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Crop Conditions

FFF 98-04
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Apples near petal fall in the south, full bloom in central areas and tight cluster in the north. Peaches are at or beyond petal fall in the south and petal fall in central areas and pink up north. Early budding grapes have 3-6 inch shoots in the south, 1 inch shoots in central areas, and are at budbreak in the north. Mid and late budding varieties are at early to full swell central areas. Strawberries at early bloom in south and central areas and pre-bloom in the north. Blueberries are at budbreak in the north.

Periodical Cicadas: Periodical cicadas are some of the most unique insects found affecting fruit trees. The immature stages feed for 13 or 17 years by sucking sap from the roots of trees. Depending on the species involved, adults will emerge after the 13 or 17 year nymph stage has been completed. Different areas of the state have different broods of cicadas that emerge on a regular basis. Because the adults are so noticeable, there are historical records of the periodic appearance of these insects in different areas of the state.

The adult cicadas will emerge in late May and June. Their presence is very noticeable because of the incessant high-pitched, shrill sounds the males make to attract females. The females, once mated, damage woody plants by using their knife-like egg laying structure to slit or puncture twigs. Young fruit trees are particularly vulnerable to this damage. The female will lay her eggs in these slits. The eggs hatch in about six weeks and the nymphs drop to the ground, burrow to the roots and begin the long feeding pro-

cess. The value of spraying insecticides to control cicadas is debatable. There is data that shows little or no reduction in damage when insecticides were applied. The most reliable way to avoid serious losses to young trees is to not have young trees present when cicadas are expected to emerge in your area. If you plan to summer prune, wait until after the cicadas have completed their damage, so that you can prune out damaged branches and keep healthy ones.

In 1998, there is a brood of 13 year cicadas scheduled to appear in western counties ranging from Posey to Jasper counties. If you have young trees in those counties, watch for the presence of cicadas in late May and June. Lorsban will likely provide the best control, although you should not expect any insecticide to prevent the damage.

In 2000, a brood of 17 year cicadas will emerge in southern Indiana, particularly Clark, Clay, Dearborn, Jennings, Lawrence, Marion, and Washington counties. Growers in these areas should refrain from planting trees until after this brood of

cicadas have emerged if at all possible. If you choose to plant, keep in mind that your young trees will be at risk of serious damage. For more information about when and where future broods of periodical cicadas

will be emerging, get a copy of Purdue Extension Publication E-47, Periodical Cicada in Indiana. -
Foster

Mite Management: By now, all of you should have made your Apollo or Savey applications to those blocks of apples where you anticipated a mite problem in 1998. If not, you can still apply Agri-Mek after petal fall. For best results, you should apply it within two weeks of petal fall. My research results and reports from growers have not found Agri-Mek to provide the levels of mite control we would like at the 10 oz. rate.

After petal fall, you should begin looking for the buildup of mite populations on a regular basis, even in those blocks where you have applied a miticide. If mite populations appear to be approaching or exceeding threshold levels, you can use Pyramite or a summer oil to get them back to

tolerable levels. My experience with summer oils is that if you use the 1% rate, you will have little or no phytotoxicity. Remember not to use summer oils within two weeks of a captan spray. Pyramite provides good to excellent control of European red mites, but it also fairly toxic to predators.

Finally, as I always say, the key to mite management is to conserve the predator mites that eat European red mites. If at all possible, avoid using those insecticides that are highly toxic to predators such as Asana, Ambush, Pounce, Vydate, Lannate, or Carzol. Before using these products, ask yourself which is worse, the insect problem you are trying to solve, or the mite problem you may create? -*Foster*



Weather Update: Heavy rains fell across southern and central Indiana last week. Lots of flash flooding has been occurring in southern Indiana and into Kentucky from this event. Rainfall amounts for the last 2 weeks have varied from 1 1/2 inches to over 7 inches across the state with the heaviest amounts occurring in the southeastern portion. Temperatures have averaged slightly above

normal over most of the state as well. The 30 and 90 day outlooks call for normal temperatures and normal precipitation. Soil temperatures in 4" grass around the state have been ranging from 51 - 60°F maximums and 45 - 54°F minimums. Bare soil temperatures have been ranging from 55 to 65°F maximums and 44 to 50°F minimums.

Check-off Money to Purdue: Firstly, we would like to thank all those that have contributed to the Purdue Tree Fruit Research and Extension fund. This fund was started 2 years ago by the Indiana Horticultural Society as a voluntary check off in the amount of one cent per bushel. The money raised by these contributions have been used to support tree fruit research and extension in terms of pomology, entomology and plant pathology. The type of things

this money has been spent on include hiring students to work over the summer to help with research and establishing new plantings out at the new Throckmorton Farm. We appreciate the support of the industry and would encourage growers to continue in their support of our work. If you have any questions on this subject, please call Peter Hirst or one of the Indiana Horticultural Society Board members. -*Hirst*

Vice President Responds to Concerns Over the Food Quality Protection Act: In the last issue I wrote about the potential implications of the

Food Quality Protection Act. On April 8 Vice President Al Gore issued a press release available at the following web site: <http://whitehouse.gov>.

Statement of Vice President Gore on Ensuring a Safe, Plentiful Food Supply

Protecting our children's health and helping our farmers remain the most productive in the world are two of this Administration's top priorities. That is why I am asking the Environmental Protection Agency and the Department of Agriculture to work together to meet both of these objectives, ensuring our nation a safe, plentiful food supply for the 21st century.

Two years ago, President Clinton signed the Food Quality Protection Act of 1996, a landmark effort to safeguard public health and especially children. The Act, which passed with broad bipartisan support, set in motion a systematic, scientific effort to identify and reduce potential risks posed by pesticides. With that effort now well under way, some in the agricultural community are concerned about how the act's implementation may affect them.

President Clinton and I will not waver in our commitment to protecting children's health. Nor are we willing to sacrifice the strength and competitiveness of our agricultural communities. Accordingly, I am asking EPA Administrator Browner and Secretary Glickman to work in partnership to ensure that these regulatory efforts are guided by sound science and broad public participation. I am asking them as well to speed the development and approval of any new, safer pest control strategies.

I am confident that working together, we can assure Americans the safest, most productive food supply ever.

Vice President Gore also sent a four page memo to Agriculture Secretary Dan Glickman and EPA Administrator Carol Browner outlining a plan for the EPA and USDA to work together to implement FQPA with due regard for the needs of our Nation's agricultural producers. In the memo, Gore set out four implementation principles for EPA to use in reaching its decisions: *Sound Science in Protecting Public Health; Transparency; Reasonable Transition for Agriculture; and Consultation with the Public and Other Agencies*. Under each of these principles Gore gave specific examples for EPA and USDA to follow. Those of particular interest to our industry include: 1) EPA should continue to seek peer review and public review of its methods and approaches for analyzing potential risk under the new law, particularly with respect to models, exposure scenarios, and use of scientific inferences. Use of default assumptions and exposure scenarios should be carefully considered and

fully explained in the public record. 2) In determining whether or not to seek additional data from the regulated community, EPA should fully disclose its decisions and reasons to the public. 3) Implementation of the law will require transition to new pest management strategies for certain pesticide users. EPA and USDA should work together to address transition challenges in future years. 4) I understand that EPA does not intend any significant use cancellations in this growing season. If this should change based on new information, there should be immediate consultation with USDA and affected constituencies. 5) To the extent permitted by law and consistent with public health protection, EPA and USDA should implement the FQPA in a way that ensures that affected pesticide users and other affected constituencies have the time, technical assistance, and support they need for transition to new and effective pest management strategies. 6) EPA should facilitate transition to

new and more protective pest management strategies by expediting approval of new products that may serve as effective and safe substitutes to pesticides that may present unacceptable risks under the FQPA. USDA should devote appropriate resources to research and expand technical assistance in support of integrated pest management strategies.

The EPA has 14 days to respond to the memo from Vice President Gore and establish a mechanism for seeking advice and consultation from affected

user, producer, consumer, public health, environmental, and other interested groups. A copy of the Vice President's memo can be obtained from the Vice President's Press office at 202-456-2685.

It appears that the concerns of the farming community were heard in Washington. Now let's hope EPA and USDA follow the Vice President's suggestions and support research and development of alternatives. -*Bordelon*

Future of Pest Control Under the FQPA: Based on the information in the above article, I believe that it is unlikely that we will see any pesticide cancellations this season. For the future, however, it seems inevitable that at some point growers are going to have to control their insect pests without the organophosphate and possibly the carbamate insecticides. Obviously, such materials as Imidan, Guthion, Lorsban, malathion, etc. are currently important components of most growers' insect management programs. There are new, less toxic, insecticides being developed that will replace these existing standard products (See the next article). It is my belief that the replacement insecticides in general will have the following characteristics: 1) Less toxic to humans; 2) More environmentally benign; 3) More specific for a particular pest or pest group; 4) Less toxic to natural enemies; 5) More expensive. In western apple growing areas where growers have adopted mating disruption for

codling moth control rather than cover sprays of organophosphate insecticides, growers have noticed that a number of insects that were not considered serious pests have emerged as problems. This has happened because the cover sprays for codling moth had been keeping these pests under control without the grower's knowledge. Once the cover sprays were eliminated, these minor pests became more serious. As we make the transition to more target specific insecticides, we may well see some new pests emerge in much the same way. Growers, chemical industry people, and researchers will have to work together to develop the most efficient systems for controlling all the pests that appear. This is why it is important that EPA allow adequate time and speed the registration of alternative insecticides so that new management strategies can be developed that will allow growers to control their pests in a cost effective manner. -*Foster*



New Insecticide for Apples: Dow Agrosiences has announced that spinosad, marketed as SpinTor or Success, has been labeled for use on apples, as well as a number of vegetable crops. This product is one of the newer "safer" insecticides that is hoped will replace the older materials such as carbamates and organophosphates. I have tested this

product on a number of crops (not apples) and it gives good to excellent control in many although not all situations. I am scheduled to evaluate spinosad on apples this year. Dow has announced that although the product is approved by EPA, there will not be any available for sale until 1999. Hopefully by this time next year, we will have a better idea as to how to use this product. -*Foster*

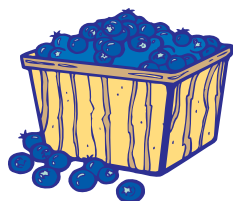
Chemical Thinning: The most anxious time on the apple growers calendar is approaching yet again. In many places in the state, flowering is looking excellent so far. Generally crops last year weren't too heavy and with the mild winter we have many strong flowers out there. This may be the year to get a little more aggressive with your thinning strategy. The bottom line is the earlier you thin, the better the response will be, both in terms of fruit size and return bloom. But bear in mind that earlier thinning also carries more risk, as we could still get a late frost. I think bloom thinning is just too risky for us in Indiana, but this might be a good year to consider going in soon after petal fall with a thinner. Response to the thinner should be evident within a

week of the thinner being applied, so you still have plenty of time to go back and hit them again if need be. Remember that thinners work best when temperatures are warm - 68°F minimum, but 70's is better yet. The temperature is important not only at the time of application, but for several days afterwards, so apply thinners at the start of a warming trend.

The best thing you can do to reduce the risk of overthinning, is to keep a record of what you did including what material you applied, time of application, rates, temperatures, etc. Over a few years this will allow you to develop a good picture of what works on your farm, and make future decisions based on this information. -*Hirst*

Blueberry Growers Get Crisis Exemption Registration for Indar: Blueberry growers in Indiana and Michigan are breathing a sigh of relief after the Michigan Department of Agriculture and Office of the Indiana State Chemist filed for a State Emergency Exemption for Indar 75WSP fungicide for control of mummyberry disease on blueberries. The previously used fungicide, Funginex, is no longer being produced and stocks are in short supply.

An Emergency Use Permit (Section 18) request was filed in February by Indiana and Michigan, but EPA has not acted on that request at this time. The Emergency Crisis Exemption was filed because the warm weather has pushed the season 2-3 weeks ahead of normal, and growers are desperately needing to spray plantings where the disease is a problem. Mushrooms from the overwintered mummified berries were being reported from Northern Indiana into Michigan signaling the potential for an outbreak of the disease.



Mummyberry disease is prevalent throughout the region, but it is not found on every farm. Once a farm has the disease however, it is practically impossible to eradicate.

Indiana blueberry growers must have a copy of the Crisis Exemption Label for Indiana in order to legally apply Indar 75WSP. The product should be applied at 2 oz. per acre beginning at early green tip and subsequent applications should be made at 10 to 14 day intervals. Not more than 5 applications or 10 ounces per acre are allowed. The pre-harvest interval is 30 days. Crisis Exemption labels can be obtained from pesticide distributors, Rohm and Haas, or you can contact me at Purdue and I'll send you one.

Prices for remaining stocks of Funginex have risen over the past couple of years as to about \$90 per gallon, or \$17 per acre per application. Prices for Indar will be about \$110 per pound or about \$14 per acre per application according to distributors.

Ed White, Assistant Pesticide Administrator at the Office of the Indiana State Chemists lead the efforts to secure the State Emergency Exemption for Indiana growers, and Dave Trinko of MBG Marketing lead the effort in Michigan. If you have any questions contact me. -*Bordelon*

Fire Blight: Do not become complacent about fire blight! Even though fire blight has been at a low level the past few years you never want to let your guard down, or you could get hurt! The best prevention for fire blight is the application of streptomycin during bloom. Apply streptomycin just as blossoms begin opening and repeat every 3-4 days if weather favorable for blossom blight infection persists. Be especially diligent in your

fire blight program if you have M-26, M-9 and/or Mark rootstocks and/or interstems. Due to their high susceptibility, fire blight prevention is mandatory in orchards containing these rootstocks. The “MARYBLYT” computer software program will help you in determining when and if an infection event occurred as well as predict the risk for future infection periods. If you are interested in obtaining MARYBLYT contact Gempler’s at 1- 800 - 382 - 8473. -*Pecknold*

Apple Scab: The peak period for scab infection is now! Primary scab spores are ripe and ready to infect, all they need is a good scab rain. Are you prepared? For growers on a curative schedule, or for those who get caught with their pants down (unprotected), we suggest either Rubigan or Nova. Both

fungicides will provide up to 96 hours “curative activity”. However, the sooner you apply these fungicides the better! Do not sit around thinking there is no need to rush - apply Rubigan or Nova as soon as possible after an infection period. -*Pecknold*

Nova, Rubigan & Tank Mixes : If Nova or Rubigan have been used alone in your early season spray program for scab we suggest the final spray (petal fall or first cover) of Nova or Rubigan be combined with a protectant fungicide such as cap-

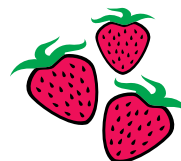
tan, ziram, mancozeb, or Polyram. Using a protectant fungicide at this time will provide protection from summer diseases such as black rot, sooty blotch and fly speck and help give added protection from fruit scab. Refer to Rubigan and Nova labels for additional information on tank mixes. -*Pecknold*

Rust Diseases: Cedar apple and cedar quince rust are now actively infecting foliage and fruit. The cedar apple galls look especially impressive this year! Except for the northern areas of the state we are now into the peak period for rust infection. We

don’t want to become a broken record...but, the sterol-inhibiting fungicides are excellent in preventing rust problems; as well as providing excellent control of powdery mildew...which is also infecting new leaf tissue, right now! -*Pecknold*

Strawberries and Botrytis Fruit Rot: The most important sprays for control of Botrytis fruit rot of strawberry are those applied at bloom - starting at 10% bloom! NOTE: while Rovral and Ronilan are excellent fungicides for control of Botrytis, resistance to these fungicides is a very real problem if they are used too often... follow label directions

on frequency of spray applications. See ID-169, “ 1998 Indiana Commercial Small Fruit & Grape Spray Guide “, for further information. -*Pecknold*



Strawberry Frost Protection: Strawberries are in bloom in southern and central areas, and will be over the next couple of weeks in the north. The sprinkler irrigation equipment for frost protection should be set up, tested, and ready to go. Once flowers open they are susceptible to temperatures below 30°F. Application of water through overhead irrigation can prevent temperatures from dropping below 30°F even though the air temperatures may drop to 25°F or colder. The principle behind this method is that as water freezes, heat is released. As long as an adequate layer of freezing water covers the bud or berry,

the temperature will remain at or near the freezing point. It is important to remember that a layer of freezing water must be present at all times. Ice without the continued application of water will not protect the flowers from freezing temperatures. This means that the rate of application of water must be carefully monitored. The rate at which water freezes is dependent on several environmental factors, including air temperature, humidity, and wind speed. Generally, the lower the air and dew point temperatures, and/or higher the wind speed, the greater the rate of freezing. The correct rate of irrigation can be determined from the following table.

<u>Air temperature at canopy level (°F)</u>	<u>Wind speed</u>		
	<u>0-1 mph</u>	<u>2-4 mph</u>	<u>5-8 mph</u>
At 50% relative humidity			
27	0.10 inches per hour	0.20	0.30
24	0.10	0.30	0.35
<u>20</u>	<u>0.15</u>	<u>0.35</u>	<u>0.45</u>
At 75% relative humidity			
27	0.05	0.10	0.20
24	0.10	0.20	0.30
<u>20</u>	<u>0.10</u>	<u>0.25</u>	<u>0.40</u>

The question of when to start the irrigation is difficult to answer. The simplest and safest method is to start irrigation when the temperature in the lowest part of the patch at canopy level reaches 34-32°F and continue irri-

gation until ice begins to melt after sunrise. Irrigation can be very effective for frost protection, but it can also create problems. Misuse of irrigation for frost protection can cause more harm than good. - *Bordelon*

COMING MEETINGS

April 28 — Wabash Valley fruitgrowers meeting. Engelbrecht Orchard. Contact Peter Hirst, phone 765-494-1323.

May 6 — Eastern Indiana Fruitgrowers meeting. Contact Harold Brown, 317-747-7732

May 7 — Northeast Indiana Fruitgrowers meeting. Contact Rick Kemery, 219-481-6826

May 18 — LaPorte County fruitgrowers twilight meeting. 6.30 pm. Location to be announced. Contact Walt Sell, phone 219-326-6808 ext. 271

June 15 — Southeast Indiana Fruitgrowers twilight meeting. Location and time to be announced. Contact Karen Witt at 765-647-3511.

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