. This website is in addition to the OFGS farm market resource: <http://www.ohiofruit.org>. Both sites are designed to efficiently connect consumers with farm markets.

The final activity was a program directed by OFGS President George Lawrence. George introduced many of the tour VIPs (including 15 representatives of Ohio State University Extension) and media representatives, conducted a door prize contest, and recognized hosts Maureen Buchwald and Rich Ridenbaugh, sponsors, and exhibitors. Chris Parsons of the Johnny Appleseed Heritage Center (JAHC) gave a brief report on the JAHC grand opening in June 2004. George also announced that the 2004 Summer Tour will be at the Ohio Agricultural Research and Development Center in Wooster on June 30. This concluded the 2003 Summer Tour and fulfilled participants expectations as high as the 90 degree temperatures.

Mite Control Update

Source: Fruit Times, June 17, 2003, Vol. 22, No. 9

Despite the relatively "unfriendly" weather patterns for mite development thus far this season, we have found an increased number of motile forms and eggs during last week's observations. In most cases mite numbers are still below the threshold, but with the possibility of warmer weather in the forecast, it is critical that growers pay close attention to this pest at this time of the season.

Since the distribution of mite populations in the orchard are usually very patchy at this time of the year, it is important to examine as many trees as possible for mite presence. Also, select cultivars that are most sensitive to mite population increases (e.g., Delicious, Yorking, etc.) If beneficial organisms are present, but at a level too low to provide adequate mite control, alternate row middle (ARM) applications of effective acaricides may be applied. If mite populations are high (>5-10 mites/leaf) and few or no predators are present, a complete spray of a miticide may be necessary. The action thresholds on page 95 of Penn State's Tree Fruit Production Guide (available on the web at:

<http://tfg.cas.psu.edu/part2/part22bl.htm>) are especially useful, since both Acramite and Pyramite can quickly bring mite populations down.

To properly assess miticide efficacy, an evaluation should be made 7-10 days after any miticide application to determine if any follow up applications are necessary. Growers should refrain from using more than one full Acramite or Pyramite application per season. The other, older summer miticides, such as Kelthane, Vendex, or Vydate, may still continue to work well in some orchards depending on previous usage patterns and resistance. Also, the two mite ovicides: Apollo (45 day PHI on apples and 21 day PHI on pears, apricots, cherries, peaches and nectarines) and Savey (28 days PHI on apples, pears and stone fruit) are registered for mite control during the summer. However, these latter two miticides work better on low mite populations. Similarly, summer oils (i.e., Stylet oil, Mite e-Oil, Bio-Cover) applied as complete sprays can also provide satisfactory mite control. If oils are used in your tree fruit spray program, please read the labels to comply with the mixing and weather warnings.

In some orchards, especially where a light crop is expected, it may be a good season to try to re-establish populations of the natural mite predators such as the Stethorus beetle or phytoseiid predatory mites. The predators will not establish themselves in orchards where mites (i.e., their food) are not present, thus the acceptance of some mites on foliage may actually help to increase the number of beneficial organisms and expedite the potential for biological mite control.

A Banner Year for Apple Summer Diseases

Source: Paul Pecknold, Purdue Plant Pathologist, Facts for Fancy Fruit, FFF03-07

Black rot, white rot, bitter rot, sooty blotch, and flyspeck will all be on the increase as we progress into the summer months. With all the rain we've had it could be a banner year for apple rot and smut diseases, as we (plant pathologists) so affectionately call them. Since I can no longer remember which fungicides are most effective for the summer rots, I turn to page 32 of the *2003 Commercial Tree Fruit Spray Guide* to check out the table on effectiveness of fungicides against apple diseases.

I first note that the SI fungicides (Nova, Rubigan, Procure and Bayleton) are pretty much worthless for control of most summer rot diseases. On the other hand, mancozeb and Polyram are excellent for control of summer diseases, however they can only be applied up to 77 days of harvest. After the 77-day to harvest restriction has passed, captan and ziram remain our best options for summer cover sprays; they should be used at the full-labeled rate and on a tight schedule if cool, wet summer weather prevails.

We also suggest tank mixing with Topsin-M or Benlate if it turns into a "sooty blotch/fly speck year"; however, Benlate and Topsin-M should be used sparingly (no more than once a month) to avoid harm to predator mites and lessen the possibility of the development of resistance. NOTE: Benlate, and to a lesser extent Topsin-M, are reported to cause "scarf skin" if used within 40 days of petal fall. Scarf skin is a physiological condition in which the fruit surface develops a milky white or grayish appearance. Scarf skin has no effect on fruit quality or storage ability, but impairs the appearance and shine on a red apple. Added help in control of sooty blotch and flyspeck is now available with the strobilurin fungicides, Flint and Sovran. See the following article on Sovran & Flint for details.

Infection from summer diseases, especially sooty blotch and flyspeck, can be further reduced through IPM strategies that lower humidity and promote rapid drying. These include keeping grass mowed during summer and keeping trees well pruned. Tree spacing within and between rows should allow air movement between all trees. Removing adjacent woods or cutting breaks in hedgerows will also help improve airflow in the orchard. Of course it goes without saying (so I'll say it) that all the above suggestions are pretty much a waste of time if good sanitation measures are not strictly followed.

Sovran & Flint for Control of Sooty Blotch & Flyspeck

Source: Paul Pecknold, Purdue Plant Pathologist, Facts for Fancy Fruit, FFF03-07

As mentioned above, we now have added help in control of sooty blotch and flyspeck with the strobilurin fungicides, Sovran and Flint. In the past we have suggested a 1st, 3rd, and 7th cover spray program using Sovran or Flint. This program is based on our research in which Sovran was applied at the maximum rate of 1.6 oz per 100 gallons to Golden Delicious at first cover (May 11th), third cover (June 9th), and seventh cover (August 3rd). The 1-3-7 program provided excellent control of both fruit scab and sooty blotch and flyspeck under extremely high disease pressure for all diseases. The 3rd and 7th cover sprays were especially critical in control of sooty blotch and flyspeck.

Just so there is no confusion, this program is IN ADDITION TO your regular summer fungicide cover sprays. We simply are suggesting you substitute Sovran or Flint for those fungicides you generally use in the 1st, 3rd and 7th covers. Also, a reminder: WE STRONGLY suggest no more than three sprays of the strobilurins per year, and, as the label states, "Do not apply as the final spray of the season."

Apple Crop Load Management

Source: John Gardner, Apple Specialist, Ontario "Hort Matters" Volume 3, Issue 12, June 11, 2003

Crop load management and thinning of apples will influence orchard profitability more than any one of/ or combination of other cultural factors. The two primary reasons to thin an apple set is for return bloom the following year and to influence fruit quality during the current year. Other factors that become crystal clear in the apple orchard, as the season progresses through to harvest, include cost control factors.

Handling an evenly-spaced, well-sized crop of singulated fruit that results from a good thinning job is the objective. Handling a crop of small apples with 1, 2, or 3 apples to a spur at harvest can be very costly. An unthinned crop of apples will normally take 3,000-3,500 apples to fill a bin. A producer can fill a bin with around 2,000-2,500 apples if the block has been well thinned. Although the number of bins coming out of a thinned block and an unthinned block may not vary much, the value of the fruit in those bins from the two treatments will vary considerably.

A carefully planned and successful thinning treatment does not significantly change crop volume. What you are doing is changing size classes up 2-3 count sizes. Most of the crop should be in that ideal 100 fruit per bushel count size range. A certain percentage of apples will be larger and a certain percentage will be smaller. Overall, you end up with fewer apples in larger size classes filling the same volume of space as a crop of smaller fruit. The larger fruit normally command a higher return on the market. The small apples may or may not be worth more than the price of juice apples.

The last two years have been tough years for judging outcomes in the orchard and in the marketplace. Factors including frost influences, moisture deficits, and lack of seed count in set fruit made management decisions tough. Most of Ontario's apple acreage this year has come back with plenty of bloom, and adequate pollination conditions have existed for the most part.

Steady rains in the second half of May have influenced pollen movement in some apple blocks that were in bloom. Aggressive thinning strategies on tough to thin cultivars are necessary where a decent pollination has occurred. This may include using more than one application of thinners and using a combination of materials. Even with a good degree of success using a spray thinning program, many cultivars will respond best with a follow up hand thin to further reduce crop load.

It is rare to get more than 80% of the set bloom off the tree with spray thinning on difficult cultivars. Even though most blocks don't set close to 100%, set on cultivars like Fuji and some of the Golden Delicious types can be reduced to only every second king remaining. This usually means thinning at a 90% rate and even higher. This includes all the side bloom fruitlets, plus every second king. How do you know when you've taken enough off?

Most growers have at one time or another "sprayed" the crop off the trees of a certain cultivar in a certain block. This usually results in good judgment for successive years. Bad experiences tend to make good judges out of most. It is becoming more difficult to incorrectly assess a cultivar or block when a systematic approach is taken in judging tree strength. Factors influencing tree strength and probability of response to thinners and to different timings have been relatively well documented as of late, not only

here in Ontario but throughout the Great Lakes Region in general.

June is a bad time to judge what a tree canopy holds for crop just by eyeballing it. With everything being the same color, fruitlets can hide. Many times I have seen what looks like nothing remaining in the canopy only to be fooled at harvest with a very good crop of well-sized and highly colored fruit.

Ideally, you want to get down to final fruit load early in the season to influence return bloom the following year. This is normally done with well timed early thinning treatments. We have found that fruitlets will respond to thinners at greater diameters than once thought. The 8-10 mm timing is the standard to aim for on a number of varieties. We've had years when we could not get at the trees because of foul weather and found that we could get adequate thinning at diameters up to 12-14mm kings on some cultivars. One of the factors to a successful response by apple is warm weather following application of thinners.

Checking for Oriental Fruit Moth Damage in Apples and Peaches

Source: Hannah Fraser, Entomology Program Lead-Horticultural Crops, Ontario HortMatters, Volume 3, Issue 13, June 18, 2003

For those interested in evaluating the effectiveness of their management programs directed at first generation oriental fruit moth (OFM), assessments should probably begin this week. First generation OFM larvae attack terminals in both apple and peach (terminal "strikes"); they will also move into developing fruitlets in apples (rarely in peach). A single larva may infest several terminals prior to completing its development.

Damage to shoots in peaches is readily observed as terminal "flagging" ([Figure 1](#)). The damage can be confused with brown rot and canker, so be sure to cut open any suspect terminals and look for the presence of both larvae and frass (insect excrement). In apple, terminals do not show obvious flagging ([Figure 2](#)); close examination is required ([Figure 3](#)). A larva may or may not be present within the terminal ([Figure 4](#)).

Damage is often higher in border areas. Do not bias your counts toward "hot spots" in the orchard. In peaches, assessments should include examination of 100 terminals per tree, from 2.5% or 5 trees per acre. Count the number of terminal strikes. Walk-throughs are often useful in establishing "hot spots" within the orchard. There is no well-established protocol for apple; however, we recommend examining 50 terminals and 50 fruitlets per tree, at a rate of 5 trees per acre (standard block). The goal is to obtain a representative sampling of damage in the orchard block(s). Preliminary data indicates varietal preferences by OFM in apple.

Damage in excess of 1-2% following first generation may indicate potential failure of the program (poor efficacy, problems with timing, resistance, other). It is important to note, however, that first generation strikes are really only providing an indication that some OFM infestation of the crop has occurred - essentially they are an early warning and not a good indicator of future damage levels. To reduce damage to the fruit by subsequent generations, carefully review pest management programs with a qualified crop consultant.

Degree Day Accumulations for Ohio Sites June 25, 2003

Degree Day Accumulations

Ohio Location	Base 45° F		Base 50° F	
	Actual	Normal	Actual	Normal
Akron/Canton	1200	1256	776	876
Cincinnati	1545	1722	1082	1253
Cleveland	1190	1208	787	842
Columbus	1480	1445	1026	1030
Dayton	1407	1484	963	1068
Kingsville	969	1097	601	759
Mansfield	1124	1235	708	861
Norwalk	1146	1205	744	845
Piketon	1631	1711	1135	1234
Toledo	1135	1195	734	838
Wooster	1295	1172	860	805
Youngstown	1059	1137	654	779

Pest Phenology

Coming Event	Degree Day Accum. Base 50° F
Lesser peachtree borer flight peak	392 - 1526
Lesser appleworm 1 st flight subsides	449 - 999
Apple maggot 1 st catch	629 - 1297
Redbanded leafroller 2 nd flight begins	656 - 1381
Codling moth 1 st flight subsides	673 - 1412
Spotted tentiform leafminer 2 nd flight peak	701 - 1355
Oriental fruit moth 2 nd flight begins	772 - 1215
Codling moth 2 nd flight begins	864 - 1549
San Jose scale 2 nd flight begins	893 - 1407

Fruit Observations & Trap Reports

Insect Key

AM: apple maggot
CM: codling moth
ESBM: eye-spotted budmoth
LAW: lesser apple worm
LPTB: lesser peachtree borer
OBLR: obliquebanded leafroller
OFM: oriental fruit moth
PTB: peachtree borer
RBLR: redbanded leafroller
SJS: San Jose scale
STLM: spotted tentiform leafminer
TABM: tufted apple budmoth
VLR: variegated leafroller

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

Apple: 6/18 to 6/25/03

AM: 0.0 (down from 0.3)
CM: 17.0 (down from 19.7)
ESBM: 0 (same as last week)
LAW: 8 (down from 29)
OBLR: 1 (same as last week)
RBLR: 24 (up from 18)
SJS: 0 (same as last week)
STLM: 166 (down from 173)
TABM: 0 (down from 6)
VLR: 0 (down from 2)

Peach: 6/18 to 6/25/03

OFM: 0 (same as last week)
LPTB: 3 (same as last week)
PTB: 6 (up from 1)

Site: Medina, Wayne, & Holmes Counties

Ron Becker, IPM Program Assistant

Apple: 6/18 to 6/25/03

STLM: Holmes: 1790 (down from
2147)
Medina: 1365 (up from
1105)
Wayne: 240 (down from
424)

RBLR: Holmes: 16.7 (up from 0)
Medina: 6.5 (up from 0)
Wayne: 10.7 (up from 0)
CM: Holmes: 2.6 (down from 4.1)
Medina: 0.6 (down from 1.7)
Wayne: 27.0 (down from 41.9)

Peach: 6/18 to 6/25/03

LPTB: Holmes: 15 (up from 10)
Medina: 0 (down from 3)
Wayne: 0 (down from 5)
OFM: Holmes: 0 (down from 3)
Medina: 0.5 (up from 0)
Wayne: 0 (same as last week)
PTB: Holmes: 0 (same as last week)
Medina: 0 (same as last week)
Wayne: 0 (same as last week)

Site: East District: Erie & Lorain Counties

Jim Mutchler, IPM Scout

Apple: 6/17 to 6/24/03

CM: 7.9 (down from 10.1)
LAW: 28.3 (down from 47.8)
OFM: 1.9 (down from 4.3)
RBLR: 0.4 (up from 0.0)
SJS: 0.0 (same as last week)
STLM: 581 (up from 10.7)

Peach: 6/17 to 6/24/03

LPTB: 20.0 (down from 21.7)
OFM: 1.0 (down from 2.7)
PTB: 2.3 (up from 1.0)
RBLR: 0.3 (up from 0.0)

Other pests: green apple aphid, rosy apple aphid Beneficials: green lacewing, ladybeetle, white maggot, and orange maggot

Site: West District: Huron, Ottawa, Richland, & Sandusky Counties - Gene Horner, IPM Scout

Apple: 6/17 to 6/24/03

CM: 2.2 (down from 4.9)
LAW: 0.6 (down from 2.0)
OFM: 0.4 (up from 0.3)
RBLR: 1.5 (up from 0.0)
SJS: 0.0 (same as last week)
STLM: 575 (up from 0.6)

Peach: 6/17 to 6/24/03

LPTB: 6.0 (up from 5.6)
OFM: 0.8 (down from 0.9)
PTB: 0.8 (up from 0.4)
RBLR: 7.2 (up from 0.0)

Other pests: TSSM, RBLR damage

Beneficials: banded thrips, lacewing, predatory mite

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