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Crop conditions:

From cool to hot and now to flooded! Summer is definitely here and fruit crops are responding accordingly. Grapes are at shatter to bunch closing, depending on variety and location. Raspberries harvest is underway in central and northern areas. Blueberry harvest is well underway in southern areas and is getting started in the main northern production areas. Strawberry harvest is over in most areas across the state and renovation has begun.

Rain! Yep, we all know what rain looks like now. Just to put this in perspective, I looked up the rain received in a few places across the state and compared it with the long term average. The following data are in inches of rain:

Location	June 03	June average	July 03 so far	July average
LaPorte	2.38	4.44	2.41	3.79
Kendallville	2.51	3.99	3.33	4.05
Indianapolis (SE)	2.46	4.14	2.23	4.78
Vincennes	4.49	4.05	0.57	4.67
North Vernon	5.01	3.82	0.06	4.12

It appears that from Indianapolis and above, we were quite a bit behind normal in rain received in June. Only a week into July and we're well on the way to being average or above average for the month. Southern parts of the state show exactly the opposite trend. Above average for June but well behind average so far in July. Obviously the storms causing damage in the northern parts of the state have missed southern Indiana. (Hirst)

New Fruit and Vegetable Website: A new comprehensive website with fruit and vegetable information is now online. With funding assistance from the Office of the Commissioner of Agriculture, we have developed this site as a central point for fruit and vegetable information, not only from Purdue, but also linking other useful information from across the US and around the world. The address is <http://www.hort.purdue.edu/fruitveg>

Keep in mind this is a work in progress, and will be continually developed and improved, so check back often for updates and additions. We would also welcome your feedback on this site

While we are talking about using the internet to exchange information, we also have 2 list-serves up and running. These are basically electronic discussion rooms. They are primarily intended for Indiana producers and industry personnel, and are free to anyone to join and participate in. The way it works is that you subscribe (by email) and then send an email in with a question or statement that all other subscribers receive as an email. Some of the types of questions may include things like:

- I am short of Red Delicious this year – anyone have any to sell?
- I'm looking to buy a new mower and am thinking about buying an xxx brand – has anyone has experience with this or have a used one to sell?
- How is your blueberry harvest going so far?
- How does the fireblight look this year?

OK, so you get the picture. This is a good way to overcome the geographical dispersion of growers over the state. Please do not post personal messages, and no commercial sales please. We don't intend to step in and impose too many limitations on messages, but we'll see how it goes and will act if we need to.

For more information on the "fruitveg" and winegrape" lists, and how to sign up, look at Facts for Fancy Fruit, 2003-05 (Hirst)

Brown Rot Warning: A first warning for severe brown rot of stone fruits (apricot, nectarine, peach, cherry, plum). Warm, wet, humid weather is particularly favorable for this fungus disease. Also, as fruit softens during the ripening process, it becomes much more susceptible to brown rot. Pre-harvest sprays for brown rot should be started no later than 3 weeks before harvest or when fruit begins to color. For information on fungicides and timing of spray applications see ID-168, "2003 Indiana Commercial Tree Fruit Spray Guide." In addition to maintaining sprays for brown rot, also maintain sprays for plum curculio and other insect pests that may injure fruit and allow brown rot to gain a foothold. Use care in the picking and handling of fruit to avoid punctures and skin abrasions. Any break in the skin of the fruit

enables brown rot to more easily cause infection. Brown rot can be especially severe where trees are planted closely and/or where woods surround the orchard. Such conditions reduce air movement, and dew or rain evaporates more slowly, leading to possible disease outbreaks. (Pecknold)

Necrotic Leaf Blotch On Golden: Generally we first start noticing necrotic leaf blotch (NLB) on Golden Delicious in late June or July, when the weather becomes hot and sticky. Symptoms of NLB are leaf yellowing and drop; often patches of brown blotches develop along with leaf yellowing. Symptoms develop suddenly, almost overnight, and in waves, generally from June through August. The cause of NLB is not known; however, the disorder is thought to be related to air temperature, light intensity and soil moisture. It is most severe when a cool, rainy period of 4 - 5 days precedes several hot, sunny days. Although it appears NLB is not fungal caused, the disease is reduced when ziram is included in the cover sprays. (Pecknold)

Potato Leafhopper – We have been seeing lots of potato leafhoppers in orchards, vineyards, and other crops. The symptoms of damage on most crops is yellowing and curling of leaves. Ideally, you would want to control the leafhoppers before you start to see symptoms, because once symptoms are apparent, you have already suffered loss. Growers should be scouting fruit and vegetable (potato, snap bean) crops for leafhoppers. Excellent control can be achieved with several available insecticides including Danitol, Avaunt, Dimethoate, Agri-Mek, Asana, Provado, and others. Make sure that the insecticide you choose is labeled for the crop(s) you are treating. (Foster)

Codling Moth – We continue to catch codling moths in pheromone traps, although the catches are considerably lower than they have been with catches of 0-4 per trap per night. Below are listed the percentage of damaged fruit that we found in two experiments conducted at the Hort Farm and at Tuttle's Orchard. Each chemical was applied three times at 14-day intervals and the evaluation was done 2 weeks after the third spray.

Tuttle's Orchard

<u>Treatment</u>	<u># Fruit</u>	<u>% Damage</u>
Guthion	702	1.25 a
Assail	800	2.00 a
Calypso	775	2.48 a
SpinTor	677	3.11 ab
Danitol	793	3.66 ab
Intrepid	750	5.58 bc
Esteem	800	5.88 bc
Avaunt	680	7.31 c
Untreated	750	8.29 c

Hort Farm

<u>Treatment</u>	<u># Fruit</u>	<u>% Damage</u>
Danitol	500	0.60 a
Guthion	500	0.80 a

Intrepid	500	1.20 a
Assail	500	1.80 a
SpinTor	483	2.66 a
Calypso	482	3.13 a
Avaunt	468	3.25 ab
Esteem	447	6.15 b
Untreated	500	16.60 c

Obviously, in both of these trials, Guthion continued to work well. The two products that impressed me the most were Danitol and Assail. Intrepid and SpinTor were also effective in both trials. Calypso is not yet labeled for use on apples.

We also tested MEC-CM sprayable pheromone for codling moth control in an adjacent block of trees at Tuttle's. When we checked 600 fruit from that block, an average of 4.17% of the fruit were damaged. This block received an insecticide at petal fall for plum curculio control, and no other insecticides. The results compare favorably with those achieved with some of the insecticides. At the Hort Farm, we tested LastCall-CM attract-n-kill material. The results were not as good, with 7.7% of the fruit infested, but remember from the insecticide trials that the damage in the untreated trees was twice as high at the Hort Farm as at Tuttle's.

My colleagues in Missouri, Illinois, Kentucky, and Ohio are replicating all of these studies. We will be pooling our data as we collect it to get a better idea as to how these products work in different situations. More to come. (Foster)



European Red Mites – We are starting to get calls about outbreaks of European red mites. In my studies here at Purdue, the numbers increased dramatically over the past week. Growers should be looking for increasing populations of mites in their Red Delicious apples or wherever they typically see mite problems show up first. At this point, it is too late to use Apollo, Savey, or Agri-Mek. The best choices available to clean up a problem are Pyramite and Acramite. Pyramite has consistently done an excellent job as a rescue treatment, although it is somewhat hard on predator mites. I have less experience with Acramite, but my research and the reports I have received from growers indicate that it also works well, and may have less effect on predator mites. (Foster)

Cane Borers – I have received several reports of cane borers in raspberries, especially in the southern part of the state. There are two primary species of cane borers. The raspberry cane borer attacks the tips of the canes, and may bore all the way down to the base. The damage usually shows up in June as wilting tips. The best cultural control at this point is to prune out the wilting tips to several inches below the symptoms and destroy those prunings. The red-necked cane borer generally attacks closer to the base of the plant and the infested canes form galls that show up in July and

August. The infested canes should be pruned out in late fall or early spring. Insecticidal control should be done just before bloom, so it is too late to use insecticides for this year. (Foster)

More on Grape Leaf Phylloxera: I continue to get calls about the leaf or aerial form of phylloxera on grapes. In evaluating our plots I find that infestation is especially severe on Frontenac, St. Croix and a few other varieties with *Vitis riparia* in their background, but can be found on almost any variety. The life cycle of phylloxera is complex. The overwintering eggs hatch in spring and the larvae form galls on lower leaves before bloom where they feed until they mature and lay eggs. The eggs hatch at about the time grapes bloom and the larvae (or crawlers) leave the galls and migrate to the shoot tips where they form new galls on the young leaves. Sprays are timed to control this main crawler stage while they are out on the leaf surface rather than inside a gall where insecticide applications are ineffective. Later in the season, these individuals give live birth to new crawlers that migrate to more new leaves and form additional galls. Several of these generations can occur each year. While late season control is usually considered futile, I noticed just recently that some of the galls on the older leaves still contain eggs and live larvae. This fact plus the fact that there are a number of other insect pests on grapes right now, suggest that Danitol might be a good option in the next spray. See the related article on insect management. (Bordelon)

Insect Management on Grapes: With the abundance of phylloxera this year, we've almost forgotten about the other insect pests of grapes. Japanese beetles have emerged in full force in the Lafayette area. We've also seen considerable infestation of potato leafhopper on grapes this year as well and second generation grape berry moth stings are quite common. Based on the wide range of pests attacking grapes at this time, growers might want to consider an application of Danitol in the next cover spray. Danitol is not only effective against berry moth, leafhoppers and Japanese beetle, but it is one of the only products that will control grape phylloxera. (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. Renovation should be completed by the end of July in normal years. Harvest is winding down across the state so growers should begin renovation as soon as the last marketable berries are harvested. The following steps describe renovation of commercial strawberry fields.

1. **Weed control:** 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. Formula 40 [2,4-D alkanolamine salts plus 2,4-D Triisopropanolamine salt (4 lbs./gal.)] or 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 volatilize under hot, humid conditions and can cause damage to desirable 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) will control annual and some perennial grasses. However, do not tank mix Poast and 2,4-D. See ID 169 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.** 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. 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.
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 roto-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:** Work in straw 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. Dacthal, Sinbar or Devrinol are suggested materials. See ID-169 and check the product labels carefully. Devrinol must be incorporated by irrigation, rainfall, or cultivation to be effective. Rate and timing of Sinbar application is critical. If regrowth has started at all, significant damage may result. Some varieties are more sensitive to Sinbar than others. If unsure, make a test application to a small area before treating the entire planting. Use 2 to 6 oz/acre/application and no more than 8 oz/acre/year total. Sinbar should not be used on soils with low organic matter, or on sensitive varieties like Guardian, Darrow, Tribute, Tristar and possibly Honeoye. If Sinbar gets onto strawberry leaves, irrigate to wash it off.
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 is essentially a weed and should 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)

How much should you charge? Jane Eckert, of Eckert Agrimarketing has the following advice.

“How much should I charge for admission?” I am often asked this question, but I do not have a one-size-fits-all answer. For example, farms in urban areas tend to charge higher admission fees because their customers are used to paying more for entertainment. It also depends on how much you offer in terms of entertainment and activities.

The two critical questions to ask are:

1. Am I giving enough value for what I am charging?
2. Am I charging enough for what value I am providing?

You need to consider the following about your fees:

- Number of activities offered

- Special activities included (such as wagon ride or miniature golf)
- Special attractions included (such as small corn maze)
- How long a guest typically stays for entertainment
- Types of festivals and festival events

The more you include, the more you can charge. Do some research. Check out the websites of different NAFDMA (North American Farmers' Direct Marketing Association) members to see what they're charging and what they're offering. Look at other family entertainment destinations near you for an idea of what they charge.

The best way to find out whether you're charging the right fee is to ask the people who know best: your customers!!! Pick a busy weekend to survey customers as they are leaving the farm. Keep it short and simple:

What activities do you like best?

Do you feel the price of admission was worth the value of the entertainment? (If not, how much would you be willing to pay?)

Would you pay more for admission? (If yes, how much?)

What changes would you suggest to improve the farm experience?

Based on the responses, you will begin to see a pattern and know whether your customers are satisfied with the value they're receiving. If not, you can make a change.

If you do decide to increase your admission, remember that your regular customers will most likely not be happy with the change. Be sure to have good signage indicating the new price, along with all the activities the admission. Train your staff how to respond to upset customers. For example, "I am sorry you are upset with our fee, but with the number and variety of activities we offer, it is still a very good value for family entertainment."

For more information, look at the Eckert Agrimarketing website, www.eckertagrimarketing.com (reprinted with permission of Jane Eckert, Eckert Agrimarketing)

ASEV-ES Annual Meeting: The 2003 American Society for Enology and Viticulture/Eastern Section conference will be held July 8-11 in Corning, NY Raddison Hotel. The program is now available online at www.nysaes.cornell.edu/fst/asev. A pre-conference tour of the Finger lakes will be held on Tuesday July 8. The Symposium title this year is Wine Closures – Put a Cork in It? and will provide a complete coverage of issues relating to wine bottle closures. The ASEV-ES technical session begin Thursday afternoon and the conference concludes Friday evening. For details and to download the registration forms please check the web site.



Indiana Winegrowers' Guild Summer Meeting:

The Indiana Winegrowers' Guild will hold its summer meeting Aug. 11 at Butler Winery and Vineyard, 6200 E. Robinson Road in Bloomington. For a map and directions to the vineyard see <http://www.butlerwinery.com>. The general meeting will start at 2 pm and will include a vineyard tour with Jim Butler and Bruce Bordelon. At 3 pm Ellen Harkness will host a blind tasting of Vidal wines from across the eastern U.S. This will be the first of a continuing series of blind tastings focused on grape varieties currently grown in Indiana, or that have potential for Indiana. Indiana wineries are urged to bring any Indiana grown Vidal wines they would like to have included in the tasting. The Business meeting will follow the tasting at 4:30 pm, which should make for some lively discussion. Dinner will be served for those wishing to stay and enjoy the evening watching the deer feeding on Jim's grapes. Dinner cost will be \$10. Please call Butler Winery at 812-339-7233 to reserve a dinner ticket. We need to know how many to expect for dinner.

Apple Crop Outlook and Marketing Conference:

The US Apple Association is hosting this years conference once again at the Fairmont Hotel in Chicago. The conference runs August 21-22. This is a top level conference on what is happening in the apple industry in the US and around the world. Registration is \$325 for USA Apple members and \$575 for non-members. For a list of speakers and more information, look at: <http://www.usapple.org/industry/outlookconference/>

Upcoming meetings:

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| July 8-11 | American Society for Enology and Viticulture-Eastern Section conference. Corning, NY. Contact www.nysaes.cornell.edu/fst/asev . |
| Aug. 11 | Indiana Winegrowers' Guild Summer Meeting. See note above for information. |
| Aug. 21-22 | Apple Crop Outlook and Marketing Conference, hosted by the US Apple Association. See above for more information. |

Department of Horticulture &
Landscape Architecture
Purdue University
625 Agriculture Mall Drive
West Lafayette, IN 47907-1165

Bruce Bordelon
Dept. of Horticulture &
Landscape Architecture
Purdue University
625 Agriculture Mall Drive
West Lafayette, IN 47907-1165
765/494-1301
e-mail: bordelon@hort.purdue.edu

Peter Hirst
Dept. of Horticulture &
Landscape Architecture
Purdue University
625 Agriculture Mall Drive
West Lafayette, IN 47907-1165
765/494-1323
e-mail: hirst@hort.purdue.edu

Paul Pecknold
Dept. of Botany & Plant Path.
Purdue University
915 West State Street
West Lafayette, IN 47907-1155
765/494-4628
e-mail: pecknold@purdue.edu

Rick Foster
Dept. of Entomology
Purdue University
181 Marsteller Street
West Lafayette, IN 47907-1158
765/494-9572
e-mail: Rick_Foster@entm.purdue.edu

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