



# Newsletter Extension

## Fruit ICM News

Volume 4, No. 13  
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## Calendar

**June 20 & 21: Direct Marketing Summer Tour in NE Ohio and NW Pennsylvania**, sponsored by Ohio Direct Ag. Marketing Association (DAMA), evening of June 20 and all day on June 21. **Tuesday, June 20:** 6:30 p.m. - Picnic dinner at Whitehouse Fruit Farm, 9249 State Route 62, 4 miles southwest of Canfield, phone (330) 533-4161; 7:30 p.m.- Tour of Whitehouse Fruit Farm. **Wednesday, June 21:** 6:00-7:00 a.m.- Continental breakfast at Whitehouse Fruit Farm; 7:00 a.m.- Bus leaves from Whitehouse Fruit Farm; 7:10 a.m.- Tour Haus Red Apple Orchard, Canfield; 8:45 a.m.- Tour Apple Castle Farm Market, New Wilmington, PA; 10:40 a.m.- Tour Soergel's Farm Market, Wexford, PA; 11:40 a.m.- Lunch at Soergel's; 1:30 p.m.- Tour Trax Farms, Finleyville, PA; 3:30 p.m.- Tour Janoski's Market and Greenhouse, Clinton, PA; 5:30 p.m.- Return to Whitehouse Fruit Farm. Cost is \$50.00 per person, which includes bus travel, Tuesday evening picnic, Wednesday breakfast and Wednesday lunch. To register, contact Rob Leeds, OSU Extension, Delaware County at (740) 368-1925 or leeds.2@osu.edu..

**June 28: Ohio Fruit Growers Society Summer Tour**, Vogley Enterprises, East Sparta, Ohio, Stark County. Wagon tours start at 8:00 a.m. Dr. Dave Ferree will talk about Apogee, for fire blight and growth regulation. Diane Miller will discuss peach varieties and the Vogley's trickle irrigation system. A walking tour of the processing facilities follows, with Winston Bash (Director of Food Industry Center at OSU) reviewing sanitation and food safety. Exhibitors will sponsor lunch, and Ohio Fruit Growers business meeting starts at 1:00 p.m. Cost is \$6 per person or \$12 for the family. For registration, contact OFGS at (614) 249-2424 or [growohio@ofbflog.org](mailto:growohio@ofbflog.org) so they can prepare the proper number of lunches.

**July 27-28: Ohio Berry Tour**, Central Ohio. Starts mid-afternoon on the 27th and ends mid-afternoon on the 28th. Tour stops include Rhoads Farm Market (Circleville), Circle S Farms (Grove City), Schacht Farm Market (Canal Winchester), Jacquemine Farms (Plain City), and Doran's Farm Market (New Albany). We will keep you posted as definite times are set and registration information becomes

available. Contact Berry Coordinator Sandy Kuhn at (800) 297-2027 or [kuhn.37@osu.edu](mailto:kuhn.37@osu.edu) for information needed before then.

**August 3: OVPGA & Ohio Fruit Growers Society Young Grower Tour**, in northeast Ohio, 8:30 a.m. to 7:30 p.m.. This bus tour provides a broad variety of fruit and vegetable operations that use different marketing strategies. Stops include: Farmers Produce Auction (Mt. Hope), Graf Growers (Akron), Hilgert's Berry Farm & Market (Mogadore), K.W. Zellers & Son (Hartville), and Hartville Kitchen (for dinner). Tour is designed for growers 40 years of age and younger, and others are welcome if interested. Contact John Wargowsky at (614) 249-2424 or [jwargows@ofbf.org](mailto:jwargows@ofbf.org) for more information.

**Licking County Summer Twilight School**, stay tuned for details.

## Plum Curculio

*Source: Art Agnello, Scaffolds Fruit Journal, No. 8 (1998), Cornell University, NY*

Plum curculio adults move into orchards from overwintering sites in hedgerows or the edges of woods and are present in the trees from late pink to early bloom before the fruit is susceptible to damage. Adults are active in the spring when temperatures exceed 60F, which means that more than likely they've already started. Adult females oviposit in fruit during both day and night, but feed mostly at night. Depending on temperature, overwintering adults remain active for two to six weeks after petal fall. Although adults may feed on blossoms, apples are not susceptible to damage until petal fall, at which time adults damage fruit by both feeding and ovipositing. Unlike fruit injured by other pests, many apples damaged by plum curculio will remain on the tree until harvest. Because adults are not highly mobile, orchards near overwintering sites, woodlands, and hedgerows are most susceptible to attack. Fruit damage is usually most common in border rows next to sites where adults overwinter.

Monitoring for plum curculio is not currently recommended in New York because of the amount of time and labor involved and because plum curculio is generally assumed to be present in every orchard. However, various techniques have been used in other areas to monitor plum curculio damage and the presence of adults:

- The Tedders "pyramid" trap, a gray, bi-fold wood board unit topped with an inverted screen funnel, can be placed in the orchard, preferably as close as possible to a tree, to attract curculio adults.
- Clubs or shakers can be used to jar adults from limbs into catching frames or cloths for counting.
- Polyethylene funnels hung under branches can be used to capture adult plum curculio.
- Immature "scout apples" hung in trees near the edges of orchards serve to measure oviposition scars before petal fall so potential damage can be estimated before control sprays are applied.
- Oviposition scars on immature fruit can be counted in orchards starting at petal fall to estimate damage from plum curculio. Because substantial oviposition and damage can occur even after a single warm day and night, frequent scouting for damaged fruit is necessary after petal fall. The economic threshold for plum curculio damage after petal fall in Massachusetts has been set at 1 feeding or oviposition scar among 60 apples, 6 from each of 10 trees per block.

Several species of wasps parasitize eggs and larvae of plum curculio. Ants, lacewings, and ground beetles prey on larvae in the soil, and some fungi kill larvae. These organisms are not usually sufficient to regulate populations of plum curculio in commercial orchards. Plum curculio is difficult to control

completely with insecticides. Relatively high rates and persistent applications are important because of the difficulty to predict period of adult activity. In normal orchards that are not near woodlots or hedgerows and have not suffered previous damage, a single application at petal fall will provide seasonal control.

In problem orchards, a petal fall application followed by a second spray 10 to 14 days later will provide adequate control. In orchards with chronic problems, or in seasons when adult activity is prolonged by unusually cool and wet weather, two cover sprays applied 10 to 14 days apart after petal fall may be necessary to prevent late damage. This recommendation derives from a developmental model tested several years in the field at Geneva, which predicts that control sprays are no longer necessary whenever the last spray has been applied with 10-14 days after the accumulation of 340 DD (base 50F) from petal fall. Guthion, Imidan, Lorsban, and all pyrethroid insecticides are effective at controlling plum curculio. These materials will also control codling moth later on.

## Chemical Thinning of Apples

*Source: Pennsylvania Tree Fruit Production Guide,*

<http://tfpg.cas.psu.edu/part1/part12q.htm>

Chemical thinning applications are probably the most important single spray in a season. Small fruit do not have a strong market, and the effects of less return bloom in the following year can affect overall profitability. In recent years there has been more work conducted on chemical thinners by Drs. Rich Marini and Ross Byers at Virginia Tech. Much of the following discussion is based upon communications with them.

Current thinking suggests that fruit abscission may be due to a temporary carbohydrate shortage. Conversely, when carbohydrates are in abundance then it is more difficult for fruit to abscise or to induce abscission through the use of chemical thinning agents. Conditions such as cloudy weather, high nighttime temperatures, and cool daytime temperatures all adversely affect the carbohydrate reserves. Cloudy weather and cool temperatures result in lower photosynthesis rates and less carbohydrate production. Warm nighttime temperatures mean an increase in respiration or consumption of carbohydrates. Recent work in England also indicates that flowers can provide a portion of the carbohydrates in the early season; therefore, sublethal damage to flowers can result in a reduction in photosynthate manufacture, possibly reducing fruit set.

Weather conditions 24 hours before and 72 hours after the application of the growth regulator thinners (NAA, NAD, 6-BA) may be more important than actual fruit size at time of application. The significance for applicants is that if they are faced with applying a thinner when weather conditions are cold because the fruit is at the ideal size, we recommend they delay application until more favorable weather is expected. This does not mean, however, that growers can wait a long time; rather, they should exercise some discretion.

Along with the effects of weather we also think that certain materials can be more effective at different fruit sizes. NAA materials, Sevin, and Vydate can be effective from petal fall to fruit sizes of 20 mm. NAA materials, however, should never be applied to Spur Delicious fruit when the size is above 9 mm in diameter. Applications above 9 mm in diameter result in excessive production of pygmy fruit.

Certain materials should not be mixed together in any one year. Do not make applications of Accel and NAA materials to the same trees. The combination of these two can result in excessive formation of pygmy fruit. If trees have received Promalin in an earlier spray, avoid using NAA materials for thinning in later sprays.

Growers that have not been getting sufficient thinning with their current programs are advised to try some of the programs that have proven successful in North Carolina (Table 16 as accessible from the above source). These should be used on a limited acreage until the grower learns how they perform under the local set of orchard and application parameters.

The table ranks the thinning activity of standard chemical thinners from least to most. The rates per 100 gal of these materials is given, along with the recommended fruit size, dependent upon varieties. Listed cultivars are Granny Smith, Gala, Empire, Jonagold, Ginger Gold, Braeburn, Red Delicious Standard & Spur, Golden Delicious, Rome Standard & Spur, and Fugi. An added feature are the thinning recommendations, if needed.

Also available is a JavaScript Program for determining the ounces of NAA to apply per acre in enough water to thoroughly wet the foliage at a given ppm. (Look at the very end of the section titled "Growth Regulators in Apple and Pear Production").

## Fruit Observations

Insect Key	
AM:	Apple maggot
CM:	Codling moth
DWB:	Dogwood borer
LPTB:	Lesser peachtree borer
OBLR:	Oblique banded leafroller
OFM:	Oriental fruit moth
PC:	Plum curculio
PTB:	Peachtree borer
RBLR:	Redbanded leafroller
SJS:	San Jose scale
STLM:	Spotted tentiform leafminer
TABM:	Tufted apple budmoth
VLR:	Variiegated leafroller

### Site: Waterman Lab, Columbus (5/11-5/17)

Source: Dr. Celeste Welty, OSU Extension Entomologist

Traps used: STLM=wing traps, SJS=Pherocom-V, Others=Multipher-1® traps

#### Apple

RBLR: 0 (unchanged)

STLM: 0 (down from 4)

DWB: 0 (unchanged)

SJS: 4 (down from 268)

#### Peach

OFM: 14 (down from 28)

LPTB: 0 (down from 2)

PTB: 0 (unchanged)

CM: 12.3 (down from 27.3)  
 OBLR: 0 (unchanged)  
 TABM: 0 (unchanged)  
 VLR: 0 (unchanged)

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**Site: East District; Erie & Lorain Counties (5/11-5/17)**

Source: Jim Mutchler, IPM Scout

Traps Used: STLM=wing traps, Others=Multiplier® traps

**Apple**

RBLR: 2.2 (down from 19.6)  
 STLM: 350 (down from 783)  
 CM: 23.4 (up from 6.0)  
 SJS: 0 (up from 45.8)

**Peach**

OFM: 7.33 (up from 5.0)  
 RBLR: 1.3 (down from 14.7)

**Other pests:** plum curculio strikes, white apple leafhopper, rosy apple aphid

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**Site: West District; Huron, Ottawa, & Sandusky (5/10-5/16)**

Source: Gene Horner, IPM Scout

Traps Used: STLM=wing traps, Others=Multiplier® traps

**Apple**

RBLR: 1.0 (down from 8.2)  
 OFM: 5.75 (down from 12)  
 SJS: 4.0 (up from 1.4)  
 RBLR: 0.8 (down from 13.8)  
 CM: 3.4

**Peach**

LPTB: 36.0 (first report)  
 PTB: 0.8 (first report)

**Beneficials at work:** Banded thrips, predatory wasp

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**Site: Wayne County (5/11-5/17)**

Source: Ron Becker, Extension Program Assistant

Traps used: STLM=Wing traps, PC=Circle trunk trap, Others=Multiplier® traps

	Apple			
	North	South	East	West
RBLR:	4.7	1.5	9	4.75
STLM:	8	3	12	19.5
CM:	0.56	1.33	0	17.27
PC:	0			0

	Peach		
	North	South	West
OFM:	9	5	0
LPTB:	4	5	10
LPTB:	0		0

**Orchard observations:** *North:* heavy red mite on one tree with leaves starting to bronze. Light ERM on other trees. Light aphid. Light scab infection period on 5/10. Heavy probability of fire blight on 5/8, 5/510, 5/13. *South:* Light catfacing on peaches from curculio damage. Also light aphid infestation in peaches. Pustules of orange rust on raspberries are nearly ready to burs. *West:* Light red mite in one block. Also light aphid and white apple leafhopper. A light infestation of two spotted spider mite was found on raspberries. No scab infection period since 5/9.

## Northern Ohio Apple Scab Activity - SkyBit Product

SkyBit based on observations: May 1, 2, 5, 7, 8, 10, 13, 17; possible infection & damage

**Based on Forecasts:** May 18-23; possible infection & damage

### North Central Ohio Spectrum Technologies Orchard Monitors for Apple Scab

Spectrum Technologies Monitors and Software\* Observations: May 1,2,10; Light Infections (Software\* based on Modified Mills Chart)

## Northern Ohio Fire Blight Activity - SkyBit Product

SkyBit based on observations: May 1, 4, 5, 7-10, 13; possible infection & damage

**Based on Forecasts:** May 18, 19, 21-23; possible infection & damage

## Degree Day Accumulations for Selected Ohio Sites January 1, 2000 to date indicated

Location	Actual DD Accumulations May 17, 2000		Forecasted Degree Day Accumulations May 24, 2000			
	Base 43° F	Base 50° F	Base 43° F	Normal	Base 50° F	Normal
Akron - Canton	712	349	832	706	421	366
Cincinnati	942	495	1098	1062	600	597
Cleveland	697	348	812	669	416	344
Columbus	909	477	1045	846	566	456
Dayton	885	456	1024	860	545	470

Mansfield	703	349	821	690	419	356
Norwalk	699	344	815	651	413	337
Toledo	720	344	837	639	413	330
Wooster	768	387	881	654	453	327
Youngstown	691	332	800	631	395	319

## Phenology

Coming Events	Range of Degree Day Accumulations	
	Base 43° F	Base 50° F
Cherry fruit fly 1 <sup>st</sup> catch	650-1500	368-961
Black cherry fruit fly 1 <sup>st</sup> catch	686-985	392-636
Lesser peachtree borer flight peak	733-2330	392-1526
Peachtree borer 1 <sup>st</sup> catch	735-1321	299-988
Oriental fruit moth 1 <sup>st</sup> flight subsides	781-1574	442-1026
Spotted tentiform leafminer 2 <sup>nd</sup> flight begins	795-1379	449-880
Dogwood borer 1 <sup>st</sup> catch	798-1182	456-718

*Thanks to Scaffolds Fruit Journal (Art Agnello)*

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