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## *Crop Conditions*

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The 1995-96 winter brought below normal temperatures and above normal snowfall. An early freeze in September across the northern half of the state caused damage and shortened the growing season by 2 to 3 weeks. Some plants may not have hardened off well because of that damage. Minimum temperatures in early February of -8 to -16°F across the state were low enough that peach buds were killed in many areas. It is too early to be if there will be a peach crop, however, and growers should keep a good watch as buds begin to swell over the next few weeks. Apples and pears appear to be in good condition. Tender varieties of grapes were injured in most areas, but more hardy types have a full compliment of live buds. Blueberries and raspberries were not injured, but blackberries were damaged in some areas. Remember that we will undoubtedly continue to see some lingering effects of the extreme cold received in January 1994. How these effects are manifested will depend on the weather patterns of this coming spring.

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### **News from Purdue:**

**Welcome to Randy Woodson:** William R. "Randy" Woodson has been named head of

Purdue's Department of Horticulture. Woodson, a native of Fordyce, Ark., joined the Purdue faculty in 1985. Since then, his research on the physiology of flowering plants has gained him worldwide attention in his field. He has published more than 60 journal articles on his research, and his research has been reported by many national media. Woodson's flower research was even mentioned by Jay Leno on NBC's "Tonight Show." In 1994, Woodson was named Outstanding Researcher of the Year by the Purdue School of Agriculture. Woodson succeeds Bruno Moser, who will remain at Purdue as the Extension Horticulturist in the commercial landscape and nursery area. In accepting the department head position Woodson said. "We enjoy a highly motivated and productive faculty, involved with a range of activities, including landscape architecture, production horticulture, horticulture marketing and genetic engineering. I am excited about providing the

leadership and vision necessary to ensure that the department of horticulture continues to be successful as we move into the 21st century.’’ Many of you had a chance to meet Randy at the Indiana Horticultural Congress last month and know that he is eager to work with the Indiana fruit industry. We welcome him to the position of Department Head and look forward to a ‘fruitful’ relationship.

***Tree Fruit Extension/Research Position to be Filled:*** Purdue Dean of Agriculture Vic Lechtenberg and Extension Director Hank Wadsworth announced in January that Randy Woodson has been authorized to fill the tree fruit extension and research position in the Department of Horticulture which has been vacant for over a year. That process is already under way. The search committee has been appointed, and a job description is being written. Randy hopes that the position will be filled by the beginning of the fall semester. The Indiana fruit industry should be commended for the support for this position, and involvement in convincing the administration of the importance of research and extension activities to the fruit industry. Many of you worked very hard to see that this position would be filled, and, thanks to your dedication, it will be. The Purdue Administration is aware that the Indiana Horticulture Society is a viable grower group that is interested in Purdue University. The industry’s generous grant and the initiation of a check-off fund will help support the activities of the position.

***1996 Spray Guides:*** The revised 1996 Tree Fruit (ID-168) and 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 this year’s 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. (317) 494-6794.

***Plant and Pest Diagnostic Laboratory:*** Sleuthing Plant Problems - (Peggy Sellers, Director, Plant and Pest Diagnostic Laboratory). The Plant and Pest Diagnostic Laboratory (P&PDL) at Purdue University is like a detective agency. We have a team of people working together to build a case and make a conclusion based upon the sample and the information received with that sample. In 1995, the P&PDL diagnosed more than 4,000 plant and pest problems that originated from Indiana and the Midwest. We can identify insects and weeds, diagnose disease or noninfectious problems, and provide control recommendations on a case-by-case basis.

Purdue University is fortunate to have several detectives (diagnosticians) working together to provide diagnoses for you and our other clients. Areas of diagnostic expertise include: consumer and commercial horticulture, plant pathology, entomology, weed science, soil fertility, and turfgrass management. In addition, we have a support staff of two computer/database management specialists.

The Plant and Pest Diagnostic Laboratory provides this unique service for only \$11 (\$22 for samples originating outside of Indiana) for each sample submitted to the laboratory. Additional fees may be assessed for virus testing (\$25) and diagnoses requiring exceptional amounts of time and resources (\$20 per hour, charged in 15 minute increments).

An accurate diagnosis is dependent upon the sample submitted and the information included with the sample. A good sample is one that is representative of the problem and shows the varying degrees of the symptoms. Dead plant tissue is of little help in diagnosis. For weed identification, dig whole plant, including roots, stems, leaves, and flowers or seedheads. For small weeds, press between

cardboard. For large bulky weeds, wrap only roots in plastic and the rest of the plant in newspaper, and mail in a crush-proof box. For problem identification such as leaf spots, send whole leaves representing early and moderate stages of disease. Press 5-6 leaves flat between heavy cardboard or paper and mail. When submitting entire plants for diagnosis, dig plants from the soil, place roots and attached soil in plastic bag, secure bag to lower stem, leave foliage out of bag. Do not add water. Wrap the entire bundle in newspaper and mail in a crush-proof box. Soft-bodied insects or other arthropods such as aphids, mites, thrips, caterpillars, and grubs, should be submitted in a small leak-proof bottle or vial of 70% alcohol (Rubbing or isopropyl alcohol) Do not submit insects in water. Hard-bodied insects such as flies, grasshoppers, wasps, and beetles can be submitted dry in a crush-proof container. Place the dead specimens between layers of tissue or cotton in a pill box or other small container.

Like a detective's case, the clues and answers to the problem are often found in the details around the plant or pest. Crucial information, such as the planting date, previous cropping history, soil type, fertilizers or chemicals applied, size of area affected, severity of the problem, number of insects found, and many other considerations often are the keys to unlocking the secret to a plant problem. Sample submission forms are available from your local Cooperative Extension Office or from our office. For more information please contact:

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URL: <http://www.aes.purdue.edu/ppdl/p&pdlwww.html>

**Grafting Wood:** If you need apple or pear grafting wood for new trees or for repairing mouse or rabbit damage, now is the time to collect it. Trees are still dormant, but the time remaining for collecting good scion wood is short. Remember that scion wood should be stored at 32°F and wrapped in moist cloth and plastic film. Do not store with apples.

#### ***Fertilizing Fruit Trees:***

**Apples:** Nitrogen fertilization of trees should be accomplished by about six weeks ahead of bloom, or by mid-March in most of the state. Use your best judgment of the amount to apply based on the cropping history of the planting, and the amount of shoot growth (12-18 inches of terminal growth is adequate for mature trees). If growth has been strong and foliage heavy, then nitrogen should probably not be applied this year. Severely pruned trees should not be heavily fertilized with nitrogen, since excessive vegetative growth will be produced. Calcium sprays for bitter pit control should be a standard practice beginning at petal fall or first cover, since a high quality crop of fruit is most important.

**Peaches:** With a potential light or no crop this year, nitrogen fertilization should be split into two applications. The first should go on from now to mid-March and the second after a good fruit set is assured. Where there is no crop, then that second application can be omitted and excess growth should be largely avoided. On peaches an annual application of nitrogen is needed to provide good terminal growth, since peach buds are produced laterally on last years terminal growth only.

Use your experience with tree growth and yield to establish the rate of nitrogen application. As a beginning guide, about 1/2 pound of actual nitrogen per tree is about right in most cases, with heavier amounts being required on lighter soils. At Vincennes we found that the usual level of nitrogen was not adequate to sustain good growth and heavy yield where it was necessary to maintain a completely sodded ground cover. Under these

conditions the rate should probably be doubled. Michigan studies indicate that peach tree growth is roughly proportional to the weed free area under the tree, so weed control is very important relative to fertilization.

Additional potassium may be needed where soils are sandy, or where cropping has been heavy. In the plots at SWPAC where the soil is very sandy and cropping was heavy, doubling the usual amount of potassium resulted in the best yields. Except in very unusual cases we do not see a response to phosphorus applications to either peaches or apples.

***Herbicides for Fruit Crops:*** Pre-emergence herbicides should be applied before weed seeds germinate if you wish to eliminate the need for a post-emergence material like Gramoxone Extra. See the 1996 ID 168 or ID 169 for suggestions of materials, rates and timing. Also read and heed the product labels.

***Equipment Maintenance:*** Is your tractor and sprayer ready to go? Is it cleaned, lubricated and calibrated? There is still time for the annual maintenance of that all-important equipment before it is really needed. The sprayer, and the tractor too, would be better for a good cleaning and waxing before the season. A dirty sprayer discharge manifold will rob the sprayer of efficiency and airspeed. A coat of paint would increase longevity as well. Where calcium is used in the cover sprays, special care is necessary to avoid premature equipment wearout.

The sprayer should be calibrated twice annually. It should be calibrated during the dormant season and after the trees have become fully leafed out. The patterns of spray distribution should be different for fully leafed trees from that for trees that are dormant or just leafing out.

***Pruning Grapes:*** The cold temperatures in early February caused bud injury on tender cultivars of grapes. Growers should make a

thorough assessment of bud survival before starting the pruning operation on grapevines. Adjustments in the balanced pruning formula can be made based on the amount of bud loss. If 50% of the buds are dead, leave twice as many buds than called for by the balanced pruning formula. Spring freeze damage can also be a significant economic problem for grape growers. A pruning technique called “long 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 these 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 load 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.

***Pruning Brambles:*** This is a good time to finish pruning summer-bearing brambles. Last years fruited canes should be removed if they weren't last summer or fall. Laterals on blackberries, and black and purple raspberries should be trimmed back about 1/4 of their length to promote flowering on strong wood. Red raspberries canes can be tipped if desired. 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.

***New Miticide Labeled:*** Gowan Co. has announced that a new miticide, Savey 50WP, has been cleared for control of European red mites on apples and European red mites and two-spotted spider mites on pears. Tests have shown Savey to be a very effective miticide, with results comparable to Apollo. Savey can be used as late as pink. I have not tested the two products side by side, but I plan to do so this year. The label prohibits the use of Savey and Apollo in the same year, because of concerns about resistance.

### ***Coming Meetings:***

**February 29** — Wabash Valley Fruit Growers meeting, SWPAC, Vincennes, IN. Contact Jerry Nelson at (812)882-3509.

**March 2** — Commercializing Chestnut in Michigan, MSU Plant Biology building, East Lansing, MI. Contact Dennis Fulbright at (517)353-4506.

**March 5-6** — Illinois Small Fruit and Strawberry Schools. Ramada Hotel, Mt. Vernon, IL. Contact Jeff Kindhart at (618)695-2441.

**March 9-10** — Indiana Grape/Wine Symposium, Season's Lodge, Nashville, IN. Contact Jim Butler at (812)339-7233 or Bruce Bordelon at (317)494-1298.

**April 2** — Southeast Indiana Fruit Growers meeting. 7 pm. Farm Bureau building, Aurora, IN. Contact John Ewart at (812)926-1189.

**April 4** — Eastern Indiana Fruit Growers meeting. Minnestrista Cultural Center, Muncie, IN. Contact Harold Brown at (317)747-7732.

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