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Crop Conditions: We have faced a somewhat difficult start to the apple harvest with warm nights preventing good coloring. Hopefully with the evenings becoming cooler now, coloring of subsequent varieties will be better. Gala is still being harvested in central to northern parts of the state, and in more southern areas Macintosh and Jonathan harvest is underway. Wine grape harvest is winding down with late season varieties being picked in southern areas. Fall bearing raspberry harvest continues. The cooler weather and rainfall has helped improve fruit quality.

Plum Pox Virus: Not only did we not find any trace of the virus in Indiana this year, but other surveyed states also appear to have come up clean. Over 50,000 samples have been analyzed this year, and all tested negative for the antibodies to the virus. The outbreak in Ontario, Canada found last year has been quarantined and all trees ordered to be removed have been destroyed. More than 300 new positive samples were found in the Niagara region, and as a result the quarantine zone has been expanded. Canadian officials were not surprised to find more infected trees due to the more intensive sampling this year and they still feel they are on track with their eradication program.

Fall Small Fruit Care:

Grapes-

Grapes should be encouraged to harden off for winter by avoiding nitrogen fertilizers

and supplemental watering at this time. Apply non-nitrogen fertilizers and lime as needed based on soil and tissue test results. It is especially important to maintain healthy leaves through fall to promote proper hardening. Downy and powdery mildews often build to epidemic levels on susceptible cultivars in fall. Both can cause defoliation and reduced winter hardiness so it's important to maintain protection against these diseases throughout the fall until leaves drop naturally.

Blueberries-

As with grapes, blueberry plants should be encouraged to harden off for the winter. However, growers should continue to irrigate if dry weather persists. Fruit buds are developing now for next year's crop so it is important to avoid water stress on the plants during this time. Apply non-nitrogen fertilizers and materials for soil pH adjustment based

on foliar analysis and soil tests. Apply these before fall rains begin and also before adding any supplemental mulch to the plants.

Strawberries-

Flower bud initiation occurs during late summer and fall, so maintaining good plant health into the fall is important for high yield potential next year. The recent dry weather (in some parts of the state) can significantly reduce fruitfulness next year. Irrigate to provide at least 1 inch of water per week through October. We mentioned the importance of an application of nitrogen fertilizer in the last issue of this newsletter. If it hasn't been done yet, it's not too late. If tissue analysis shows deficiencies in magnesium or boron, early fall is a good time for foliar applications of Epsom salts (15 lb./100 gal./acre) for magnesium and Solubor (3 lb./100 gal./acre) for boron. Phytotoxicity can be a problem with these materials so read the labels. In addition to fertility, controlling leaf diseases improves the ability of the plant to carry on photosynthesis and store starch in the crowns. Check fields for infestations of leafhopper or aphids. Generally, plants can take a fair amount of feeding by these insects, but heavy infestations can be a problem.

Brambles-

Encourage hardening off of canes in summer bearing varieties of brambles by avoiding nitrogen fertilizers and supplemental watering at this time. Spent floricanes can be removed now, but it's better to wait until later in the winter unless they are significantly affected by disease. Fall bearing raspberries can still benefit from irrigation in dry weather to help maintain fruit size. Apply non-nitrogen fertilizers and lime as needed based on soil and tissue test results. If Phytophthora root rot has been identified in a field, treat the affected area with Ridomil Gold EC or Alliette in September or early October. This timing is important to get the material in place in the root zone before the onset of cool wet weather in the fall. (Bordelon)



Black 'M' on thorax is characteristic of the Asian Lady Beetle.

When Good Beetles Go Bad: Asian lady beetles are beneficial insects that were imported into this country by the USDA in the 1970s and 80s to control aphids and other pests of trees. While they have been very successful at reducing pests of pecans and other crops, they have become a problem for some fruit growers in recent years. Lady beetles have been found feeding on soft fruits such as peaches, raspberries, and grapes. It's doubtful that they actually caused any damage, but rather were attracted to already damaged fruit seeking moisture and/or nutrients. Winemakers have become particularly aware of these insects when they show up in a load of grapes because they impart a very unpleasant taste to the resulting wine.

In light of this problem and for general information, we thought our readers might want to know more about these recent immigrants.

This Asian Lady Beetle looks like most other lady beetles (oval, convex, and approximately 1/3 inch long). However, body color varies dramatically among Asian lady beetles. Different color variations, from yellows to reds, can be found within a single handful of beetles. Many have black spots; some have many, some have few and some lack spots. The most apparent identifying character that Asian lady beetles share is a black 'M' inscribed on their thorax, just above the wing covers. Some M's are darker and more obvious than others, but their presence is almost always a good diagnostic tool.

While this species, like many others in our area, is effective in controlling some pests out-of-doors, it has the unusual habit of congregating in large numbers on and in buildings during the late fall. Asian lady beetles are most attracted to light colored buildings and especially to those areas that are illuminated by the sun. For this reason, beetles usually first appear on the southwest-facing sides of light-colored buildings, close to wooded areas. Darker colored buildings or those in the shade are less likely to have severe problems. Once several beetles have settled on a suitable site they release a chemical signal which attracts even more beetles.

Congregating begins in mid October and usually reaches its peak by the end of the month. During this congregating activity, hundreds of thousands of beetles may appear around homes, creating a serious nuisance. When outside temperatures fall the beetles move into tight cracks and crevices such as under siding or in wall voids, or cluster tightly into the corners of attics or garages. Once there the beetles eventually find their way into the home through small cracks or openings in window sills, door jams or foundations. There the beetles essentially remain in a hibernation-like mode for several months. Because the beetles are out of sight during the winter months, homeowners are often fooled into believing that the beetles are gone. That is, until the first warm days of late winter or early spring, when the beetles seem to come to life again and begin crawling about. At this time the nuisance factor intensifies because the beetles are more attracted to the living areas of the home where temperatures are more moderate. Clusters of several hundred to thousands in living rooms, bedrooms, or kitchens are not uncommon.

While lady beetles are a nuisance, they do not directly damage anything in the home, do not infest stored food and do not destroy household furnishings. Their presence is simply an annoying nuisance. Some people have also complained that on very warm days, especially when a person is perspiring, that the

beetles pinch when they land on bare skin. Why this phenomenon occurs is not completely understood but the pinching does not break the skin therefore disease transmission cannot occur. When lady beetles are disturbed, they defend themselves by exuding a yellow-orange body fluid, which is their blood. This defense mechanism is termed reflex bleeding. The blood has a foul odor and can permanently stain walls, drapes, carpeting, etc.

A more serious threat may be that if accumulations of dead beetles are not cleaned up, particles of dried and crushed beetle bodies may become airborne and complicate allergies or asthma if inhaled by occupants.

Controls:

Control options depend, to a large extent, on the number of beetles and the level of tolerance by occupants in any given home. Sweeping them up and disposing of them may be the best option for a few beetles. Vacuuming also will work and nozzle extensions will allow access to those on the ceiling or in hard to reach places; however, be sure to empty the vacuum bag afterwards because live beetles can sometimes find their way out of a vacuum left in the closet.

Sometimes, chemicals can be used to assist homeowners in controlling Asian lady beetles. Using chemical sprays or “fogs” labeled for inside the home will kill exposed Asian lady beetles. However, beetles still secluded or in wall voids will be unaffected. In addition, the dead beetles will still have to be removed after they die, which can be a job that is just as disagreeable as removing live beetles.

Using pesticides as a perimeter treatment during late fall will also help prevent beetles from getting into the home. Use materials that will leave a long lasting residue. Wettable powders, micro-encapsulated and suspended concentrate formulations seem to work best. Homeowners may use Sevin or Malathion at rates labeled for “household invading” or “occasional” pests. In either case, the key to control is to apply the chemicals to

the outside of the home in October while the beetles begin to congregate but **before** they enter the home.

In most circumstances, a combination of several control methods is the best answer to Asian lady beetle problems. Preventing beetles from entering the home is the best and most effective control practice. Sealing them out by caulking cracks and around utility service openings, fixing broken window screens and door jams, plugging cracks in the foundation or roof, and other similar exclusion-type activities will help prevent the lady beetles from entering in the first place.

There is no doubt that the Asian lady beetle is helping to control aphid and scale infestations. What is unclear is whether this benefit outweighs the negative aspects of its overwintering behavior. Regardless on how one might answer that argument, the important point for homeowners is the fact that the beetle is here to stay. Like any other newly introduced animal, populations will probably gradually subside over the next few years. For more information see Purdue University Extension Bulletin E-214 at <http://www.entm.purdue.edu/Entomology/ext/targets/e-series/EseriesPDF/E-214.pdf>

Pinpoint Scab: Wet weather during the apple harvest period can lead to the development of pinpoint scab and other fruit infecting diseases, such as sooty blotch and fly speck. Pinpoint scab can infect fruit up to and during the harvest period if wet weather persists at this time, however, the symptoms of pinpoint scab may not show up until the fruit have been stored for several months. Late season apple scab can also build up on leaves after harvest, resulting in large quantities of primary scab spores the following season, even though a good spray program was followed early this year. Help prevent such problems by maintaining scab fungicides in late cover sprays; also do not stop cover sprays too early. Check the label for days-to-harvest restrictions before making the final application.
(Pecknold)

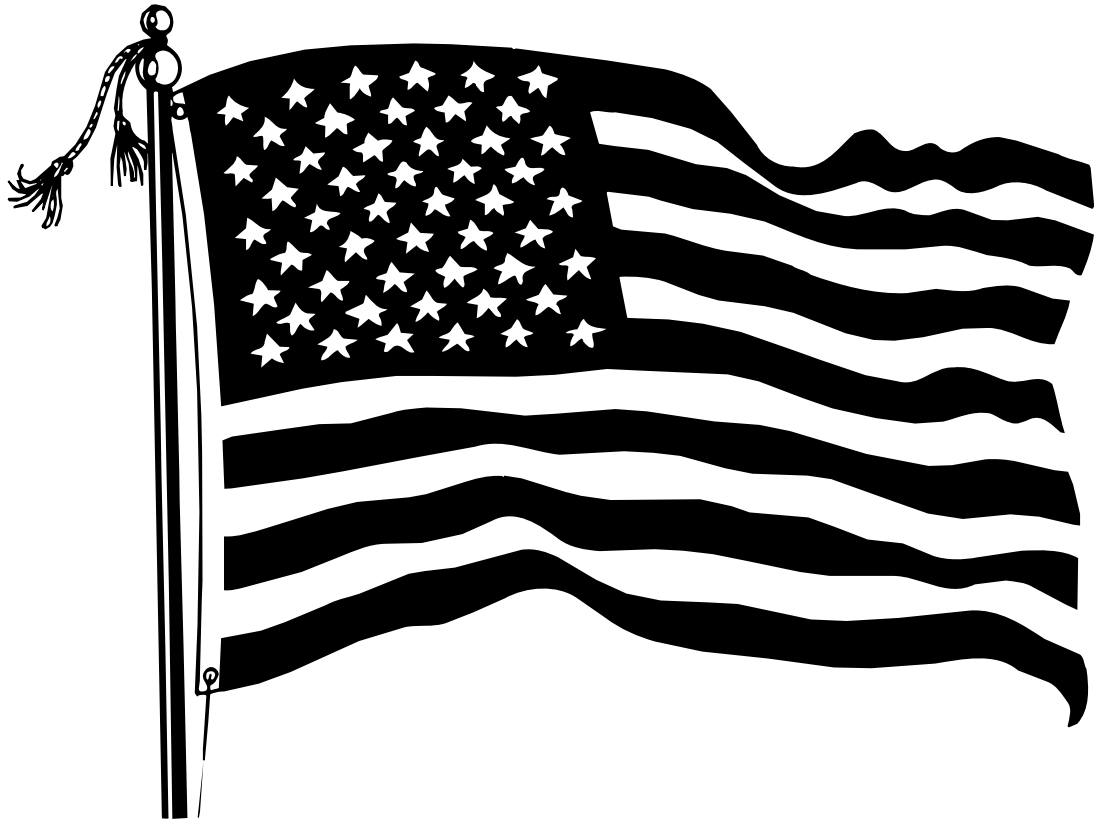
Collar Rot: Late summer is a good time to inspect trees for above-ground symptoms of collar rot. Look for weak trees with premature leaf reddening (especially on Goldens); sparse, yellow foliage; and many small, highly colored fruit. Keep in mind that such symptoms are general stress symptoms that may be caused by a number of factors, e.g. wet feet, mouse injury, trunk decay, root rot, etc. However, trees that show the above-described symptoms *and* also have a canker at or just below ground level are likely infected with collar rot. If collar rot is suspected we advise the use of Ridomil Gold EC in the fall after harvest. Apply Ridomil as soon as possible after harvest so it will be in place before the fall rainy periods begin and possible new infections occur. Also be sure to concentrate your Ridomil treatment on surrounding healthy appearing trees, not just trees already showing severe symptoms of collar rot. Ridomil is best used to prevent collar rot, not cure it.
(Pecknold)

Indiana Horticultural Congress: Planning is currently underway for next year's Hort Congress which will be held January 28-30, 2002 at the Adams Mark Hotel in Indianapolis. We will be developing topics over the next few weeks and could use your input. If you have a burning issue you would like us to address, please let us know soon. Remember, the congress is for the participants, not the organizers, so let us know what you want.

Researchers report... Fruits and vegetables, especially cruciferous vegetables such as broccoli, cauliflower and cabbage, can reduce the risk of stroke by about 32%. We know our products promote health and well-being, let's tell our customers about it too.
(Source: Hope Health Newsletter).

Upcoming Meetings:

January 28-30, 2002 – Indiana Horticultural Congress. Adam's Mark Hotel, Indianapolis. Watch for more details in the future. Visit www.hort.purdue.edu



The Purdue Fruit Team wishes to express our sympathy for the victims and families of the tragedy that occurred on September 11, 2001.

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