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Crop Conditions: Warm conditions have been favorable for fruit growth of apples, peaches, grapes and berries. Tree fruits are generally looking good except for some scattered hail damage and fireblight. Strawberry season is winding down. The crop was better in the southern part of the state than in central and northern areas because of late spring frosts and the early June heat (repeat of last year). Blueberries are looking good. The crop is a bit light in some plantings, but the estimate is for a normal crop this year statewide (about 80% of last year). Grape bloom is ending and cluster numbers are high. Last year's drought apparently didn't affect fruitfulness of buds.

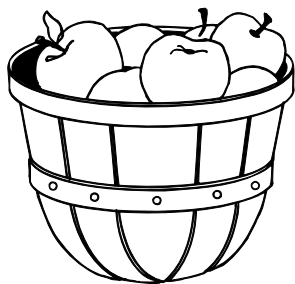
Managing Apple Summer Diseases: Apple summer fruit rot and blemish diseases (sooty blotch & flyspeck, black rot, white rot and bitter rot) are now on the increase. The SI fungicides (Nova, Rubigan, Procure and Bayleton) do not provide good control of these diseases. Mancozeb and Polyram are excellent for control of summer diseases, however they can only be applied up to 77 days of harvest. After the 77 day to harvest restriction has passed captan and ziram remain our best options for summer cover sprays; they should be used at the full labeled rate and on a tight schedule if cool, wet summer weather prevails. We also suggest tank mixing with Topsin-M or Benlate if it turns into a 'sooty blotch/fly speck year'; however, Benlate and Topsin-M should be used sparingly (no more than once a month) to avoid harm to predator mites and lessen the possibility of the development of resistance. NOTE: Benlate, and to a lesser extent Topsin-M, are reported to cause 'scarf

skin' if used within 40 days of petal fall. Scarf skin is a physiological condition in which the fruit surface develops a milky white or grayish appearance. Scarf skin has no effect on fruit quality or storage ability, but impairs the appearance and shine on a red apple.

Another option for control of sooty blotch and flyspeck is now available with the strobilurin fungicides, Flint and Sovran. The best timing for Flint and Sovran in summer sprays remains to be determined; however, we concur with those who advocate an early cover spray (2nd or 3rd cover) to help prevent an early build up of SBFS and subsequent secondary spread. Of course this assumes you have not already applied the maximum of four sprays allowed per season for the strobilurins.

Infection from summer diseases, especially sooty blotch and flyspeck, can further be reduced through IPM strategies that lower humidity and promote rapid drying. These include keeping grass mowed during

summer and keeping trees well pruned. Tree spacing within and between rows should allow air movement between all trees. Removing adjacent woods or cutting breaks in hedgerows will also help improve airflow in the orchard. Of course it goes without saying (so I'll say it) that all the above suggestions are pretty much a waste of time if **good sanitation** measures are not strictly followed. -*Pecknold*



Ugly Stubs & Fire Blight: Growers should be especially alert for fire blight symptoms in late May to early June.... this is generally the time fire blight makes itself known. Special attention should be given to young trees and trees on M9 and M26 rootstocks or interstems. Look for new growth that appears wilted and crooked at the tip with browning and wilting of leaves. Efforts to limit secondary spread by cutting out fire blight strikes are most successful if these strikes can be removed immediately after they appear. Cut out blighted twigs 10 to 12 inches below any sign of infection; however, if the infected shoot is associated with the main trunk or a major scaffolding limb you may want to try the “ugly stub” cut to help avoid possible canker formation. Do not cut flush with the trunk or major limb, but instead leave a naked 4-5 inch branch stub. Marking the ugly stubs with flags or a bright colored paint when the cuts are made can help in relocating them during the winter pruning operation, when the ugly stubs are removed, without fear of canker formation. Another advantage of pruning out fire blight tissue in winter is that you do not have to sterilize pruning tools between each cut, something you must do at this time of year. -*Pecknold*

Lorsban: The Environmental Protection Agency has announced the second registration decision stemming from the Food Quality Protection Act that will have a major affect on Indiana apple growers. Effective December 31, 2000, Lorsban will be allowed for use on apples pre-bloom only. Lorsban was identified in our 1994 pesticide use survey as the third most commonly used insecticide on apples in Indiana. This restriction will eliminate most of the uses for which Indiana apple growers applied Lorsban. Foliar applications of Lorsban 50W will be allowed during the current growing season. The tolerance for chlorpyrifos (the active ingredient in Lorsban) will be reduced from 1.5 ppm to 0.001 ppm. Lorsban also will become a Restricted Use Pesticide.

Last summer when the decision eliminating the use of PennCap M on fruit crops and placing greater restrictions on the use of Guthion were announced, I stated that I believed that Indiana apple growers could live with those changes, as long as we were able to keep our remaining products, particularly Imidan and Lorsban. Beginning in 2001, one of those remaining tools will no longer be available. As I see it, the upcoming decision on Imidan is going to be critical. As things stand now, I think that we can get by reasonably well. However, with more decisions pending, the amount of flexibility we have is being reduced more and more.

In addition to the restrictions on apples, the tolerances will be reduced on grapes and revoked on tomatoes. These changes will affect imported produce, since Lorsban is not labeled for use on these crops in the US. Dow Agrosiences and EPA estimate that these changes will reduce dietary exposure to chlorpyrifos by 75%, effectively reducing dietary risk concerns. Also, virtually all uses by homeowners will be eliminated. Most uses for control of residential pests will either be eliminated or phased out. Use in schools, parks or other areas will children could be exposed will be eliminated. -*Foster*

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 mid-July in normal years. Now that harvest is over, growers should begin renovation. The following steps describe renovation of commercial strawberry fields.

1. Weed control: Annual broadleaf weeds can be controlled with Formula 40 (2,4-D alkanolamine salts plus 2,4-D Triisopropanolamine salt (4 lbs./gal.) at 2 to 3 pts./acre in 25-50 gallons of water applied immediately after final harvest. Formula 40 is the ONLY 2,4-D formulation labeled for use in strawberries. The other amine formulations such as Weedar 64 or Amine 4 have a different formulation and are not labeled specifically for strawberries. 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 Formula 40. 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. 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.

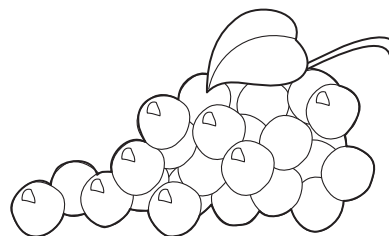
4. Subsoil: Where picker traffic has been heavy on wet soils, compaction may be severe. Subsoiling between rows will help break up compacted layers and provide better infiltration of water. Subsoiling may be done later in the sequence if crop residue is a problem or if soils are too wet at this time.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



Shoot Positioning in Grapes: Sunlight exposure is crucial for fruit quality and productivity in all fruit crops. Sunlight penetration in the grapevine canopy is improved through a series of cultural practices collectively known as canopy management. This includes training system, pruning severity, nutrient management, leaf pulling, shoot positioning and so on. Now that fruit set has occurred and shoots have toughened, grapes can be shoot positioned. On high cordon trained vines typical of Midwestern vineyards, shoots that are growing laterally across the top of the trellis cause considerable shading of the fruit and renewal zone. These need to be pulled downward to increase sun exposure of the critical zone in the canopy. Not only does this help reduce shading in the cluster and renewal zone, but it also can also devigorate shoots, a benefit in high vigor situations. On upright growing varieties trained to a vertically shoot positioned system, catch wires are pulled up to lift shoots before their weight causes them to droop. Shoot positioning should be done as early as possible to get the maximum benefit of improved fruitfulness in the renewal zone. -*Bordelon*



Care of Young Vines: Vines in newly planted vineyards need plenty of care. As I've noted before, weed control is critical to getting strong growth from 1st year vines. Right now, newly planted vines are growing rapidly due to the heat and rain. If grow tubes are being used, be sure to provide support for the vines after they grow above the tube. Either stake each vine or tie string between the trellis wires to support the growth above the tube. Use loose ties to attach the shoot to the support. Many growers using "tapeners" for speed and ease. Unsupported shoots tend to get damaged when wind

blows them across the top of the tube. Also, if the shoot is not supported, its weight will cause it to bend downward and growth will slow, lateral shoots will develop, and the main shoot may never reach the top wire during the growing season.

Pest control is usually not too difficult on young vines. Because they lack fruit and the foliage density is sparse, diseases can usually be controlled with a few sprays of protectant fungicides such as mancozeb or captan. These products do not control powdery mildew, so if powdery becomes a problem another product will have to be applied. This could be potassium bicarbonate (Armicarb, Kaligreen), JMS Stylet Oil, potassium monophosphate (eKspunge) one of the Sis (Nova, Bayleton, etc.) or one of the strobilurins (Flint, Sovran, Abound). Sulfur could be used if the variety is tolerant. Among insect pests, Japanese beetles are the most common and damaging on new vines. Beetles can eat most of the leaves on a young vine in a matter of days, so scout twice weekly and apply Sevin when beetles are first spotted.

New vineyards are a big investment. Proper care of newly planted vines will insure early returns on the investment. -*Bordelon*

Pesticide Spray Drift - A Critical Issue Every Year: (Adapted from Kentucky Fruit Facts by Lee Townsend, U.K. Entomology and Ken Franks, Jr. Division of Pesticides, KY Department of Agriculture) Spray drift is a potential problem almost every time a pesticide application is made. The following information, from the Environmental Protection Agency, provides a good review of something every applicator should know. The EPA defines pesticide spray drift as the physical movement of a pesticide through air at the time of application or soon thereafter, to any site other than that intended for application (off-target). Its definition does not include movement caused by erosion, migration, volatility, or contaminated soil particles that are windblown after, unless specifically addressed on a pesticide product

label with respect to drift control requirements.

How Does Spray Drift Occur? When pesticide solutions are applied by ground spray equipment or aircraft, droplets are produced by the nozzles of the equipment. Many of these droplets can be so small that they stay suspended in air and are carried by currents until they contact a surface or drop to the ground. A number of factors influence drift including weather conditions, topography, the crop or area being sprayed, application equipment and methods, and decisions by the applicator.

How Does EPA View Off-Target Spray Drift? When labels of pesticide products state that off-target drift is to be avoided or is prohibited, the policy is straightforward: pesticide drift from the target site is to be prevented. However, [the EPA] recognizes that some degree of drift of spray particles will occur from nearly all applications. The question becomes - were all reasonable measures to reduce drift followed? Applicators must use all available practices designed to prevent drift. They must consider factors such as wind speed (greater than 10 mph), direction and other weather conditions (inversions), application equipment, the proximity of people and sensitive areas, and product label directions in making their decisions. Sprays should not be applied when conditions favor drift or when prohibited by the label requirements. EPA uses its discretion to pursue violations based on the unique facts and circumstances of each drift situation.

Twelve Tips for Applicators

By following this check list, applicators can comply with critical state and federal regulations concerning pesticide use and application.

1. **Know your fields.** Be aware of sensitive areas such as sinkholes, bodies of water, and slopes where runoff can occur and use buffer strips as appropriate.

2. **Always read and follow label directions.** You should read the label every time you get a

new shipment of pesticides. Pay close attention to sections on Practical Treatment, Precautionary Statements, Directions for Use, Storage and Disposal, in addition to instructions for the crop you are treating. Be aware of any label changes. Pesticide labels can change in the middle of a season. It is a violation of state and federal law to use a product in a manner that is inconsistent with its label. Have a copy handy as a reference.

3. Follow the Worker Protection Standards.

Keep your central posting area up to date. Be sure personal protective equipment is repaired and clean. Have decontamination station equipment ready.

4. **Check your spray equipment** for wear and calibrate carefully. Check hoses and nozzles for wear, especially if you apply a lot of WP, DF, WDG, DF, or F formulations. These are abrasive and wear nozzles. Inspect pumps and pressure gauges.

5. Keep accurate pesticide application records.

This must be done for all Restricted Use pesticides but is a good idea for General Use products, too. Accurate records can assist an applicator in the event the product does not perform to expectations. Be aware of the record keeping requirements of the USDA, Worker Protection Standards, and the ground-water protection act.

6. **Don't spray when it is windy or rain expected.** Drift can be a major and costly problem. Do not spray when the wind speed is 10 mph or more. Use low pressure, low boom placement, and large droplet size, as appropriate. Heavy rainfall can wash off applications during the first several hours. Check the product label for specific guidelines.

Young Tree Management: Now is a good time to give a little attention to those apple trees you planted this year. I stress the LITTLE part of this – remember that the more

you prune a young tree, the more you delay cropping, so don't prune them too hard. The only pruning I would do is to remove and broken or diseased branches, and to single out shoots. By singling out, I mean if there are several shoots competing to be the leader of the tree, leave the most dominant, upright branch and remove competing shoots. The same can be done to the ends of branches that you want to become lower scaffold branches – just single them out to encourage their continued development.

There are a few other things to watch for with young trees. Good control of weeds, pests and diseases is essential to rapid tree establishment. Deer can really cause havoc with young trees – an electric deer fence may prove to be a good investment, but if this is not possible, then tying small bars of soap to each tree may help. The amount of time needed to take care of your investment in young trees is not great, but can really make a difference to how soon you start to see a return on that investment. -*Hirst*

IHS Summer Meeting: Just a reminder – the Indiana Horticultural Society will be holding its summer meeting on June 27-28 at Joe Huber Family Farm and Huber Orchard, Winery, Starlight, IN. The brief schedule is:

Tuesday, June 27, 2000

3:00-5:00 pm Tour the Forest Discovery Center. If you need directions, we will be at the Barnyard Bash II pavilion at Joe Huber Family Farm at about 2:30 pm.

6:00 pm Dinner (Dutch Treat) at Joe Huber Family Farm restaurant.

7:30-9.00 pm Round Table Discussion will be held in the restaurant after dinner, or we will adjourn to the Barnyard Bash II for the discussion.

Wednesday June 28, 2000

Assemble at Joe Huber Family Farm, Barnyard Bash II.

8:00-9:00 am Registration and Coffee and Donuts

9:00-12:00 Tour of the orchards, fields market and facilities at Joe Huber Family Farm

12:00 Travel to Huber Orchard, Winery

12:00-1:30pm Lunch in the restaurant at Huber Orchard, Winery

1:30-2:15pm Indiana Horticultural Society Business meeting

2:15-5:15pm Tour Huber Orchard, Winery orchards, fields, market and facilities.

See the last edition of Facts for Fancy Fruit for more details. All are welcome – you don't need to be a member of the Indiana Hort. Society to attend.

I encourage your participation. The two operations we are visiting are among the very best you will see anywhere in term of marketing not only the produce, but the whole farm experience. Whatever the scale of your farm, you are bound to leave with some good ideas and a lot of enthusiasm and encouragement.

Indiana Winegrower's Guild Summer Meeting: The IWG will hold its summer meeting at Oliver Winery in Bloomington on Friday July 7. The board of directors will meet at 2:00 pm and the general membership will meet at 4:00 pm. A bar-be-que dinner will be held at 6:00 pm at a cost of \$10 per person. There are some important issues to discuss during the business

meeting so the board is urging all members to attend. The meeting is open to IWG members and anyone interested in Indiana grapes and wine. Come see what all the excitement is about!

Coming Meetings:

June 27-28 – Indiana Horticultural Society Summer Meeting. See details in the past issue

July 5-6 - Vineyard & Winery Management Magazine Summer Seminar for Commercial Wine and Grape Production. Seneca Lake, NY. Contact V&WM at 800-535-5670.

July 7 – Indiana Winegrower's Guild Summer meeting. See details above. Contact Bruce Bordelon 765-494-8212 or Dave Lundstrom 219-464-4936.

August 2 – Southwest Michigan Annual Viticulture Field Day and Steak Cookout. Southwest Michigan Research and Extension Center, Benton Harbor, MI. Contact Tom Zabadal 616-944-1477.

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