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Crop Conditions: Most parts of the state have experienced excellent weather for apple pollination, thinning and fruit growth. In the southern part of the state fruit are towards the end of the chemical thinning window whereas in central to northern areas, fruit are around the 12mm stage and in most cases looking good. There are some great looking peach crops around the state and most appear to be growing well. Blueberries are in full bloom in the main production areas of northern Indiana. Growers report light flowering where no irrigation was used last fall so pollination will be critical. Grapes are just starting to bloom in southwestern Indiana. Eastern Flower Thrips have been found in fairly high numbers on strawberries in southern Indiana. Recent strong storm fronts from the southwest may have brought them in. Refer to the past issue for recommended for controls.

Stopping Spread of Apple Scab: About 9 to 17 days are required from the time of infection by apple scab until the appearance of the olive-green, velvety scab lesions. Within the lesions secondary spores (conidia) are produced throughout the summer months... by the billions! Growers should start checking NOW for the first symptoms of scab. The recommended course of action **where scab lesions are present** has been to apply a SI fungicide (Nova, Procure, or Rubigan) to minimize additional leaf infections **in combination with a FULL rate** of Captan to provide optimum control of fruit scab. However, with the introduction of the new strobilurin fungicides growers have a new alternative for keeping scab in check. One of the primary strengths of the strobies is their ability to suppress the formation of secondary spores from recent infections. If Sovran or Flint is used to suppress secondary spore formation it is strongly recommended that you use the full rate of the strobilurin fungicide. Remember that fruit are at their maximum stage of susceptibility

from pink until about 3-4 weeks after petal fall.
 -Pecknold

Fire Blight: Even though streptomycin is registered for use until 30 days before harvest on pears and 50 days on apples we do not recommend the use of streptomycin after petal fall due to the potential for resistance to develop. The one exception for the use of streptomycin after petal fall is following a hailstorm or heavy wind damage. This "hail spray" should be made within 18 to 24 hours after the start of the storm, even if the foliage is not completely dry. -Pecknold

Strawberry Diseases: Strawberry gray mold and leather rot are most apt to occur under cool, wet, cloudy conditions. Keep an eye on your prevailing weather conditions and act (spray) accordingly. Recent wet conditions may result in extreme disease during the coming month. See ID-169, "2000 Indiana Commercial Small Fruit & Grape Spray Guide", for further information on suggested fungicides. -Pecknold

European Red Mites: Even though it is early in the season, I have already received reports of high populations of European red mites in apples. Generally, these reports are from blocks that did not receive applications of Superior oil earlier in the spring, either because of weather or because the grower decided not to apply it. Once again, these situations emphasize the importance of early season oil applications. Even though we have some very good miticides available, applying oil early is a good, inexpensive management decision.

As for this year, it appears that we may be in for a serious mite year. Growers should be out looking for mites now so that they can stop developing infestations early. Focus your scouting on those areas where you are most likely to find mites. Good examples of places to look would be blocks of Red Delicious, blocks where you had a problem last year or where you perennially have problems, or blocks that did not receive oil this spring. At this time of year, you should treat if you find more than an average of 2.5 mites per leaf. Choices for control would include Apollo, Agri-Mek, Pyramite, or a summer oil. As you get further past petal fall, the level of control you can expect to get from Agri-Mek goes down. Best control is achieved if Agri-Mek is used right after petal fall. I believe that this early in the season, Apollo will provide excellent control, particularly if infestations are caught before they get out of hand. Summer oils are an inexpensive choice now if you have not yet started using captan.

As I mentioned in the last FFF, if you find a mite problem in a block that was not treated with Apollo or Savey, and would be willing to put a test plot in your orchard, please give me a call. -Foster

Rosy Apple Aphid: I have seen several orchards this spring that had heavy infestations of rosy apple aphids shortly after bloom. While it would have been preferable to control the aphids at pink, control now is still possible if you get on it quickly. Probably the best insecticide you can use post bloom is Provado, which will also provide control of spotted tentiform leafminers and leafhoppers. Other materials will still kill aphids, but it is difficult to get the spray on target when the leaves are curled. -Foster

Important Grape Spray Reminder: Grapes are just starting to bloom in the southern part of the state so growers should be aware that the next few fungi-

cide applications are very important. The pre-bloom (or early bloom) and the first post bloom applications are the most important sprays for controlling the major grape diseases. Care should be taken to get thorough coverage of all foliage and developing fruit. Slow the tractor speed, spray every row middle, increase volume, and use full labeled rates. This would be a good time to use one of the new strobilurin fungicides. Refer to the last issue of FFF for a thorough discussion of grape disease management. -Bordelon

Crop Load Adjustment in Grapes: Annual pruning of grapes is necessary to balance the amount of fruit production with the amount of vegetative growth to insure high yields of high quality fruit. Pruning severity is based on the strategy of 'balanced pruning' which dictates the correct number of buds to retain, or 'crop load' which determines the amount of fruit to retain. Both are based on the vine's pruning weight. Many growers prune vines lightly during the early spring to assure adequate bud number in case of damage by a late frost or freeze. Now that the danger of frost and freeze is over (we hope) and grape shoots are growing rapidly, growers can go back through the vineyard and adjust the crop load by removing shoots and clusters. New shoots are easily broken off by hand without the need for pruners. Growers should pay close attention to the fruitfulness of shoots. Shoots from primary buds have full fruiting potential, whereas secondary buds and latent buds on older wood produce shoots with little or no fruiting potential, depending on cultivar. Ordinarily, all secondary shoots and shoots from older wood should be removed. Shoots should be spaced evenly along the trellis if possible and at a density of about six shoots per foot of row. Cluster thinning (removing one or more of the clusters on each shoot) done before bloom results in the least yield reduction because the remaining cluster(s) generally set more berries. However, on tight clustered cultivars, cluster thinning after bloom can result in looser, less rot susceptible clusters. -Bordelon

Nitrogen Fertilization on Grapes: Active root growth is required for uptake of nitrogen and other nutrients from the soil. Root growth in grapes does not begin until a few weeks after bud break. Since nitrogen fertilizers are quickly available and prone to leaching, application prior to bud break is inefficient and may lead to ground water contami-

nation. Mid- to late-May applications are the most efficient. Try to apply nitrogen prior to an expected rain. This is especially important with urea, as it volatilizes into the air, particularly under warm conditions. Ammonium nitrate is usually preferred for this reason. Avoid applications close to bloom as fruit set may be reduced. Split applications are generally better than a single application. Applying 1/2 to 2/3 of the expected total in mid-May, followed by the remainder after fruit set (about 4 weeks later) allows more efficient nitrogen use and better assessment of the need for fertilizer. Often the second application can be skipped, depending on the crop load and vine vigor. Nitrogen can be banded or broadcast in mature vineyards, but should be banded on young vines. Banded applications are probably better on deep, well drained soils where root growth does not extend laterally into the row middles. Rates of up to 100 pounds of actual N are commonly used and there seems to be little justification for exceeding that rate. On deep, fertile soils typical of Indiana vineyards, 50 pounds may be adequate. Foliar analysis does not provide a good measure of nitrogen status unless samples are taken at full bloom (rather than 70 days after full bloom as is recommended for other nutrients). The best indicators of nitrogen status are shoot growth, vigor, leaf color, etc. Experience is the best guide. Excessive nitrogen fertilization leads to excess vigor, poor fruit set, poor fruit quality, and inadequate hardening off in fall. By splitting applications growers have more opportunity to adjust for various conditions and avoid over fertilization.

-Bordelon

Care of New Grape Plantings: There have been several new vineyards planted around the state over the past few years. Those planted this spring should be growing well. Depending on the date of planting, vines should be at a point where they will need some initial training. If your vines are in grow tubes, be sure to provide support for shoots above the tube to avoid damage from the shoot scraping across the edge of the tube. Either use a string tied between the mid and upper trellis wire (if the trellis is established) or tie the shoot to the stake supporting the grow tube. "Tapeners" work well for quick, easy tying of shoots to the support, but any type of tie will work so long as it doesn't girdle the shoot. On one and two year old vines shoots should be removed along the trunk to concentrate growth

along the top wire for cordon establishment. Shoot removal usually needs to be done two or three times during the season on young vines.

Control weeds! I can't overemphasize the importance of controlling weeds in new grape plantings. Despite the depth of the root system, vines do not compete well with weeds. Cultivation or post emergent herbicide application will be necessary if pre-emergent material wasn't used at planting or has lost effectiveness. Glyphosate (e.g. Roundup) can safely be used on vines in grow tubes, but extreme care must be taken using glyphosate around unprotected vines. If grasses are the main weed problem then grass-specific herbicides such as Poast, Fusilade, or Prism may be better choices. See the weed control section in the Commercial Small Fruit & Grape Spray Guide for complete information. *-Bordelon*

Thinning – how much is enough: Experienced growers don't need me to tell them that thinning decisions are one of the trickiest, yet most crucial management decision they will make during the year. This is especially so when crops have suffered some degree of frost damage. Frost often results in crops that are patchy, with some areas of the tree or orchard looking heavy whereas others appear to have very light flowering. As a general rule, I would suggest thinning such blocks to try to even out the flowering for next year. Thinners work best when there are heavy crops and may have little or no effect on areas of trees or orchards with light flowering, so applying thinners to these trees should even out the crop quite well.

Of course the devil is always in the details and this is where general advice is of less value. To come up with specific guidelines, the best resource is your experience for your own orchard. **KEEP NOTES ON WHAT THINNING YOU DID.** We all think we will remember, but a lot will happen in the next 350 days or so until you are thinking about thinning again. Whether you keeps records on a computer, in a notebook or chisel it into the barn wall, for each variety record what you applied, the stage of crop development and the weather conditions at the time of application and for several days afterwards. Remember that chemical thinners don't work below 65°F and work best when temperatures are in the 70's. Over-thinning may result when temperatures are above 85°F. Keep in mind that the risk of under-thinning

is probably greater than the risk of over-thinning. Under-thinning can ruin 2 year's crops, not just one. *-Hirst*

Thinning of Honeycrisp: Many growers around the state have planted a few Honeycrisp trees and are wondering how to treat them regarding thinning. The best information available comes from Dr Jim Schupp of Cornell University. According to Jim, Honeycrisp is easy to chemically thin and 2 1/2 – 5 ppm of NAA works well during the 10-12 mm fruit size window. NAA at 2 1/2 ppm with a quart of Sevin works well as an aggressive thinning strategy. Adequate thinning of Honeycrisp is essential as it can be very biennial, but over-thinning can be a problem as large fruit can tend to exhibit bitter pit. *-Hirst*

New Zealand Tour: Plans are progressing for our fruitgrowers tour of New Zealand in 2001. Here are some dates for your calendar. We will fly out of Indianapolis on Monday February 19 for Los Angeles then on to New Zealand. We will see commercial production of apples, peaches, pears, grapes, kiwifruit (down there they are kiwifruit and not kiwis!) and vegetables. We will also visit packing plants, coolstores, shipping and distribution depots and markets. Heinz Corporation has their largest investment outside the United States there and we hope to visit this fruit and vegetable processing plant. We will also see a fair amount of the country and visit bubbling mud pools, have a Maori hangi (a traditional feast cooked in a pit in the ground), and visit various other cultural/recreational sites. We will stop over for a day relaxing in Fiji on our way home. The total length of the tour will be 2 weeks, arriving back in Indianapolis on Sunday, March 4. Thanks to those who have provided feedback on their preferences – I've taken account of as many of your suggestions as possible. Watch this space and I'll keep you updated as the planning comes together. *-Hirst*

Take Care of Young Trees: If you planted trees this year, don't forget about them. Now is a good time to spend just a little bit of time pointing them in the right direction. Rubbing out unwanted shoots now, while they are only a few inches long, is quick, easy, and helps to develop the tree faster. The main concern now, is several competing shoots at the top, especially if trees were headed at

planting. Select the leader (usually the top, most upright and strongest shoot) and rub out the 2-3 shoots immediately below it. Typically these shoots will be very upright and will cause problems later if left in the tree. Also remove shoots that are too low – I consider 2 1/2-3 feet above the ground to be where the lowest branch should be. This should take less than a minute per tree at this stage where unwanted shoots can be easily rubbed out or broken off by hand. A little time invested in young trees now will pay off big time later. *-Hirst*

Re-entry Intervals: There have been some changes in the re-entry intervals for some insecticides, particularly Guthion. For Guthion, the interval depends on the activity the person entering the orchard will be doing. The re-entry interval for summer pruning is 48 hours, while the interval for hand thinning is 14 days. The reason for the difference is the amount of physical contact one could expect with the treated crop with each activity. The re-entry intervals for other insecticides you might be using this time of year are: Imidan - 24 hours, Thiodan - 24 hours, Lorsban - 24 hours, Apollo - 12 hours, Agri-Mek - 12 hours, and Provado - 12 hours. These re-entry intervals may seem to limit your ability to get everything done that needs to be done. However, they are in place to protect the health of you and your workers. Be sure to check the re-entry intervals for all pesticides before you use them. *-Foster*

Chinese Apple-Juice Concentrate Imports Assessed 52 Percent Antidumping Duty: The U.S. International Trade Commission ruled unanimously today (May 15) that Chinese apple-juice concentrate imports are causing U.S. producers economic harm. Chinese apple-juice concentrate imports now face duties of 52 percent for being sold in the U.S. market at prices well-below production costs - a practice called dumping.

“This is tremendous news for apple growers and processors who have been economically ravaged by cheap Chinese concentrate imports for five years,” said U.S. Apple Association (USApple) President and CEO Kraig R. Naasz. “Today's unanimous final ruling should restore a level playing field and help our industry regain its financial footing.”

USApple spearheaded the U.S. apple industry's dumping complaint against Chinese

concentrate imports, which was lodged with the Commerce Department and ITC on June 7, 1999. On April 7, the Commerce Department levied final antidumping duties of 52 percent on most Chinese concentrate imports. The final duties will take effect in approximately two weeks, as soon as the Commerce Department issues its instructions to the Customs Service. In the meantime, importers are still required to pay preliminary duties of 55 percent on imported concentrate from China. The ITC, by vote of 5-0, today affirmed its July 22, 1999, preliminary injury decision that Chinese concentrate imports were causing economic injury to domestic concentrate producers.

(from The Fruitgrowers News online <http://www.fruitgrowersnews.com>)

Return Bloom Fund: This spring, Peter Hirst, Paul Pecknold and I began a long term project to investigate the feasibility of growing apples organically. Rather than converting an existing orchard to organic production, we wanted to start from scratch, with the experiment designed specifically to compare organic and conventional production systems. The study consists of eight blocks of 64 trees each planted at each of two locations, the Meigs Farm near Lafayette and the Southwest Purdue Ag Center near Vincennes. At each location, four of the blocks will be grown organically and four will be grown conventionally. Within each block, half of the trees will be Goldrush and the other half will be Priscilla, so we have a late variety and an early variety. Randy Woodson from Purdue Ag Research Program provided funds for the purchase of the trees, with the stipulation that expenses for care of the trees come from other sources. One of the sources that will initially support this research will be the Return Bloom fund. We anticipate that as the trees get closer to bearing, we will be able to secure outside funding to support the research.

A reasonable question that you might ask is, "Why should my contributions to the Return Bloom fund support research to investigate organic apple production?" Many of you may have no interest in trying to grow apples organically, which makes this an even better question. The answer is twofold. First, we believe that if we can successfully demonstrate that apples can be grown organically, more conventional growers may decide to

devote a limited portion of their orchard to satisfy the demand for organic production. Our research will include calculation of the economic feasibility of organic production, as well as the technical feasibility of controlling all the pests and producing fruit. Second, whether the overall organic system is successful, we believe that techniques that we try in the organic system will be applicable for conventional growers as well. Given the uncertain future of various pesticides, such as the organo-phosphates, we believe that it is prudent to constantly be looking for alternative methods of controlling pests. -Foster

June 5-7 - Heartland Wine School, Ohio State University, Columbus, OH. The Heartland Wine School is a joint project of Purdue University, Michigan State University, and the Ohio State University and was created in response to requests for a regional opportunity to train winery personnel in classic wine making principles. Extensive tasting sessions will complement the presentations. Register early to be sure your place is guaranteed - space is limited and will be allocated on a first-come-first-serve basis. To obtain a registration packet contact Roland Riesen, OARDC, Department of Horticulture and Crop Science, 1680 Madison Ave., Wooster, OH 44691. Phone 330/263-3685. E-mail:riesen.1@osu.edu

Coming Meetings:

June 5-7 – Heartland Wine School, Ohio State University, Columbus, OH. Contact Roland Riesen, OARDC/OSU Phone 330/263-3685. E-mail:riesen.1@osu.edu

June 6 – Eastern Indiana Horticultural Society meeting, Muncie. Contact Harold Brown (765-747-7732).

June 8 – Blueberry Grower's of Indiana Summer meeting. Dean & Diane Ott's farm on State-line road. More information to follow. Contact Melvin Van Kley 219-956-3687 or Bruce Bordelon 765-494-8212.

June 27-28 – Indiana Horticultural Society Summer Meeting. Write these dates on your calendar – more details to follow.

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