



# Newsletter Extension

Volume 3, No. 14  
April 29, 1999

## In This Issue:

[Calendar](#)

[New Honey Bee Pest:](#)

[Small Hive Beetle](#)

[Critical Temps for Various Fruits](#)

[FQPA Update](#)

[Cedar Apple Rust](#)

[Northern Ohio Scab Watch](#)

[Fruit Observations](#)

[Degree Day Accumulations/Phenology](#)

## Calendar

**June 30: 1999 Ohio Fruit Growers Society Annual Summer Tour**, Eshleman Orchards, Clyde, OH.  
Watch for more details.

**July 21 & 22: Small Fruit Production/Marketing Tour**, Wooster/Mt. Hope area. Specific topics and tour locations will be announced in the next few weeks.

## New Honey Bee Pest: Small Hive Beetle

*Source: Jim Tew, State Specialist, Beekeeping, Dept. of Entomology, OARDC, Wooster*

A new pest of honey bee, the Small Hive Beetle *Aethina tumida* (Murray), has been found in Ohio *only* in package bees from one South Carolina supplier. About 140 pounds of bees were shipped to the Franklin County area and were distributed widely from there. Beetle specimens have been collected and sent to various labs for identification. At this point, there is the hope that the 47 packages can be contained and the introduction controlled.

We know very little about the potential success of the beetles in a climate such as the temperate climate in Ohio. The beetles are tropical in nature and may not be able to survive Ohio winters. The adult beetle and its larvae are very destructive, eat bee brood and honey, and make a slimy mess out of the hive. Bees frequently abscond. Beekeepers should be alert for beetles in hives, but be aware that many non-harmful beetles are found in hives nearly year-round. All beetles are not bad beetles. ODA officials have just received permission to use Coumophos under a Section 18 EPA label to control this South African beetle.

Presently, the beetle has been found in Florida, Georgia, South Carolina, and North Carolina. At this point, little is known about the future seriousness of this beetle. States not infected with the beetle can elect to exclude bees from infected states; therefore, migratory beekeepers who bring bees into and out of Ohio may have to check with receiving states to determine what regulations are in place. At this point, very little more is known. This beetle may or may not prove to be a pest of Ohio honey bees. If you use out-of-state colonies for pollination, be sure to coordinate with the honey bee provider.

Dr. Tew will be composing an OSUE fact sheet as soon as possible. Information sources are included below:

Tew.1@osu.edu

[http://www.apicultura.com/articles/new\\_bee\\_pest.htm](http://www.apicultura.com/articles/new_bee_pest.htm)

<http://www.ento.vt.edu/~fell/apiculture/hivebeetle/>

<http://www.mannlakeltd.com/cuma.html>

<http://www2.oardc.ohio-state.edu/agnic/bee/>

<http://www2.oardc.ohio-state.edu/beelab/>

## Critical Temperatures for Various Fruits

*Source: Pennsylvania Tree Fruit Production Guide*

The temperature at which fruit buds are injured depends primarily on their stage of development. As flowers begin to swell and expand into blossoms, they become less resistant to freeze injury.

Not all blossoms on a tree are equally tender. Resistance to freeze injury varies within trees as it does between orchards, cultivars, and crops. Buds that develop slowly tend to be more resistant. As a result, some buds are usually killed at higher temperatures, while others are resistant at much lower temperatures. The following shows the average temperatures required to kill 10 percent and 90 percent of buds. Consideration should also be given to weather conditions preceding cold nights. Prolonged cool weather tends to increase bud hardiness during the early stages of bud development.

### Apples (Red Delicious)

Stage of Development	10% Kill Degrees F.	90% Kill Degrees F.
Silver tip	15	2
Green tip	18	10
1/2 inch green	23	15
Tight cluster	27	21
First pink	28	24

Full pink	28	25
First bloom	28	25
Full bloom	28	25
Post bloom	28	25

Golden Delicious and Winesap are approximately 1 degree hardier. Rome Beauty is 2 degrees hardier, except after petal fall, when all cultivars are equally tender.

### Peaches

Stage of Development	10% Kill Degrees F.	90% Kill Degrees F.
First swelling	18	1
Calyx green	21	5
Calyx red	23	9
First pink	25	15
First bloom	26	21
Full bloom	27	24
Post bloom	28	25

### Pears

Stage of Development	10% Kill Degrees F.	90% Kill Degrees F.
Scales separating	15	0
Blossom buds exposed	20	6
Tight cluster	24	15
First white	25	19
Full white	26	22
First bloom	27	23
Full bloom	28	24
Post bloom	28	24

D'Anjou is similar, but may bloom earlier and therefore may be more tender than Bartlett at the same date.

## Sweet Cherries

Stage of Development	10% Kill Degrees F.	90% Kill Degrees F.
First swelling	17	5
Side green	22	9
Green tip	25	14
Tight cluster	26	17
Open cluster	27	21
First white	27	24
First bloom	28	25
Full bloom	28	25
Post bloom	28	25

## Apricots

Stage of Development	10% Kill Degrees F.	90% Kill Degrees F.
First swelling	15	-
Tip separates	20	0
Red calyx	22	9
First white	24	14
First bloom	25	19
Full bloom	27	22
In the shuck	27	24
Green fruit	28	25

## Recent Area Low Temperatures

Location	Low Temp. Apr 24-26
Akron-Canton	29
Berlin Heights	24
Cincinnati	37

Cleveland	28
Columbus	33
Dayton	30
Grape Branch-Kingsville	29
Hoytville	27
Jackson	29
Mansfield	28
Miami University	31
Milan	27
Mount Vernon	31
Piketon	35
South Charleston	32
Toledo	30
Wooster	28
Youngstown	26

## FQPA UPDATE

*Source: Dr. Margaret Huelsman, Extension Associate, PIAP, OSU, notes from National Pesticide Impact Assessment Program Meeting, April 19-21*

The National Pesticide Impact Assessment Program Meeting did not provide as many answers as most of us would have liked, but we were given better information about how EPA is conducting the risk assessment process. Using azinphos-methyl, they walked us through the process of determining the dietary risk assessment, thus far. (I say thus far because they kept stressing how the whole process was a work in progress.) This was helpful because it showed how EPA has refined the process by using more effective models and better data. More importantly, they showed how some of the data from the crop profiles, namely percent acres treated (in addition to better residue data), brought an initial risk assessment that was 10,000% of the reference dose for infants down to one that is between 105-100% of that dose.

They also explained the 6 phase process through which all chemicals go to determine the new tolerances. The process for OPs is call the OP Pilot Public Participation Process (I guess they got extra points for alliteration!). As the name suggests, there are lots of opportunities for public input into the risk assessment and management determination process. They gave us a list of chemicals and showed where they were in the process. We in Ohio need to do a better job of monitoring the release of the preliminary risk assessments so that we can make comments. On that note, USDA has been organizing teams from the land grants to respond to the assessment posted thus far.

## Other main points:

- People from both the USDA and EPA thought that crop profiles will be most useful in the risk mitigation process.
- Developing transitions strategies has become a priority now. They are looking at lower risk crop production strategies, not just at identifying an effective period of time.
- EPA would like more information about what happens to crops once they are harvested -- how they are handled, are they mixed or blended with other like crops, what market they end up in, etc.
- EPA has not developed methods to determine the aggregate exposure of a chemical from the various routes or cumulative risk from chemicals with the same mode of action. These will be very difficult to determine.
- Some type of announcement will be made in August of this year. EPA seems fairly confident in their ability to meet that deadline (but for how many chemicals remains to be seen).

## New USDA Proposals:

- 12 Regional Crop Production Centers - not much detail given
- Crops at Risk Program - a research oriented program designed to look at multiple routes to manage crop pests
- Risk Avoidance Mitigation Program - a long approach to crop production that incorporates food and water safety issues.

If you have any questions please do not hesitate to e-mail or call Dr. Heulsman at (614) 292-8358 or [huelsman.16@osu.edu](mailto:huelsman.16@osu.edu). If you would like hard copies of any of the material that she has referred to, please let her know.

## Cedar Apple Rust

*Sources: IPM Disease Management Guidelines for Apples in Ohio 1994, Dr. Michael Ellis; OSU Extension FactSheet #HYG-3055-96, Dr. Jim Chatfield & Stephen Nameth and C. Wayne Ellett, OSU; Midwest Tree Fruit Pest Management Handbook*

Cedar apple rust (pathogen: *Gymnosporangium juniperi-virginianae*). The fungus alternates between Eastern red cedar and mostly apple and crabapple.

The cedar apple rust fungi overwinter in reddish-brown galls or "cedar apples" in the cedar tree. When wet in spring, the galls extrude gaudy bright orange spore masses of gelatinous tendrils or "horns".

Air currents carry the basidiospores to the apple leaf and fruit, where they infect within 4 hours under favorable conditions. Leaves are most susceptible when they are 4 to 8 days old. Bright orange-yellow leaf spots develop on upper surfaces of leaves in late spring, followed by light colored, fringe cup-shaped structures on lower leaf surfaces several weeks later. Fruit infections and leaf drop can also occur.

Another type of spore (aeciospore) is produced and during July and August, these spores are carried by wind

back to the cedar trees, where they cause infection and complete the life cycle of the fungus.

### **Control of Rust Diseases:**

Some apple cultivars are resistant to cedar-apple rust. Removing cedars within a 2-mile radius of an orchard will disrupt the disease cycle, and fungicides may not be needed.

Protectants: Mancozeb, Polyram, Thiram, Ferbam, Ziram

Sterol Inhibiting (SI) Fungicides: Rubigan, Nova, Bayleton. All of the sterol inhibitors provide excellent control of the rust diseases, and any of them would be the fungicide of choice for rust control.

**Note:** Special fungicide applications for rust control are generally not required. The recommended spray program for scab and powdery mildew should control the rust diseases as well, although captan, dodine, and benomyl do not control rust diseases.

The basidiospores that infect apples are produced and released from cedar galls starting at about the pink stage of flower bud development through first or second cover; this is the most critical time for control with fungicides.

For additional information on cedar rust diseases check out the following web site:

<http://www.ag.ohio-state.edu/~ohioline/hyg-fact/3000/3055.html>

## **Northern Ohio Scab Watch**

### SpecWare 4.0 calculations

Modified Mills Method -

Apr 15 - light infection

Apr 16 - light infection

### SkyBit Apple Scab Product

Apr 16-18 - possible infection & damage

Apr 20 - possible infection & damage

Apr 22-23- possible infection & damage

Apr 24-28 - active, but no infection

Apr 29-May 5 - active, but no infection forecasted

## **Fruit Observations**

### **Site: Waterman Farm, Columbus**

*Source: Dr. Richard Funt, Extension Specialist, Small Fruits, OSU*

Some apple blossoms are frozen in Melrose and Spur Delicious. It could be up to 25% of bloom, but the king bloom looks good and a full crop is expected. Chemical thinning can be more difficult when this occurs and over-thinning can be an issue.

Peaches sustained some damage from the recent cold, which was below 28 degrees F. It appears we have some good thinning, but still a commercial crop. The late or more recent blooms seem to be the worst, while the others are okay. . . maybe 25% or less of blooms, depending on cultivar.

Prelude and Killarney red raspberries are in early tight cluster.

Annapolis strawberries under row covers are in full bloom, which means a ripening date south of Columbus of May 26 to 28.

Spur Red Delicious are in full bloom.

It appears that the warm weather has pushed us to at least 5 days ahead of normal.

**Site: Piketon**

*Source: Brad Bergfeld, Ag Extension Agent, Piketon*

Light pockets of frost occurred around the northern counties of southern Ohio on Sunday morning. No reports of damage to fruit crops.

Spring honey bee activity is the best we have seen for many years. Hives seem very strong, and large swarms have already been spotted. Brad also noticed several "wild" honey bee hives and swarms.

No reports of insect or disease problems. Most apples are at or beyond full bloom in Highland, Clinton, and Pike counties.

Strawberries are in full bloom in Pike, Highland, and Clinton counties.

**Site: East District; Erie & Lorain Counties**

*Source: Jim Mutchler, IPM Scout*

**Apple:** 4/21-27

RBLR: 8.2  
STLM: 649  
Tight cluster

**Peach:**

OFM: 1.3  
RBLR: 1.0  
Mostly Bloom, some at Petal Fall

**Site: West District; Huron, Ottawa, & Sandusky Counties**

*Source: Gene Horner, IPM Scout*

**Apple:**

RBLR: 18  
STLM: 414  
Tight cluster - Pink

**Peach:**



OFM: 0.0  
 RBLR: 34.5  
 Full Bloom

**Site: Columbiana County**

*Source: Dano Simmons, Peace Valley Orchards*

Wind machines were utilized to save king fruit on apples, and Hail Cannon has been installed. Potential exists for good peach crop.

**Site: Wayne County**

*Source: Ron Becker, Program Assistant, Agriculture & IPM, OSU Extension*

Most apples in Wayne County are now in the pink stage, with some in the southern sections showing 5% bloom and some in the northern area still in open cluster. Traps for STLM are showing low counts -- ranging from 3 to about 100. RBLR is showing a strong flight with numbers ranging from 0 to 54. No scab has been found so far. Light cold damage to leaves from last weekend, but no damaged blossoms found. No codling moths have been caught so far.

Peaches range from full bloom to blossom drop. Tarnished plant bug was found in one orchard using a beating sheet. No damage was noticed to the blossoms. Oriental fruit moth trap catch was 12.

**Degree Day Accumulations for Selected Ohio Sites January 1, 1999 to date indicated**

Location	Actual DD Accumulations April 28, 1999		Forecasted Degree Day Accumulations May 5, 1999			
	Base 43° F	Base 50° F	Base 43° F	Normal	Base 50° F	Normal
Akron - Canton	283	107	399	406	174	186
Cincinnati	483	199	604	671	271	334
Cleveland	287	110	398	382	174	175
Columbus	447	193	569	506	266	241
Dayton	391	152	511	513	223	248
Elyria	313	138	422	408	199	190
Fremont	226	84	346	356	155	163
Mansfield	292	112	412	395	184	182
Norwalk	281	114	392	361	176	165
Toledo	260	91	374	348	156	158
Wooster	316	122	446	371	193	163
Youngstown	234	86	356	358	152	162

## Phenology

Coming Events	Range of Degree Day Accumulations	
	Base 43° F	Base 50° F
European red mite egg hatch	157-358	74-208
Redbanded leafroller - 1 <sup>st</sup> flight peak	180-455	65-221
Spotted tentiform leafminer - 1 <sup>st</sup> flight peak	180-44	65-275
San Jose scale 1 <sup>st</sup> catch	189-704	69-385
Lesser peachtree borer 1 <sup>st</sup> catch	224-946	110-553
White apple leafhopper nymphs present	236-708	123-404
Codling moth 1 <sup>st</sup> catch	273-805	141-491

Thanks to Scaffolds Fruit Journal (Art Agnello)

---

The Ohio Fruit ICM News is edited by:

Ted W. Gastier  
Extension Agent, Agriculture  
Tree Fruit Team Coordinator  
Ohio State University Extension Huron County  
180 Milan Avenue  
Norwalk, OH 44857  
Phone: (419)668-8210  
FAX: (419)663-4233  
E-mail: [gastier.1@osu.edu](mailto:gastier.1@osu.edu)

---

Information presented above and where trade names are used, they are supplied with the understanding that no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely, and accurate, the pesticide user bears responsibility of consulting the pesticide label and adhering to those directions.

All educational programs conducted by Ohio State University Extension are available to clientele on a nondiscriminatory basis without regard to race, color, creed, religion, sexual orientation, national origin, gender, age, disability or Vietnam-era veteran status.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department

of Agriculture, Keith L. Smith, Director, Ohio State University Extension.

TDD # 1 (800) 589-8292 (Ohio only) or (614) 292-1868

---

| [Back](#) |