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**FFF04-04**

**May 7, 2004**

**Crop Conditions.** Well just when the season was looking good... Early warm temperatures were followed by a cool snap that hit around the time of apple flowering (the last 2 weeks) across much of the state. Obviously this didn't help bee activity or pollination. Frost has damaged some apple crops in northern areas of the state. Warmer temperatures are forecast for at least the next week or so providing good chemical thinning opportunities.

**Frost Affects Fruit Crops** – frosts were recorded in some places across the state on April 28 and at a few sites on May 3. A brief scroll through the weather station data (available online at <http://shadow.agry.purdue.edu/sc.index.html>) shows the following minimum temperatures at sites across the state: Angola 27, Bloomington 41, Columbus 35, Greenfield 35, Lafayette 38, LaPorte 28, Martinsville 37, New Castle 31, Plymouth 32, Tell City 46, Terre Haute 43, Vincennes 39, Wabash 29. These temperatures were recorded at weather stations and the actual temperatures at your farm are likely to differ. At this time of the year a few degrees can make all the difference in the world.

A few orchards in the northern part of the state sustained quite a lot of damage to apple blooms as a result of frost. Some orchard blocks have little damage while in others the damage is extensive. Even with frost damage, don't give up on the idea of chemical thinning yet. Less than 10% of live buds are needed for a full crop, so even with damage you may still need to thin. A couple of years ago I visited an orchard with extensive frost

damage and bet the grower a steak dinner that he would still need to thin. I won the bet, but he has yet to pay up (you know who you are!). Wait for fruit drop and see what sets before deciding on your thinning strategy. (Hirst)

**IHS Summer Meeting:** The summer meeting of the Indiana Horticultural Society will be held at in the North Eastern part of the state on June 28-29. Full details will be provided soon, but write these dates on your calendar and plan to attend. (Hirst)

**Apogee:** If you are going to apply Apogee this year, the time is now! Apogee is a relatively new growth regulator for use on apples. It can reduce shoot growth dramatically, but it is expensive so it's probably not a product you want to spray over your whole orchard each year. Its main application is likely to be in blocks where there is excessive vigor due to crop loss, or inappropriate tree spacing / rootstock combination. Apogee can also reduce the incidence of fireblight – it does this not by affecting the fireblight bacterium, but by reducing the amount of susceptible new shoot

growth on the tree. Timing of application is critical, and if this product is applied after shoots are about 3" long, then it is likely to have little effect. Rates of application and more details are in the 2004 Commercial Tree Fruit Spray Guide. (Hirst)

**Apple Thinning:** The thinning decision you make with apples is one of the most critical management decisions you will make all year, and one that affects not only the crop this year, but next year also. Thinning is all about tradeoffs and compromise. The earlier you thin, the better the response will be, both in terms of fruit size increase and in return bloom for next year's crop. The problem is that early thinning is risky, so what to do? Use the nibble approach where you don't try to get the job done in one shot. Put on a mild thinner application early (say around petal fall) and then follow up with another application about 10-14 days later if you think it is needed. This way you achieve some of the benefit of early thinning while at the same time spreading some of your risk. A few other pointers for thinning:

- Thinners work best when temperatures are 70-80F at the time of application and for a few days afterwards. Don't apply thinners when temperatures are below 65 F, as they will have little affect.
- Keep detail notes of what you applied, what rate, when, what the conditions were at the time of application and for a few days afterwards, and what the result was. This will help you build up a picture of what works best on your farm
- If you suffered some frost damage, think long and hard before you decide not to thin this year. The risk is that there may be more crop left than you think, and by not thinning you may be compromising next years crop as well as the crop this year.

The best book I know of on thinning is the "Apple Thinning Guide" by Phil Schwallier at Michigan State University. It costs about \$10 and is available from Great Lakes Publishing, Phone 1-616-887-9008. (Hirst)

**IDFTA 'Honeycrisp' Summer Tour** – The International Dwarf Fruit Tree Association (IDFTA) is holding their summer tour for 2004 on June 21-22, and this year will be headquartered in

La Crosse, Wisconsin. The emphasis for the tour is 'Honeycrisp', without doubt the hottest apple in the country for the last few years. Orchards included on the tour are:

- Sunrise Orchards, Gay Mills, WI. A third generation family owned operation growing, packing and marketing apples on 240 acres.
- Shefelbine's Orchard, near Holmen, WI. Established in 1951 and now growing strawberries, and various apple varieties including 30 acres of Honeycrisp.
- Sacia Orchard, one of the largest orchards in west central Wisconsin, with 230 acres of apples and 32 acres of Honeycrisp on M.7, G.16, G.30, B.9 and Supporter 4 rootstocks.
- Maiden Rock Apples, near Stockholm, WI. An 80-acre retail farm growing 25 varieties on dwarfing rootstocks.
- Bridal Rock Orchard, near Lake City, MN. In operation since 1907, recent plantings includes 3000 Honeycrisp trees on B.9 rootstock.
- Pepin Heights Orchard, Lake City, MN. A vertically integrated grower, packer, processor and broker of apples and apple products.

The cost of the tour is \$250 for members (membership is \$85 which includes their magazine, the Compact Fruit Tree). This includes motor coach transportation, lunches and a group dinner. More information is available on their website: <http://www.idfta.org> (Hirst)

**European Red Mite Management** – We are rapidly approaching the time when we have some major decisions to make about managing European red mites. Managing this important pest has five components.

1. Dormant oil sprays
2. Conservation of predator mites
3. Preventive miticides
4. Curative miticides
5. Resistance management

Hopefully you all put on a timely dormant oil spray several weeks ago. I have preached to you for many years about the importance of conserving predator mites. The effectiveness of the miticides

we have available now gives us more flexibility than we had several years ago, but conserving those predator mites is still the key to effective mite management. Avoid the use of Ambush, Pounce, Asana, Vydate, Carzol, and Lannate if at all possible.

Now you have to decide whether to put on one of our excellent preventive miticides, Apollo, Savey, or Agri-Mek. With the revision in labels several years ago, we no longer have to apply Apollo and Savey before petal fall, which allows us to prolong their effective life. Those products should always be used after petal fall. My data indicates that they will be effective if applied as late as early June. Agri-Mek can be applied up to six weeks after petal fall, but most of the entomologists in the Midwest agree that first cover is about the right time for this product.

We also have two effective rescue miticides, Pyramite and Acramite. My observation is that Pyramite may be slightly more effective at controlling European red mites than Acramite, but it is also more toxic to the predator mites. Also, Acramite is sensitive to hard water, so it's important to resolve that problem if you use Acramite.

We are in a very good situation right now with the materials we have available. Avoiding the development of resistance is important so that we continue to have this selection of products. Remember that Apollo and Savey have similar modes of action and should be considered as the same product in terms of resistance management. The primary method for avoiding resistance is to limit the exposure of the European red mites to a single compound or mode of action. Based on the products we have available, I recommend that growers follow a four-year program for mite management.

**Year 1** – Apply either Apollo or Savey as a preventive miticide. If you are already seeing a fair number of mites, you should probably start with one of the preventive miticides this year. Also, if you had a serious mite problem last year, you should definitely start the program with a preventive miticide.

**Year 2** – Don't apply a preventive miticide. Wait to see if a problem develops. Often, mite populations will remain below the threshold and no applications will be necessary. However, if a mite problem develops, apply either Pyramite or Acramite to clean up the problem

**Year 3** – Apply Agri-Mek as a preventive miticide.

**Year 4** - Don't apply a preventive miticide. Wait to see if a problem develops. If a mite problem develops, apply either Pyramite or Acramite to clean up the problem

Whether you start the program with Apollo/Savey, or Agri-Mek is not important. The important thing is that you try to limit the exposure of these products to every fourth year. If we can do that, we should be able to make these products last for a long time. There are several new miticides that may be coming along soon. This will give us even greater flexibility. I will keep you posted when those products become available. (Foster)

**Cicada Update** – By the time you receive this newsletter, I suspect that cicada emergence will have begun in southern Indiana. The warm spring we have had has apparently moved up the time of emergence of the cicadas. See the April 9 edition of FFF for more details. (Foster)

**Codling Moth** – In West Lafayette, I have caught just a couple of random codling moths in two different traps. The recent cool weather has slowed down their development, but I suspect that the warm weather late this week (I'm writing this on May 6) will result in moths starting to fly very soon. Generally we wait until we had a sustained flight, arbitrarily set at five moths in a trap, before we establish our biofix. At that point we start accumulating degree days (base 50) to determine the optimal time to put on our first cover spray. For most of the products available, the general consensus is that the first spray should go on at 150 – 200 degree days after biofix. If you have had good results with Imidan or Guthion in the past, those products will most likely still give well to excellent control. If you want to switch to an alternative product, I would recommend Danitol for first generation control if you are in an area where cicadas are a problem. The results throughout the lower Midwest from last year showed that Assail and Calypso also provided control comparable to Guthion. These products have similar modes of action and I would not recommend using both in the same year, for fear of developing resistance. (Foster)

**FIRE BLIGHT ALERT:** Bloom + Warm Weather + Rain = Fire blight! A few weeks ago I had a number of phone calls from nervous growers asking about the potential for fire blight, especially

with the early warm weather we experienced. At that time, the one ingredient that was missing was RAIN; however two days later, at full bloom in many parts of the state, we had an all-day rain. Therefore, I'm expecting a good deal of fire blight to pop up throughout the state over the next few months. Expect fire blight symptoms to begin showing about May 15 in southern Indiana, move on to central Indiana about June first and hit northern Indiana by mid June. Growers in southern Indiana should be scouting their orchards NOW. Be especially diligent in patrolling young blocks of apples (<5-7 yrs old) for the first symptoms of fire blight, wilted terminal tip ends. Cut out blighted twigs 10 to 12 inches below any sign of infection, being sure to sterilize pruning tools between each cut. If the infected shoot is associated with the main trunk or a major scaffolding limb you may want to try the "ugly stub" cut, deliberately leaving a naked 4 inch branch stub above the supporting limb. Marking the ugly stubs with flags or a bright colored paint when the cuts are made can help in relocating them during the winter pruning operation. And remember, when severe windstorms or rainstorms with or without hail occur during peak fire blight season (now), apply streptomycin within 24 hours...the sooner it is applied the better. (Pecknold)

***Powdery Mildew of Apple:*** While most fungal diseases do best with wet conditions, the one exception is powdery mildew. Powdery mildew is more prevalent during years when weather is dry and the previous winter has been mild. Keep a close watch for the first symptoms of powdery mildew; especially on those inner, shaded, water sprouts. Growers of mildew susceptible varieties such as Jonathan, Rome Beauty, and Ida Red (my favorite disease apple) should be especially watchful. The tight cluster, pink, bloom, petal fall and first cover sprays are most critical for controlling mildew, but fungicide protection is needed until terminal buds are set. Your best mildewcides are the SI fungicides (Bayleton, Nova, Rubigan and Procure) and the strobilurins, Sovran and Flint. Good old Captan, Vanguard, Polyram and Mancozeb products do not provide adequate control of powdery mildew. I especially like the use of Sovran or Flint at first cover, not only do you get control of powdery mildew but you also get good control of fruit scab and an early start on sooty blotch and flyspeck. (Pecknold)

***EBDC Fungicides:*** We strongly suggest that growers calculate the 77 days to harvest date for each of their major cultivars and make the final application of EBDC fungicide (Dithane M-45, Manzate 200, Penncozeb, Polyram) on that date to take full advantage of the excellent control these fungicides provide for sooty blotch and flyspeck. In the Lafayette area this would make July 20<sup>th</sup> the final spray date assuming harvest occurs October 4<sup>th</sup> (unless I counted my days wrong). This recommendation applies **only to growers who used the low rate** of mancozeb - 3 lbs/acre. Refer to page 13 of ID-168, "2004 Indiana Commercial Tree Fruit Spray Guide", for further information. (Pecknold)

***Peach Scab:*** Early shuck-split and shuck-fall sprays are critical for peach scab control. The first spray should be applied about one week after petal fall. Do not wait until the shucks have slipped to begin this program. Continue to spray on a 10-day interval until 40 days before harvest. See ID-168, "2004 Indiana Commercial Tree Fruit Spray Guide", for further information. (Pecknold)

***Indar Receives Section 18 Exemption for Use on Blueberries:*** EPA has granted a section 18 Specific Exemption for fenbuconazole (Indar) fungicide for use on blueberries in Indiana for the 2004 growing season. Indar 75WSP (fenbuconazole) is used for the control of mummy berry disease. The supplemental label for the Section 18 exemption has been issued by Dow AgroSciences. This supplemental label must be in the possession of the user at the time of application. Contact Dow Agrosciences, (<http://www.dowagro.com/label/index.htm>) for a copy of the label. If you have questions about section 18 exemptions for pesticides, contact the Indiana State Chemist at 765-494-1587. (Bordelon)

***Getting the Most out of Early Season Weed Sprays:*** Fruit growers often apply a post-emergent herbicide beneath the tree or vine row in spring to control winter annuals and other weeds. A pre-emergent herbicide may be included in this application. Glyphosate (Roundup) is a post emergent systemic herbicide that is widely used for this first weed spray. In order for glyphosate to be effective, it needs to be absorbed into the plant. In soft water glyphosate has no problems in being absorbed. However in hard water glyphosate will be 'tied up'

and not absorbed as readily. Hard water, common in many parts of Indiana, contains high concentrations of soluble salts, calcium and magnesium. When these cations are present they react with the negatively charged glyphosate to form compounds that are not readily absorbed by plants. This results in poor uptake and poor weed control.

The solution to the hard water problem is to add ammonium sulfate to the spray water **before** mixing with glyphosate. Ammonium sulfate ions tie up the calcium and magnesium ions forming conjugate salts. Additionally, some of the glyphosate reacts with ammonium to form a compound that some weeds preferentially absorb. Follow the Roundup label recommendations on the amount of ammonium sulfate to add.

Another problem associated with spray water quality is that many fungicides and insecticides break down quickly in high pH water. Captan, Imidan, Malathion, and Omite are examples of compounds that are especially vulnerable to alkaline hydrolysis. Both the Commercial Tree Fruit and Small Fruit and Grape Spray Guides have a discussion of spray tank pH. Briefly, addition of about 2 ounces of food grade citric acid per 100 gallons of water will lower the pH from about 8.0 to about 5.5. (Bordelon)

**Grape Phylloxera:** The foliar or aerial form of grape phylloxera is starting to show up in vineyards across the southern and central parts of the state. The pest is normally not damaging enough to warrant a special insecticide application. However, this past season, phylloxera damage was particularly severe across the region, so we expect it could be damaging again this season. The best products for controlling the foliar form of phylloxera are endosulfan (Thiodan) and fenprothrin (Danitol). The appropriate time to apply these materials is at

or just before bloom and then 10 days later. Growers should be aware that Thiodan can cause phytotoxicity on certain varieties, and that Danitol is a Restricted Use Product (RUP) requiring applicator license and record keeping. Always read the label. Leaf phylloxera is normally more severe on thin-leaved varieties such as the French hybrids rather than American or labrusca types. And the insect seems to be particularly attracted to certain varieties. We have noted that Leon Millot, Chambourcin, Frontenac, LaCrescent, and a few others are particularly attractive. (Bordelon)

**Contact Us Toll Free!!!** Growers, homeowners, and anyone else with questions for state Extension Specialist can contact us using the Purdue Extension toll free number: 1-888-EXT-INFO (398-4636). The operator (a real live person!) will direct your call to the appropriate specialist. We ask that you start by contacting your county Extension Educator for help, and then if you need our assistance, feel free to call us and save yourself a little money. You can use this same line to order Extension Publications from the Media Distribution Center.

#### **Upcoming Meetings:**

June 21 – Indiana Winegrowers’ Guild summer meeting & workshop. Chateau Pomije Winery, New Alsace. Visit [www.indianawines.org](http://www.indianawines.org) for details.

June 21-22 – IDFTA summer tour (see article in this FFF or <http://www.idfta.org> for more details).

June 28-29. Indiana Horticultural Society Summer Tour – more information coming soon.

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