PURDUE UNIVERSITY

PURDUE EXTENSION

FACTS FOR Fancy Fruit

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In This Issue

Crop conditions

Grapes are past bloom in central and northern areas. Strawberry harvest is winding down. Raspberry and blackberry harvest will begin in the next couple of weeks or so. Apples are 20-30 mm in diameter and sizing well. Time is running short for hand thinning peaches. Sweet cherries are being harvested.

Indiana Hort Society summer meeting

As a reminder, the summer meeting of the Hort. Society is coming up in a few weeks time, June 25-26. We will be hosted by two of the outstanding agritourism destinations in the state, County Line Orchard in Hobart, IN and Fair Oaks Farms, in Fair Oaks, IN. The complete agenda was listed in the previous FFF, 2013-13-4 available here: http://www.hort.purdue.edu/fff/FFF13/FFF13-04.pdf. We will tour and discuss horticulture aspects such as varieties, rootstocks, etc, pest management, and marketing. Part of the marketing discussion will focus on the use of social media such as Facebook and Twitter to promote your farm and business, and engage customers.

All interested are invited to attend.

Improving return bloom with summer NAA sprays

Research has shown that summer sprays of NAA can be effective in improving return bloom for the following year. These sprays are not effective in all cases, but they will often help. This is especially worth trying in a year with heavy bloom and fruit set, like we have seen this year. Apply 3 applications of 5 ppm NAA (2 oz. per 100 gal. of Fruitone N) at 5, 7 and 9 weeks after full bloom. In other words, now is the time to start. Note that this is after the time that NAA has any chemical thinning effect. Phil Schwallier at Michigan State University has shown that these applications can increase return bloom from 23-53%. So if you have had heavy fruit set and haven't managed to thin as much as you wanted, this might be a useful tool to help encourage good return bloom. More information on Schwalliers research is here:

http://msue.anr.msu.edu/news/enhance_return_bloom_on_apple_varieties_by_using_summer_naa?utm_source=Fruit+Production+-+MSU+Extension+News+-+6-4-13&utm_campaign=Fruit+6-4-13&utm_medium=email

Crop control and canopy management in grapes

What a difference a year makes. Last year this time we were dealing with the effects of major frost damage. This year we have had no frost damage and the winter was mild so we have full crop potential, even on cold tender varieties. In addition, from what I have seen, there are no negative effects from last year's drought on fruitfulness. Many varieties have 3 or 4 clusters per shoot. Once we are through the critical bloom stage and shatter, we'll know how well fruit has set and be able to estimate yield and adjust crop to match the vine vigor.

Crop adjustment is made by shoot thinning and cluster thinning. Shoot thinning was discussed in an

earlier issue. It is a critical canopy management practice for most varieties and is usually done during the early season prior to bloom when shoot removal can be done by hand. Many hybrids tend to produce a large number of "non-count" shoots from adventitious buds and basal buds at count nodes. These lead to excess crop and shading in the canopy. Shoot thinning reduces excess shoot number to both adjust crop and reduce shading. Growers typically select 40-60 nodes per vine during dormant pruning.

Once the appropriate number of shoots is set (about 6 per foot of row), the next step is to determine the need for cluster thinning to adjust the crop. We generally use a crop load ratio (yield : pruning weight) of 10 as a guide for most hybrid varieties. That means the vines can produce 10 pounds for fruit for each pound of dormant cane prunings. So vines with an average of 2 pounds of prunings this spring should be able to produce 20 pounds of fruit this season AND still produce 2 pounds of prunings again next spring. That is "balance."

Growers must know their vine size (pruning weight) in order to determine how many clusters to leave. Additionally, they will need to have an estimate of the weight of the clusters to determine how much fruit to leave to hit their yield target. Since this is a normal year, you can use your previous records or refer to my publication Grape Varieties for Indiana (HO-221) for long-term average cluster weights from my trials. A count of berries per cluster is probably the best way to get an idea of the relative weight of each type of cluster, but it is more time consuming. Large clustered varieties like Vidal and Chambourcin have clusters that average about 0.4 lb each. That means that if you want produce 20 lb of fruit per vine you'll need 50 clusters, or about one per shoot. Both Vidal and Chambourcin often have 3 clusters per shoot so a significant amount of cluster removal is necessary to adjust the yield to match the vine vigor.

Shoot positioning is the next step in the process of canopy management. Varieties differ in their need for shoot positioning due to their growth habit and vigor. Some varieties such Vignoles and Chancellor tend to have a semi-upright growth habit and relatively short shoots that stand up well on their own, so shoot positioning is seldom needed. Traminette has relatively upright shoots, but they tend to be long, with large leaves so shoot positioning is very important. Other varieties such as Chambourcin, Vidal, and all the American varieties produce horizontally growing shoots that tend to run along the top of the trellis and cause significant shading of the fruit and renewal zone. Shoot positioning is very important with these varieties. The need for shoot positioning on other varieties will vary depending on vigor of the particular site. In high cordon-trained vines, shoot positioning involves pulling lateral-growing shoots off the top of the trellis to hang vertically downward. In mid-wire cordon-trained vines, shoot positioning is done by tucking shoots between sets of catch wires, or pulling catch wires up into position so that the shoots grow vertically upward. Shoot positioning is critical for improving sunlight exposure of fruit and increasing fruit quality. Additionally, it improves fruitfulness of the basal nodes on the shoots for full yield potential next year. Shoot positioning may need to be repeated two or three times during the summer.

Leaf removal is another important component of canopy management. While most commonly associated with mid-wire cordon vertically shoot positioned training systems, it can be used on high cordon trained vines as well. Removal of 2-3 basal leaves in the cluster zone anytime from 1 to 3 weeks after bloom can significantly improve fruit quality by decreasing fruit rot potential, and improving sunlight exposure of clusters. Leaf removal later is the season can be effective, but care should be taken to avoid sunburn. We generally recommend removal of leaves mainly on the east side of the rows. Our work with Traminette has shown a significant increase in important flavor and aroma compounds (monoterpenes) and wine quality scores when fruit gets partial sun exposure. (Bordelon)

Mid-season grape pest management

As we reach a few weeks past bloom, we enter the mid-season for grape pest management. At this time, there are normally few disease or insect problems of concern if good control has occurred in the early season. Growers should scout regularly now for leaf diseases and insects and act accordingly. Most varieties become resistant to black rot and powdery mildew fruit infection by 3-5 weeks after bloom, so leaf diseases (downy and powdery mildew) are the main concern. Japanese

Facts for Fancy Fruit is a newsletter for commercial and advanced amateur fruit growers. It provides timely information on pest control, production practices, and other topics likely to be of interest to fruit growers. All growers and interested persons are welcome to subscribe.

Subscriptions are $15 per year. Subscribers will receive 12-15 issues biweekly during the growing season and monthly otherwise.

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This newsletter can be accessed free at www.hort.purdue.edu/fff/.

beetle is the main insect of concern in grapes, though grape berry moth could still be a problem in some areas. Pheromone traps are very helpful in monitoring GBM populations, but scouting is the best method to monitor damage. (Bordelon)

Strawberry renovation

Matted row strawberry plantings must be renovated after harvest to establish new crowns for next year's crop. For best results, renovation should be started immediately after the harvest is completed to promote early runner formation. The earlier a runner gets set, the higher its yield potential. Growers should begin renovation as soon as the last marketable berries are harvested. Delaying renovation is one of the most common mistakes growers make. Renovation should be completed by the end of July in normal years. The following steps describe renovation of commercial strawberry fields.

1. Weed control: Post emergent application: Annual broadleaf weeds can be controlled with 2,4-D amine formulations. Check the label as only a few products are labeled for use on strawberries. e.g. Amine 4 [Dimethylamine salt of 2,4-D (3.74 lb./gal.)] at 2 to 3 pts/acre in 25-50 gallons of water applied immediately after final harvest. Be extremely careful to avoid drift when applying 2,4-D. Even though the amine formulation is not highly volatile, it can vaporize under hot, humid conditions and cause damage to sensitive plants a considerable distance from the site of application. Some damage to strawberries is also possible. Read and understand the label completely before applying 2,4-D amine. If grasses are a problem, sethoxydim (Poast 1.5 EC) or clethodim (Select 2 EC) will control annual and some perennial grasses. However, do not tank mix these materials and 2,4-D. See the Midwest Small Fruit and Grape Spray Guide and the product label for rates and especially for precautions.

2. Mow the old leaves off just above the crowns 3-5 days after herbicide application. Do not mow so low as to damage the crowns.

3. Fertilize the planting. Generally, nitrogen should be applied at 25-60 lbs/acre, depending on vigor. It is more efficient to split nitrogen applications into two or three applications at regular intervals, rather than apply it all at once. A good plan is to apply about half at renovation and half again in late August when flower bud development is occurring. A soil test will help determine phosphorus and potassium needs, but foliar analysis is a more reliable measure of plant nutrition. For foliar analysis, sample the first fully expanded leaves following renovation.

4. Subsoil: Where picker traffic has been heavy on wet soils, compaction may be severe. Subsoiling between rows will help break up compacted layers and provide better infiltration of water. Subsoiling may be done later in the sequence if crop residue is a problem or if soils are too wet at this time.

5. Narrow rows: Reduce the width of rows to a manageable width based on your row spacing, the aisle width desired, and the earliness of renovation. A desirable final row width to attain at the end of the season is 12-18 inches. Wider rows lead to low productivity and increased disease pressure. This means that rows can be narrowed to as little as 6 inches during renovation. Use a tiller or cultivator to achieve the reduction. Since more berries are produced at row edges than in the middle, narrow rows are superior to wide rows. Narrow rows will give better sunlight penetration, better disease control, and better fruit quality.

6. Cultivate: Incorporate the straw and other plant material between rows and throw a small amount of soil over the row by cultivation. Strawberry crowns continue development at the top, and new roots are initiated above old roots on the crown, so 1/2 - 1 inch of soil on the crowns will facilitate rooting. This also helps cover straw in the row and provides a good rooting medium for the new runner plants.

7. Weed control: Pre-emergence weed control should begin immediately. There are more options today than in past years. Chateau, Dacthal, Devrinol, Prowl H_2O, and Sinbar are labeled materials. See the Midwest Small Fruit and Grape Spray Guide and check the product labels carefully. Devrinol must be incorporated by irrigation, rainfall, or cultivation to be effective. Rate and timing of Sinbar or Prowl H_2O application is critical. If regrowth has started at all, significant damage may result. Some varieties are more sensitive to Sinbar than others. See the Midwest Small Fruit Pest Management Handbook for a table showing variety sensitivity to Sinbar.

8. Irrigate: Water is needed for both activation of herbicides and for plant growth. Don't let the plants go into stress. Ideally the planting should receive 1 to 1-1/2 inches of water per week from either rain or irrigation.

9. Cultivate to sweep runners into the row until plant stand is sufficient. Thereafter, or in any case after early September, any runner plant not yet rooted is not likely to produce fruit next year and can be removed. Coulter wheels and/or cultivators will help remove these excess plants in the aisles.

10. Adequate moisture and fertility during August and September will increase fruit bud formation and improve fruit yield for the coming year. Continue irrigation through this time period and fertilize if necessary. An additional 20-30 pounds of N per acre is suggested, depending on the vigor. (Bordelon)

Summer tipping brambles Tipping of primocanes is an important management practice for summer bearing blackberries and black raspberries. Tipping the new primocanes causes lateral branching and most of the fruit production next year will be from buds on those lateral branches rather than buds off the main cane. Tipping also helps increase the diameter and strengthen the main cane. Height to tip is relative to vigor. Vigorous thornless blackberries can be tipped at 40-48

inches for best results. Black raspberries should be tipped no higher than 30-36 inches to help develop a stout cane capable of supporting itself. Ideally primocanes should be tipped as they reach the appropriate height with minimal tissue removed. Just pinch or break the tip off. However, if some canes have escaped notice and are taller than desired, it's still preferable to tip at the appropriate height, even if that means removing a foot or more of cane. Tipping red raspberries and all primocane fruiting types is not recommended. (Bordelon)

Aphids

We continue to get calls about aphid outbreaks on many different crops. Growers should continue to look for the symptoms of aphid feeding, generally an inward curling of the leaves. Check within the curled leaves to make sure the aphids are still alive and also not the presence of natural enemies. Again, there are a number of good aphid insecticides available so check the spray guides. (Foster)

Spotted wing drosophila

We trapped our first adult female spotted wing drosophila in Hamilton County last week. We have traps in various locations around the state and will continue to report any catches. So far, the populations appear to be low and we have not yet seen any infested fruit. Growers can make their own traps easily by drilling small holes in a clear plastic cup (with a lid) and putting either apple cider vinegar or a mixture of four tablespoons sugar and one tablespoon of yeast in 8 ounces of water. Adding a yellow sticky card will make it easier to see the flies. Males have a dark spot on the tip of the wing and females have a ovipositor (egg laying device) on their rear end that has serrations that allow them to penetrate green fruit (see photos). (Foster)

Figure 1. Spotted wing drosophila female.

Figure 2. Spotted wing drosophila ovipositor.

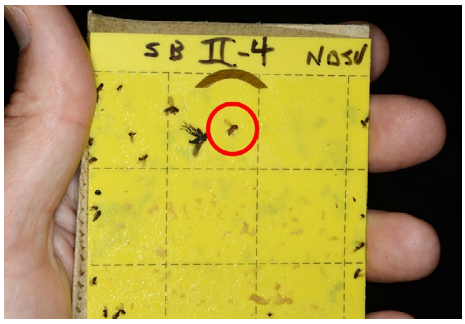


Figure 3. Spotted wing drosophila on sticky card.

Farm bill passes senate

The U.S. Senate passed the Agriculture Reform, Food, and Jobs Act of 2013, also known as the Farm Bill, on Monday, with a vote of 66-27. The bill addresses many priorities critical to United Fresh Produce Association members, including programs supporting essential research, market promotion, and nutrition, and continues their support of specialty crops that was established in the 2008 Farm Bill. The United Fresh Produce Association, a member of the Specialty Crop Farm Bill Alliance, worked closely with senators and produce industry stakeholders to secure support for several programs of particular importance to the fresh fruit and vegetable industry. "The bill supports fruits and vegetables in a way that will boost consumption and help provide healthful options to Americans — through block grants, nutrition programs, and pest and disease research," said Tom Stenzel, United Fresh CEO. "We're looking forward to working with the House to preserve funding for these critical fruit and vegetable programs." Highlights of the bill include:

Specialty Crop Block Grants funded at $70 million per year

Specialty Crop Research Initiative funded at $25 million (fiscal year 2014); $30 million (fiscal year 2015-16); $65 million (fiscal year 2017); $50 million (fiscal year 2018)

Coordinated Plant Management Program funded at $60 million (fiscal year 2014-17) and $65 million (fiscal year 2018)

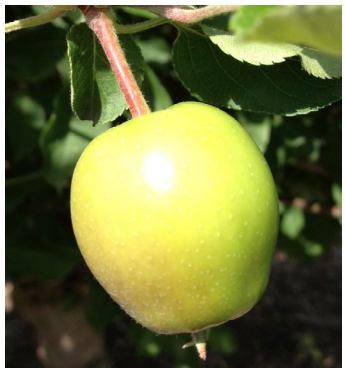
Market Access Program and Technical Assistance for Specialty Crops fully funded at 2008 Farm Bill levels

Fresh Fruit and Vegetable Program fully funded at 2008 Farm Bill levels

Section 32 specialty crop purchases funded at 2008 Farm Bill levels

Department of Defense Fresh program fully funded at $50 million per year consistent with 2008 levels

"It's gratifying to see the Senate Agriculture Committee and the full Senate restore confidence and support to the industry that has been waiting since the expiration of the 2008 Farm Bill," said Robert Guenther, United's senior vice president of public policy. "We commend the Senate for maintaining their support for programs important to the produce industry. The Senate has sent a strong signal to the House that this legislation deserves to be acted on quickly, and we encourage the House to move forward as soon as possible. United will continue to work with Congress to provide the produce industry perspective and raise awareness of the issues most important to our members." The House

Current bud stages West Lafayette, IN			
Apple	Peach	Grape	Sweet Cherry
			
at 25mm chemical thinning window closed, hand thinning underway	*hand thinning underway*	*BB to pea sized berries*	*harvest underway*
Blackberry	Blueberry	Strawberry	Raspberry
			
red berry stage	*beginning of ripening, first color*	*late harvest*	*not ripe yet*

Agriculture Committee approved their version of the Farm Bill on May 16. The full House is scheduled to consider the legislation the week of June 17. (growingproduce.com)

Good agricultural practices meeting

Brad Bergefurd will be hosting a Good Agriculture Practices educational program next week on Thursday, June 20th. This program will take place in Bainbridge, Ohio. If you are someone wanting to learn more on good vegetable practices of farming, then you will want to attend this program! The program will consist of these educational topics:

- Foodborne illness
- Contamination
- Water safety
- Soil safety
- Good handling practices
- Worker training
- Hands & hygiene
- Ideas for traceability
- On the farm records
- Standard operating procedures

Anyone attending this workshop will receive a certificate of participation.

The workshop is next week, so get registered today! To register, please contact me at the email and telephone number listed below.

Charissa McGlothin Office Assistant OSU South Centers Research & Extension, 1864 Shyville Rd, Piketon, OH 45661 740-289-2071 Ext. 132 Office / 740-289-4591

Red-fleshed apple commercialization program announced

Figure 4. Commercialization of red-fleshed apple

Proprietary Variety Management (PVM) recently announced the licensing and commercialization of a variety development

program for red fleshed apples to be grown in Washington with Stemilt Growers LLC, and Chelan Fresh Marketing. PVM will license each sub-licensee directly and work with them singularly.

The program, known as "Hidden Surprise," will start with test blocks and tree propagation under the direction of PVM affiliate, Brandt's Fruit Trees, Inc. The program also covers naming and trademark development decisions along with future marketing and promotion activities of the red-fleshed apples. The red-fleshed apple selections were developed in the tree fruit breeding endeavor by Bill Howell of Howell Fruit Advantage, LLC, of Prosser, WA. PVM, located in Yakima, WA, was founded in 2012 and works with breeders, nurseries, growers, and shipper/marketers. It is also linked to the Associated International Group of Nurseries (AIGN). Stemilt Growers LLC, headquartered in Wenatchee, WA, is the largest fruit growers, packer, and shippers of apples, cherries, and pears in the state. Chelan Fresh Marketing, LLC, in Chelan, WA, is one of Washington state's largest marketers of fresh apples, pears, and cherries.

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The Captan conundrum: Scab control vs. Phytotoxicity

Captan is a cornerstone fungicide for apples because it is very effective against apple scab and also controls summer fruit rots. Captan has long been noted for its ability to prevent scab on fruit even when scab control on leaves is less than perfect. In fungicide tests in replicated plots where we purposely used lower than recommended rates, Captan 50W at 3 lb/A has usually provided better control of apple scab than mancozeb fungicides applied at the same rate.

Fungi do not become resistant to captan because it blocks multiple biochemical pathways (i.e., it is a multi-site inhibitor). Resistance to captan can occur only if fungi develop simultaneous mutations for all of the blocked pathways, something that has not happened in the 60 years since captan was introduced.

Captan kills spores that it contacts, whereas many of our newer fungicides kill fungi or arrest fungal growth only after germ tubes emerge from the spores. As a result, when captan is applied in combinations with other fungicides in protectant sprays, captan usually does 90 to 99% of the work by killing spores on contact, thereby reducing selection pressure for fungicide resistance to the other product in the tank mix. We use tank mixes with other fungicides (dodine, benzimidazoles, DMIs, strobilurins, SDHIs) to expand the spectrum of disease control and/or to control/suppress the small amount of scab that may have escaped control from the last spray. Captan does not control powdery mildew or rust diseases, so tank mixes are needed to control those diseases even when captan alone might suffice for controlling apple scab.

Unfortunately, captan also has a dark side: it is toxic to plant cells if it penetrates into leaf or fruit tissue. Spray oil and other spray adjuvants that act as penetrants allow captan to move through the protective wax cuticle on leaf surfaces. When that occurs, we see captan-induced leaf spotting, usually on the two or three leaves on each terminal that were just unfolding at the time trees were sprayed. It takes time for cuticular waxes to develop on new leaves, so young unfolding leaves are the most susceptible to spray injury. The leaf cells directly killed or injured by captan provide entry sites for other leaf spotting fungi such as Phomopsis, Alternaria, and Botryosphaeria than can enlarge the spots. It may take five or 10 days for the injury to become visible, and by that time the injured leaves may be 5 or 6 nodes below the growing point on terminal shoots.

Captan injury on apples usually appears during the three weeks after petal fall because during that time period terminal shoots are growing very rapidly (i.e., producing lots of new leaves), and spray mixtures used at petal fall and in first and second cover sprays commonly include insecticides, growth regulators, foliar nutrients, and spray adjuvants. Captan applied alone almost never causes leaf spotting on apples. Rather, it is the other products in the tank that sometimes enhance captan uptake and trigger the resultant phytotoxicity. Increasing the number of products that are included in a tank mixture increases the probabilities that the mixture will enhance captan absorption and result in injury to leaves.

Figure 5. Leaf spotting on Golden Supreme.

Figure 6. Leaf edge burn on Mutsu.

Early last week, we became aware that, under some conditions, spray mixtures that included Fontelis and captan were triggering unacceptable levels of leaf spotting or leaf edge burn (Fig. 5: Golden Supreme; Fig. 6: Mutsu). Because orchards showing injury were always treated with spray mixtures that included more than just Fontelis and captan, we lack definitive proof that Fontelis was the key contributing factor. However, the other products in these spray mixtures had previously been combined with captan without causing noticeable injury. In Quebec, Vincent Philion noted severe damage on Spartan apple trees sprayed with a tank mix of Fontelis-captan-urea under slow drying conditions (Fig. 7).

Figure 7. Fontelis-captan-urea under slow drying conditions.

Urea in that mix may have exacerbated the captan damage, although urea-captan combinations have been used without incident in the past.

Following is a summary of our observations on injury associated with Fontelis-captan mixtures based on contributions from Vincent Philion in Quebec and crop consultants Jeff Alicandro and Jim Eve in Wayne County, New York:

1. Thousands of acres of apples have been treated with Fontelis-plus-captan combinations, and damage has been noted on only a very, very small percentage of the treated acreage.

2. Factors that seemed to increase the probability of injury were applications made under slow drying conditions (e.g., spraying at night) and applications that were made with low volumes of water (i.e., <100 gal/A).

3. Damage is primarily on leaves and is usually limited to a few leaves per terminal. In some cases, only occasional terminals show damage and the injury is very minor.

4. Cultivars vary in their susceptibility to damage, with the greatest damage being reported on Braeburn, Spartan (Acey Mac), Red Delicious, Empire, Gala, and Mutsu.

5. The unusually hot weather that prevailed throughout much of the northeast during the last few days of May might have contributed to the problem by favoring rapid terminal growth and/or by making trees more susceptible to damage via some other mechanism.

Although DuPont, the manufacturer of Fontelis, had run extensive trials to test the safety of Fontelis-captan mixtures, it is impossible to duplicate all of the tank mixtures that apple growers will ultimately use. Nor can test conditions ever duplicate all of the environmental factors that prevail during applications after products are commercialized. Thus, the discovery of occasional problems with Fontelis-captan mixtures is one of those unfortunate but perhaps unpredictable events that can occur in the process of commercializing a new product. Fontelis will remain an important apple fungicide for controlling scab and rust, especially during the time period when it can be combined with mancozeb.

It is important to note that some pathogens cause leaf spotting that is very similar to leaf spotting caused by captan injury. Rust-induced leaf spotting occurs when cedar apple rust spores germinate on apple cultivars that are resistant to rust (Fig. 8).

Figure 8. Rust-induced leaf spotting on Liberty.

The invading rust fungus soon dies due to the host incompatibility reaction, but the cells killed or damaged by the germinating rust spores provide entry points for leaf spotting fungi. Rust-induced leaf spotting can be differentiated from leaf spotting due to phytotoxicity by the fact that rust-affected leaves usually show some bright yellow-orange pinpoint spots either at the center of lesions or at other locations on the leaves where the rust spots were not followed by secondary pathogens. Frog-eye leaf spot caused by Botryosphaeria obtusa can also cause severe leaf spotting, but distribution of this disease is very uneven within trees, with most infections occurring below over-wintering fruitlet mummies that supplied the inoculum.

Finally, pesticides other than captan can also cause leaf spotting and/or leaf burn. Sulfur and liquid-lime sulfur can cause damage when applied ahead of hot weather and/or if mixed with or applied close to oil sprays. Last year, Topguard fungicide caused a leaf-edge burn when applied to Cortland trees in my test plots that had recently been treated with streptomycin plus Regulaid. Topguard injury has reportedly been observed on Braeburn when sprays were applied with enough water to allow droplets to accumulate on leaf edges.

Defining the exact cause of phytotoxicity on apple leaves is often difficult. However, we know that special cautions are required when applying captan because it has a demonstrated record of causing phytotoxicity to leaves if oils, adjuvants, or carriers in other pesticides enable captan to penetrate into leaves.

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Upcoming events

June 25-26, 2013.
Indiana Hort Society Summer Meeting. County Line Orchard and Fair Oaks Farms. See previous issue of Facts for Fancy Fruit for schedule and full information, http://www.hort.purdue.edu/fff/FFF13/FFF13-04.pdf. All are welcome to attend. For more details contact Peter Hirst, hirst@purdue.edu

August 19-21, 2013.
Midwest Produce Conference and Expo. Hyatt Regency Chicago. Chicago, IL. For more information and to register go to, http://www.midwestproduceexpo.com/

January, 21-23, 2014.
Indiana Horticultural Congress and Trade Show, Wyndham Indianapolis West, Indianapolis, IN.
http://www.inhortcongress.org

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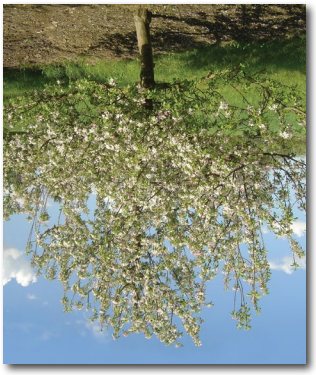

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