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**FFF00-01**  
**March 8, 2000**

**Crop Conditions:** With the 2000 growing season coming up, it is time to review the 1999 season and see what we expect for fruit crops across Indiana this year. We've had another La Nina winter with a very warm and dry fall. Winter started in late December and by late January had set in solidly. Sub-zero temperatures were reported across the northern and central parts of the state. The coldest spot in the state was Richmond that reported  $-17^{\circ}\text{F}$  on January 28. We recorded  $-12^{\circ}\text{F}$  at West Lafayette on the 21st. Most of the southern 1/3 of the state was warmer with lowest temperatures reported as  $-2^{\circ}\text{F}$  at Terre Haute,  $-1^{\circ}\text{F}$  at Bedford,  $0^{\circ}\text{F}$  at Seymour,  $3^{\circ}\text{F}$  at Oolitic,  $2^{\circ}\text{F}$  at Vincennes, and  $9^{\circ}\text{F}$  at Mt. Vernon. These temperatures were not in the range that we normally expect to cause significant damage to fruit crops so we should be in good shape this year. That being said, the unseasonably warm temperatures for the past three weeks may be of concern to many. Fruit crops have received their chilling requirement and some crops such as blackberries, raspberries, and peaches are quick to respond to warming temperatures. These crops are losing their cold hardiness (deacclimating) and beginning to break dormancy. They could be severely damaged if seasonable March temperatures return e.g. if we have temperatures in the low teens or single digits. Other crops such as apples and blueberries are also losing cold hardiness and even though their bud development won't be as advanced as the others, they could also be damaged by the return of cold temperatures. Let's all keep our fingers crossed that no severe cold will occur between now and May.

**Pasteurization of Cider:** There is good news for those interested in UV pasteurization of cider. The Indiana State Department of Health have given the green light to the use of one UV system, the CiderSure Model 3500. The conditions of use include being in possession of documents validating that this model is capable of achieving a 5-log reduction of pathogens, and the validation papers for the ultraviolet tubes must match the numbers on the tubes.

We are pleased with this approval as it offers growers an alternative to higher priced heat pasteurization systems. So far there has not been a final rule announced by the FDA for HACCP this season, so at this point we're not sure what the rules will be. For further information concerning the use of UV systems, contact Shirley Vargas at the State Department of Health (317-233-1325) or Peter Hirst at Purdue. -Hirst

**USDA Apple Juice Purchases:** The USDA has recently announced it is purchasing nearly 1 million pounds of canned apple juice, 3 million pounds of canned apple slices and 5.5 million pounds of canned apple sauce. These products will be distributed to the child nutrition and related domestic food assistance programs. This purchase follows a request from the US Apple Association that the USDA purchase significant quantities of processed apple products. While I doubt that growers in Indiana will directly benefit from this, the removal of a significant quantity of processed products from the market is likely to help out in terms of reducing market supply. This has the potential to increase the price for processing grade apples. -Hirst

**New Zealand Tour:** The fruitgrowers tour of New Zealand is less than a year away. We're scheduled

to leave late February next year. To help me put together a program that will suit the most people, I have a brief survey of options that I would like some feedback on. This short survey is anonymous, and by taking part you are not committing yourself to going. Please let me know by email, phone or regular mail if you are even considering this trip, and I'll send you a copy of the survey. I feel confident that we can put together a tour that is both educational and fun. -*Hirst*

***Pruning Grapes:*** Winter injury in grapes this year should be minimal. However, there is likely to be some damage on cold-tender varieties. You should assess bud damage prior to pruning so that adjustments in the balanced pruning formula can be made based on the amount of bud loss. Typically, if less than 25% of the buds are damaged you can prune normally. If 25-40% of the buds are damaged then you'll want to adjust the number of buds retained accordingly. For example, if 40% of the buds are damaged then 60% are live. If you need 40 buds per vine for the proper crop load then you'll have to leave 68 buds to end up with 40 primary shoots. To determine how to adjust the bud number multiply the inverse of the % live buds ( $1/.60$ ) times the desired number of buds ( $1/.60=1.7$ ;  $1.7 \times 40 = 68$  buds). If more than 40% of the buds are damaged then you'll probably want to do minimal pruning now and wait until after budbreak to determine where live buds occur in order to have an adequate number for balancing the vines.

Spring freeze damage can also be a significant economic problem for grape growers. A technique called long pruning or double pruning helps avoid spring frost and freeze damage, especially on varieties that tend to bud out early. The procedure utilizes the apical dominance of buds on the cane. The first buds to begin growing are those on the tip of the cane, while buds closer to the base begin growth later. This type of pruning is only applicable to spur or no-tie training systems. To perform long pruning, select canes to be used for fruiting spurs during the normal pruning practice, but leave those canes long, with 10-15 more buds than desired. Spurs are normally pruned to 5 or 6 nodes for fruiting, but if they are not cut back, then the extra buds will help delay the development of the desired basal 5-6 buds, which helps avoid frost injury. After the date of the last probable spring freeze has passed, the canes are shortened to the

desired length to properly adjust the bud number for the vine. Growth of the basal buds can be delayed by as much as two weeks if weather conditions are favorable. While this procedure requires an extra trip through the vineyard, it can mean the difference between a full crop and little or no crop. -*Bordelon*

***Pruning Brambles:*** This is a good time to finish pruning summer-bearing brambles. Last years fruited canes should be removed now if they were not removed last summer or fall. Remove weak or spindly floricanes and thin to 2-4 canes per foot of row. Laterals on blackberries and black and purple raspberries should be trimmed back to about 2/3 to 3/4 of their original length to promote flowering on strong wood. Red raspberry canes can be tipped if desired, but should not be tipped more than 1/4 of the cane length. If the planting is trellised, the canes should be tied to the wires now before growth starts. Fall bearing types should be mowed to the ground before growth begins. Remove and destroy the prunings to help prevent anthracnose. -*Bordelon*

***Pruning Blueberries:*** Spring is the best time to prune blueberries. Winter injured wood is easily identified and should be removed. Try to establish an even number of canes of various age classes. A well-pruned blueberry bush should have about 15-25 canes (depending on age, cultivar and growth habit) with approximately 1/3 in the 5-7 year-old class, 1/3 in the 2-4 year-old class, and 1/3 new canes for renewal. Pruning should open the center of the bush to encourage new cane growth, and promote an upright growth habit by removing low, drooping branches. Detailed pruning to remove weak growth in the tops of the canes will reduce the number of fruit and improve fruit size. -*Bordelon*

***Pheromones and Pheromone Traps:*** One way insects communicate with individuals of the same species is with pheromones. Pheromones are volatile chemicals released by an insect that usually can be detected only by individuals of the same species. There are a number of different types of pheromones, but the most common type is the sex pheromone. Usually the females will emit a tiny amount of a chemical that attracts the male to her and increases the likelihood of mating. Be-

cause the chemical is volatile, air currents carry it. The male detects the pheromone in the air with receptors on his antennae. He then flies upwind to find the source of the pheromone, a prospective mate. The chemical compositions of pheromones for a number of pest species have been identified and synthetic copies can be produced in the laboratory. Synthetic pheromones can be used in conjunction with traps to catch male insects.

There are a number of fruit pests that can be monitored with pheromone traps. For growers who have not used traps before, I suggest starting out by trapping for codling moth, spotted tentiform leafminer, or peachtree borers. As you gain experience with the traps and learn how they can improve your pest management practices, you may want to begin trapping for additional pests.

Monitoring with pheromone traps lets you know when the insect is active. This allows you to better time control practices or, in some cases, to determine if control is even necessary. If you choose to control spotted tentiform leafminers with sprays targeted at the adults, having pheromone traps will help you know when the moths are flying in large numbers. For codling moth control, we can use a combination of pheromone trap catches and degree day accumulations to better time sprays. This will be covered in more detail when we get closer to time of codling moth flight.

Listed below are some, but certainly not all, of the suppliers of pheromones and traps.

**Consep Membranes, Inc.;** P. O. Box 6059; Bend OR 97708; 503-388-3705

**Gempler's;** P. O. Box 270; 211 Blue Mounds Road; Mt. Horeb, WI 53572;  
800-382-8473

**Great Lakes IPM;** 10220 Church Rd., NE; Vestaburg, MI 48891; 517-268-5693

**Insects Limited Inc.;** 10505 N. College Avenue; Indianapolis IN 46280-1438;  
317-846-3399

**Pest Management Supply Co.;** P. O. Box 938; Amherst, MA 01004; 800-272-7672

**Scentry Inc.;** P. O. Box 426, Dept. MPI; Buckeye, AZ 85326-0090; 602-233-1772

**Trece Incorporated;** P. O. Box 6278. 1143 Madison Lane; Salinas, CA 93912;  
408-758-0205

*-Foster*

**FQPA Update:** The long awaited FQPA ax has begun to fall. Last August, the EPA announced that the registrants had voluntarily withdrawn all fruit uses for methyl parathion (Penncap M). That means that in 2000, Penncap M can no longer be used on fruit crops. Several years ago, we conducted a pesticide use survey on apples, peaches and blueberries. The results showed that not a single grower who responded to the survey reported using Penncap M. This would lead us to believe that the loss of Penncap M will have minimal impact on Indiana fruit growers. If you used Penncap M but did not return the survey, you missed your opportunity to influence the decision making process. It's very difficult for me to argue that we need to keep a product when the surveys show that nobody uses it. In the future, please make every effort to complete and return surveys. The data we collect from these studies is an important part of the decision making process.

The EPA also announced some additional restriction on the use of azinphosmethyl (Guthion). The tolerance, which for pome fruit was 2.0 parts per million (ppm), will be 1.5 ppm in 2000 and 1.0 ppm in 2001. This means that the amount of residue allowable on the harvested fruit can only be half as much in 2001 as it was in the past. The restricted entry interval (REI) has been set at 48 hours for all activities except hand thinning or hand harvesting, for which the REI is 14 days. For apples, rates can only exceed 2 lb. per acre if used in conjunction with an IPM program, which could include biological control, scouting, or the use of alternative chemicals. The pre-harvest interval (PHI) for apples is 14 days, unless the rate of the last application was greater than 2 lb. per acre, in which case the PHI is 21 days. You must allow at least 7 days between applications and can only use 9 lb. of 50W per acre per season. For peaches, the PHI is 21 days and the interval between sprays must be at least 14 days. Peach growers are limited to a maximum of 6.75 lb. of 50W per acre per season. Be sure to read the new label carefully before spraying azinphosmethyl on any fruit crops.

A number of other organophosphate insecticides, including Imidan and Lorsban, are under review now. It is unlikely that any decision made regarding these products will affect your use of them for this season. Watch Facts for Fancy Fruit for future developments. *-Foster*

**Consider IPM:** As the previous article states, FQPA has begun to have an effect on the choice of insecticides available to fruit growers. Future FQPA decision will undoubtedly further limit insecticide options. One way to reduce your reliance on these insecticides is by adopting the use of Integrated Pest Management or IPM. IPM is the use of all possible methods to manage pests, not just relying on pesticides. For insects, this may include such practices as proper pruning to allow spray penetration, conserving natural enemies, or using pheromone traps to better time sprays. Many of you are using some IPM practices already. Below are several suggestions that you might consider adopting.

1. If you have not already, purchase the *Midwest Small Fruit Pest Management Handbook* and/or the *Midwest Tree Fruit Pest Management Handbook*. These relatively inexpensive books are full of suggestions for improving your pest management.
2. Are you applying a dormant oil even if you are using Apollo or Savey? Oil will also reduce scale and aphid problems, and will delay the development of resistance to Apollo and Savey.
3. Consider using pheromone traps this year for at least one of the insects for which pheromones are available (see previous article).
4. Consider how various cultural practices affect insect pests. For example, tarnished plant bugs and stinkbugs are usually more serious problems when certain weeds are allowed to form a seedhead. Are you controlling weeds to prevent insect problems?
5. When growers call me about an unusual pest problem, it is not uncommon that when I propose a solution, the grower asks, "What will that do to my predator mites?" When growers think that way, it shows that they have really bought in to the IPM philosophy. Before making spray decisions, do you ask yourself "What affect will this spray have on natural enemies, such as predator mites?" Pyrethroid insecticides can provide excellent control of several pests, but is it worth it to kill all your predators?
6. Before you make an insecticide application, do you know for sure what the target insect is? If you apply an organosphosphate to apples early in the season, are you attacking a specific

insect with that spray? If scales have not been a problem, then you can probably get by without that spray. If you are in the southern part of the state where apple maggot is not a concern, you may be able to skip a cover spray or two if you know when codling moths are active (by using pheromone traps).

7. Are you scouting for mites on your apples at least every two weeks beginning after petal fall? Blocks that had very few mites last year probably will not need an application of Apollo or Savey this year. Blocks that had a fairly high population last season may well require an early season miticide application. But, if you didn't scout, you won't know for sure.
8. Are you scouting for aphids, scales, leafminers, leafhoppers, and other insects that don't necessarily occur every year? Are you using thresholds to make spray decisions?
9. Is your sprayer properly calibrated? Putting on too much insecticide could result in illegal residues and putting on too little could result in poor control or the development of resistance. Be sure you are applying the right amount of insecticide.

If you can find a way to reduce your insecticide use with IPM, it may save you some money, it may conserve some natural enemies that help keep other pests under control, and it will allow you to tell those curious customers that you are using the latest scientific information to minimize the amount of insecticides necessary to produce a marketable crop. Now is a good time to think about how you could possibly upgrade your IPM practices. If you have specific questions, don't hesitate to call or email me. -Foster

**Blueberry Promotion Referendum:** Voting on a referendum to decide on the establishment of a national blueberry promotion program will be March 13 through March 24. Eligible blueberry producers and importers will decide the fate of the proposed national promotion, research and information program during that time according to the Agricultural Marketing Service. The program, proposed by the North American Blueberry Council (NABC), is designed to help increase sales among the nation's more than 2,000 cultivated blueberry growers and importers in response to increased production which has occurred in recent years, coupled with the aggressive competition in

the marketplace. Approval of the order will take place under these conditions. First, the majority of the blueberry producers and importers voting in the referendum must approve the order. Second, the combined production and imports of those producers and importers must exceed 50% of the total volume of blueberries imported and produced by the voters in the referendum.

AMS will mail ballots, voting instructions and a summary of the proposed program to all known eligible blueberry producers and importers. Those who believe they are eligible to vote and who do not receive a ballot should contact Oliver L. Flake, the referendum agent, by calling (888) 720-9917; fax (202) 205-2800; or email [Oliver\\_Flake@usda.gov](mailto:Oliver_Flake@usda.gov). The proposed order was published in the Feb. 13 issue of the Federal Register. It can be accessed at [www.ams.usda.gov/fv/rpb.html](http://www.ams.usda.gov/fv/rpb.html).

**Child Labor Restrictions:** A new state law (Public Law 234-1999, House Bill 2051) provides that the employer of a child who is at least 16 years of age and less than 18 years of age must have parental consent on file in the employer's office for the child to work: (1) up to 40 hours per week during school weeks; and (2) 48 hours per week during a nonschool week. The child must also have an employment certificate from an accredited school. There are other provisions that may be of interest to fruit producers. For more information contact the Indiana Department of Labor Child Labor Bureau at 1-888-TEEN WORK. A copy of the bill can be found by searching the state web site at [www.state.in.us/state/index.html](http://www.state.in.us/state/index.html).

**2000 Spray Guides:** The revised 2000 Commercial Tree Fruit (ID-168) and Commercial Small Fruit and Grape (ID-169) Spray Guides are now available. The new issues contain the latest pesticide label information available at printing time but, as always, you should read and follow the label directions. Several changes have occurred this year and all commercial growers should have a copy of the revised versions. The spray guides will be available at the regional meetings, through your local Cooperative Extension office, or directly from Agricultural Communication Service, Media Distribution Center, 301 South 2nd Street, Lafayette, IN 47905-1092. 1-888-EXT-INFO. (1-888-398-4636). The current version of the Small Fruit and Grape Spray Guide is also available on

the web at: <http://www.hort.purdue.edu/hort/ext/sfg/>. Any changes in pesticide registrations that have occurred since printing will be listed under a special button on that web page.

**New Bramble Publication:** Ohio State University has revised its popular publication Brambles-Production, Management and Marketing (Bulletin 782). It is a complete source of information on brambles in an easy to read text with many full color pictures to guide the grower toward the knowledge that is needed for making pre-production decisions. Production economics, cost of refrigeration, and rates of return for different marketing systems are also discussed. The bulletin is available from Media Distribution, Ohio State University Extension, 2021 Coffey Rd. Columbus, OH 43210-1044, or call 614-292-1607, or email [Pubs@postoffice.ag.ohio-state.edu](mailto:Pubs@postoffice.ag.ohio-state.edu). For single copies, please send a check for \$10.00 (\$6.50 plus \$3.50 shipping/handling) to the address above. Please make check payable to The Ohio State University.

**Imidan Under Threat:** The EPA are reviewing Imidan. There doesn't seem to be a problem regarding residues in fruit, but the EPA are looking at increasing the restricted entry interval (REI). The REI of Imidan is currently 24 hours, but think about operating your farm if this was increased to say 14 days. If you have thoughts on this and would like to influence the process, now is your chance. Comments can be sent in up to 60- days after February 10, which takes us up until April 10. If you decide to voice your opinion, you may want to address the following points:

- The importance to running your farm of keeping the REI at 24 hours
- After using Imidan for x years on your farm, has there been any increased illness in farm workers or other adverse effects on personnel
- If you have not noticed any effects on non-target organisms since you have been using Imidan, then spell this out
- If you have a pond on your farm and have not noticed any adverse effects on fish (such as no dead fish that you have seen) or other wildlife, then tell them this also

You may send your comments to (send 3 copies of your letter):

US EPA  
OP Pesticide Docket (7502C)  
401 M Street SW  
Washington, DC 20460

Or you may email comments to:  
[Opp-docket@epa.gov](mailto:Opp-docket@epa.gov)

If you have questions, the person at the EPA to contact is Diane Isbell, phone 703-308-8154, email [isbell.diane@epa.gov](mailto:isbell.diane@epa.gov)

If you have opinions on this issue, make them heard. Now is your chance.

***Return Bloom Fund:*** At a recent meeting, the board of the Indiana Horticultural Society decided to rename what was previously known as the apple check-off – it is now “The Return Bloom Fund”. The change was made to more accurately describe the purpose of the fund, which is to further the development of the apple industry in the state by supporting tree fruit research and extension activities at Purdue. As we all know in fruitgrowing, return bloom is all about doing something today to plan for the next season. So it is with this fund – by supporting the activities at Purdue today, you will be helping the industry (and yourself) not only today, but in the future also. We at Purdue would like to thank the folks who have supported us in the past, and encourage those who have not participated previously to join us in this venture. Every cent given to this account is spent on research and extension in tree fruit – there are no overheads or salaries taken from it. Recently, funds have been used to establish plantings at the new hort. research farm at Meigs here at Purdue, and also to provide for summer help for the research programs of Drs Foster, Hirst and Pecknold. If you would like further information on the Return Bloom Fund, contact a member of the board of the Indiana Hort. Society, Brian Garwood (219-362-4385), Mike Garwood (219-362-4385), Dave McAfee (219-942-7249), Dave Doud (765-833-6122), John Phillips (317-831-2559), Dick Hayden (463-6587), Gene Wild (317-849-0273), Sarah Brown (317-878-4566), or Ed Fackler (812-347-2213).

***Subscription Notice:*** If you subscribe to the printed version of Facts for Fancy Fruit, check the mailing label on this issue. If there is a 99 in the corner we have no record of your payment for 2000, and you will not receive another issue of the

newsletter. If you wish to continue to receive this newsletter please fill out the subscription form attached to this issue and send with a check for \$15.00 payable to Purdue University, to: ‘Facts for Fancy Fruit’, 1165 Horticulture Building, Purdue University, West Lafayette, IN 47907-1165. If you feel there is an error, please contact Penny Harner at (765) 494-1301. If you have e-mail and would like to receive the newsletter electronically, subscribe through the web at <http://www.hort.purdue.edu/fff/fff.html>, or send us your e-mail address and we will include you on the list. Electronic subscription is free.

### ***Upcoming Meetings:***

**March 21** - Tree fruit management and culture school. Jefferson County 4-H Fairgrounds, 7:00 pm. Contact Lonnie Mason (812-265-8919).

**March 22** - Wabash Valley Fruitgrowers meeting. Steve Nesbitts Orchard. 1:00 pm. Contact Peter Hirst (765-494-1323).

**March 29-30** – New York Wine Industry Workshop. Ramada Inn Geneva Lakefront. Contact Nancy Long at NYSAES 315-787-2288.

**March 30** - Central Indiana Orchard School, Martinsville. Contact Jim Barbour (317-253-0871) or Chris Parker (765-342-1010).

**April 5** - Pruning demonstration. County Line Orchard, Hobart, Lake Co. 1:30 pm. Contact Stan Sims (219-755-3240).

**April 6** - East Indiana Fruitgrowers twilight meeting, 6:00 pm, Minnetrista Cultural Center, Muncie. Contact Harold Brown (765-747-7732).

**April 11** - Twilight meeting, LaPorte Co. Contact Walt Sell (219-326-6808).

**April 15**– Vineyard Establishment Workshop. Jacksonville Vineyards near Vevay in Switzerland Co. Contact Bruce Bordelon at 765-494-8212.

**May 3** - Eastern Indiana Horticultural Society Meeting, Muncie. Contact Harold Brown (765-747-7732).

**May 9** - Twilight meeting, LaPorte Co. Contact Walt Sell (219-326-6808).

**FACTS FOR FANCY FRUIT  
SUBSCRIPTION NOTICE FOR 2000**

Facts for Fancy Fruit is a newsletter for commercial and/or advanced amateur fruit growers. It provides timely information on pest control and production practices that should be of interest to all growers. The information is not intended for home fruit growers unless those growers wish to follow commercial practices. All growers or interested persons are welcome to subscribe, however.

At least 14 issues will be published during 2000, bi-weekly during the growing season and monthly otherwise. The subscription price of \$15.00 includes only the basic costs of printing and mailing at first class rates. The newsletter is also available free of charge electronically through the world wide web at <http://www.hort.purdue.edu/fff/fff.html> or by email. If you have e-mail and would like a copy sent electronically, send your e-mail address to [bordelon@hort.purdue.edu](mailto:bordelon@hort.purdue.edu) and we will include you on the list, or subscribe through the web at <http://www.hort.purdue.edu/fff/fff.html>.

If you wish to receive the printed version of the newsletter in 2000, please fill out the form below and send it to the Department of Horticulture, along with a check for \$15.00 (tax included) **made out to Purdue University**.

We hope that you will benefit from the information contained in the newsletter. We welcome your comments and suggestions.

Bruce Bordelon

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Please send me "Facts for Fancy Fruit" for the 2000 season. Enclosed is my check for \$15.00 (tax included). Make checks payable to PURDUE UNIVERSITY.

|         |        |   |
|---------|--------|---|
| Name    |        | Please Check:   |
| Address |        | <input type="checkbox"/> Grower                               |
| City    |        | <input type="checkbox"/> Sales                                |
| State   | Zip    | <input type="checkbox"/> Other                                |
| Phone#  | County | I would like to see information on the following fruit crops: |
|         |        | <input type="checkbox"/> Apple                                |
|         |        | <input type="checkbox"/> Peaches                              |
|         |        | <input type="checkbox"/> Pears                                |
|         |        | <input type="checkbox"/> Blueberries                          |
|         |        | <input type="checkbox"/> Strawberries                         |
|         |        | <input type="checkbox"/> Grapes                               |
|         |        | <input type="checkbox"/> Raspberries                          |
|         |        | <input type="checkbox"/> Cider                                |
|         |        | <input type="checkbox"/> Other                                |

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