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Crop Conditions: Apple harvest has begun around the state with early varieties such as Lodi, Transparent and Pristine. Paula Red harvest is continuing in southern areas. Crops are patchy, due to varying severity of the spring frost. Grape harvest is beginning in the southern part of the state. The hot, dry conditions are slowing the accumulation of sugars, so while we were looking at an early harvest, it looks like things may be back to normal because of the heat wave.

Determining apple maturity: Making the decision on when to harvest can be a very tricky and complicated issue. The longer you intend to store the fruit, the more precise your timing needs to be. For summer apples, most growers only intend to store them until their better quality fall apples come on stream, so storage times beyond a week or two are not that common. Even for fall apples, many growers aim to sell the majority of their crop immediately to the consumer, and try to be done by mid November or so. So since storage times are relatively short, harvest maturity is less important. This being the case, harvest apples when fruit are fully ripe. There are various tests for this, but taking a bite out of a few apples is just as good an indicator as any test. This also applies to apples intended for U-pick.

Bear in mind that even in cold storage, fruit continue to ripen, just at a slower rate. Therefore, fruit intended for longer term storage should be harvested when they are less ripe. There is no single test that will give you the answer but factors such as calendar date, heat unit accumulation, fruit firmness, soluble solids concentration, starch content and ethylene evolution all give answers to a piece of the puzzle. As you can see, this gets complicated real fast. Beyond the taste test, if you are going to perform one test I suggest looking at starch index. This gives an estimate of how much of the starch in the apple has been converted to sugar. This test is quick, easy, and doesn't require expensive equipment. For more details look in the Tree Fruit Pest Management Handbook, ID-93, available at <http://www.hort.purdue.edu/fruitveg> under bulletins. (Hirst)

Timing Retain Sprays: ReTain (AVG) is a plant growth regulator that blocks the production of ethylene. When ReTain is applied to apple, several ripening processes are slowed, including preharvest drop, fruit flesh softening, starch disappearance, and red color formation.

In order for ReTain to be effective it must be applied well in advance of the climacteric rise in ethylene production that signals the onset of fruit maturity. If applied too early the effects may wear off prematurely. If applied too late, a significant portion of the crop may not be responsive to AVG, having already begun to produce autocatalytic ethylene. A second reason for avoiding late applications of ReTain is the 21 day preharvest interval (PHI), which, combined with a late spray date could result in an undesirable delay in harvest.

The label recommends applying ReTain four weeks before anticipated harvest (WBH). This has sometimes caused confusion, as the grower is timing the spray relative to some future, unknown date. A more scientific basis for timing would be to state that ReTain should be applied four weeks before the natural climacteric rise in fruit ethylene, but this is still a future event with an element of uncertainty. The good news is that there is a fairly wide window when ReTain can be applied with optimal results, and a fairly easy way to determine when to apply it.

The best application window for ReTain is about 10 days wide and centered on the 4 WBH date. For early season varieties, such as Gala and McIntosh, start by estimating when you would normally expect to begin harvesting the variety if no ReTain or ethephon (Ethrel, Ethephon II) were used. Now take into consideration the season. Adjust the anticipated harvest date according to how early or late you estimate the season is, then count back four weeks on the calendar. Now mark the calendar from that date through the next seven days. This is your application window for that early season variety.

Watch for good spray conditions with at least six hours drying time within that week and apply the material at the first opportunity. Congratulations! Your ReTain is on at the right time.

Now mark your calendar for 21 days after the spray was applied. This is the PHI, as required by the label. You can't legally harvest before this date.

Repeat the same thought process for later varieties, but keep in mind that later varieties are usually less affected by seasonal variation in maturity than stone fruits or early apple varieties. It is usually unnecessary to account for seasonal variation in fruit maturity for Empire and later varieties. (Dr. Jim Schupp, The Fruit Times, Penn. State University)

ReTain use on apples in stress years: ReTain is a very useful growth regulator on apples that has the following benefits. It will:

1. Delay fruit maturity of any variety.
2. Decrease fruit drop.
3. Improve the condition of treated fruit in storage.

ReTain needs to be applied 30 days before anticipated harvest to achieve the best results and highest effectiveness of the material. Full rate ReTain will delay maturity of most varieties seven to ten days and some very sensitive varieties up to 21 days. Gala and Jonagold are very sensitive to ReTain. Honeycrisp appears to be moderately sensitive and other varieties are less sensitive but still respond to the ReTain treatment. Some growers will use half rate on Gala, Jonagold and Honeycrisp because of the sensitivity, but realize that this also will reduce the response.

ReTain will delay harvest, reduce fruit drop, improve storage condition life and sometimes increase fruit size if the fruit hang long enough. The delayed maturity is very useful to pick-your-own operations. The delayed maturity extends when varieties are available for customers to pick in excellent condition.

Large growers can use ReTain to help program harvest. For example, if a grower has large acreages of one variety like Red Deli-

cious, then a portion of the Reds can be treated with full rate Retain to reduce drop and delay maturity. Another portion of the Reds could be treated with half rate to only slightly delay maturity. This will allow the picking to be more orderly, result in less drop and all the Reds will be picked in excellent condition.

ReTain is a helpful growth regulator with benefits to small and large growers. Time the applications 30 days ahead of anticipated normal harvest and then plan on picking treated fruit later than normal.

Stressful years

Apple trees under stress do not respond well to ReTain treatments. Hot, dry years seem to reduce the ReTain response. In those situations where trees' stress is a factor, consider not applying ReTain or use the higher rate. One third and half rate will not provide good results on stressed trees. ReTain is also more effective closer to the 28 days before harvest timing rather than the 30 to 35 days before anticipated harvest. (Philip Schwallier, Michigan State University)

Control Of Preharvest Drop with NAA: The traditional material used for stop drop control on apples is NAA (Fruitone N), a synthetic auxin. Other synthetic auxins you may have heard of include 2,4-D and 2,4,5-T. Of course you also know Fruitone N as a chemical thinner. Early in the season NAA knocks them off and later towards harvest it sticks them on. This highlights the importance of timing when using plant growth regulators.

Another newer stop drop material is ReTain (see articles by Schupp and Schwallier in this issue). Although both NAA and ReTain can reduce preharvest drop, they do this in different ways. ReTain delays apple maturity whereas NAA does not delay maturity (and may even hasten it) but just reduces the fruit dropping. As Dr Schupp highlights in his article, ReTain must be applied well ahead of the anticipated harvest date so a considerable amount of plan-

ning is required. NAA on the other hand needs to be applied just before apples start dropping, so in this regard can be viewed as a rescue treatment.

Once NAA is applied it takes about 3 days for the activity to kick in. After that you can expect about 7 days of drop control. Rates of 10-20 ppm are usually effective, but knowing exactly when to apply it can be tricky. If the application is made too soon, the effect may wear off before harvest is complete. If the NAA is applied too late, then too many apples will have dropped on the ground before the NAA starts having an effect. Wait until you start to see a few apples drop, and perhaps assist this by bumping a few branches and seeing if any apples drop. Then it's time to apply the NAA. Longer stop-drop control can be obtained with a split application, 10 ppm applied 7-14 days apart. NAA works best when the temperature is over 70F but the way the weather has been lately, this won't be much of a constraint. Be aware that high rates of NAA (20 ppm) can advance fruit maturity.

NAA can be tank mixed and is compatible with a wide range of products. Always conduct a small test before mixing NAA with materials you haven't tried previously. Apply in enough water to ensure good coverage. (Hirst)

Grape Harvest: Grape harvest is beginning in the southern part of the state. As harvest nears, it is very important to monitor grape chemistry. Sampling should occur weekly leading up to harvest. Fruit quality is comprised of several factors of which the most important are sugars, acids, and pH. Other factors such as phenolics and anthocyanins, volatile terpenes, and other flavor and aroma compounds can be very important to wine quality as well. And of course, freedom from rots is an important consideration. Unlike some other fruits, grapes do not continue to ripen after harvest. Consequently, it is extremely important to harvest grapes at

the peak of quality and with the desired parameters for the intended use.

Winegrape growers should have the ability to monitor sugars (refractometer), titratable acidity and pH (pH meter and burette). Each of these factors is important in determining proper harvest time, but none alone can accurately estimate overall fruit quality. It is the balance of sugars, acids and juice pH that is important to the wine maker. And of course there's all the subjective qualities of seed ripeness, skin tannins, etc. But as far as objective determination of fruit quality, sugar, acid and pH are the main factors. Equipment and supplies to measure these parameters can be purchased for about \$500.

With winegrapes, all fruit of a given cultivar is usually harvested from the vineyard or block at a single time to coordinate winery activity and to reduce costs. The fruit is bulked together for processing and eventually all the juice may be blended into a single tank. It is important to carefully plan the harvest date to coincide with the optimum fruit quality from the entire vineyard.

Most vineyards have some degree of variability in aspects such as soil type and drainage, sunlight exposure, wind, insect and disease pest, nutritional status, etc. These variations can have a significant effect on fruit ripeness on specific vines. In addition to variations between different parts of the vineyard, fruit from adjacent vines as well as from different parts of the same vine can vary. Differences are caused by variation in crop load (pounds of fruit/vine size), cluster position, degree of sun exposure, vine vigor, and so on. Much of the variability can be reduced with proper vineyard management. A pre-harvest walk through the vineyard block should identify any clusters lagging in ripeness. In most cases, those clusters will never catch up to the rest and will only reduce the overall quality of the crop at harvest. Now is a good time to drop that undesirable fruit.

Don't expect your workers to sort as they pick. Go through beforehand and eliminate the guesswork. (Bordelon)

Multicolored Asian Lady Beetle, Grapes, and Wine:

The Multicolored Asian Lady Beetles or "Lady Bugs" as most of us know them have become an indirect pest of grapes. Armed with a smelly defense chemical (methoxy-pyrazine), these beetles have the capability of ruining vast amounts of wine. In the past few years, we have found them congregating on certain grapes at or near harvest. They tend to stay in the clusters through the crush and pressing operation, depositing their defense chemical (methoxy-pyrazine) into the juice, leading to a distinctive "Lady Bug" odor and flavor to the wine. Most people consider this herbaceous odor and flavor a serious wine flaw. The problem exists across the wine regions of the eastern US and seems to be mostly a problem where grape harvest occurs in late August and September. The problem seems to be worse in central and northern Indiana, the Great Lakes region, etc. It has not been a serious problem along the Ohio River Valley. We have not seen significant numbers of Asian Lady Beetles showing up in vineyards yet this year, but it is important for growers to scout frequently as harvest nears. A recent graduate, Kate Girsch did a study on managing beetles in grapes and found that a single application of products containing imidacloprid (Provado or Prey) was very effective in reducing MALB in clusters. Another product registered for control of MALB is Venom (dinotefuran). See the Midwest Commercial Small Fruit and Grape Spray Guide (www.hort.purdue.edu/hort/ext/sfg/) for complete information. (Bordelon)

Codling Moths: The second generation of codling moths is now in full flight. As most of you are probably aware, here in the lower Midwest, our generations of codling moths are not as distinct as in the more northern growing areas. Our moth catches seldom drop down to zero for very long between generations. We

had significant catches over the weekend in three different pheromone traps near Lafayette. If you have backed off your insecticide sprays somewhat between generations, it's time to get back to the routine sprays targeted at codling moth. Products rated as good or excellent for codling moth control include Guthion (14-21), Imidan (7), Assail (7), Calypso (30), Clutch (7), and Rimon (14). The pre-harvest interval for each product is listed in parenthesis behind the name. These pre-harvest intervals become increasingly important as you get into harvest of early varieties, so be sure to choose insecticides accordingly. (Foster)

Wooly Apple Aphids: I have received several calls this summer about wooly apple aphids. In addition to being very easy to see in the orchard, wooly apple aphids are unique among the aphid pests of apples in that they feed both on the foliage and on the roots. Although they damage foliage with their feeding on leaves like any other aphid, the most important damage is done by the aphids feeding on the roots, which can cause gnarled and stunted root growth, especially on young trees. The good news is that wooly apple aphids can be controlled with your normal cover sprays of Assail or Clutch or with products such as diazinon or Provado. Notice that the Assail label suggests the higher rate for wooly apple aphid control. The bad news is that we can only control the above ground forms. We really have no way of getting insecticides to the roots to control the root feeding forms. So, the best we can do is to control the foliage feeding aphids. (Foster)

Sooty blotch / flyspeck: There is a lot of confusion regarding the sooty blotch flyspeck complex. I say sooty blotch flyspeck (SBFS) complex because what was once thought to be a few fungal pathogens turns out to be at least 20 little black fungi that all look like flyspeck or sooty blotch. And the biology of these fungi is complex, too. Since both disease complexes usually occur together, and because their disease cycles and control procedures are similar,

the two diseases are frequently “lumped” into a single disease complex that is occasionally distinguished into 1). Sooty blotch, which, as its name suggests, appears as small (up to ¼ inch diameter) sooty brown or black blotches on the surface of developing apples; these blotches may coalesce to cover relatively large areas of the fruit or 2) Flyspeck, which appear as a group of tiny, distinct black dots, with numerous individual dots making up a single cluster. A number of different clusters may be found on a single fruit. Two diseases, and at least 20 (and still counting) pathogens—isn't plant pathology awesome?

I am reminded about this luscious tidbit of plant pathology because the symptoms of flyspeck and sooty blotch have begun to make their appearance. I know this because 1). I'm starting to see spots, and 2). We have accumulated enough hours of post-petal fall leaf wetness needed for infection to occur. This means you probably should have begun spraying, and if you haven't, well, it's time to get on it—assuming you have apples, of course.

Although we are seeing SBFS symptoms right now, fungicides used to control the early season diseases like scab, rust, and powdery mildew, actually control the ascospores of the SBFS pathogens. So, we don't see earlier symptoms. At this stage, the infections we are seeing are from conidia that are being produced off nearby brambles and hardwood trees that were infected by the early season ascospores.

A key principle to manage this disease is to understand hours of accumulated leaf wetness. Different states have developed different levels and standards, with highs of 270 hours (however, in this instance the leaf wetness must occur over a span greater than 4 hrs to be counted) needed in North Carolina, compared to 175-hour period of any leaf wetness identified in Iowa. In Kentucky, John Hartman found 185-251 hours were needed, but did not

stipulate that a minimum of 4 hrs was required to accumulate leaf wetness. We have not yet developed a guideline for Indiana. In the interim, using either the Iowa or Kentucky model should reduce your fungicide usage by 1-3 sprays. The Kentucky model is incorporated into Spectrum Technology software packages for apple and pear disease forecasting.

Sprays: Topsin-M tanked with captan is an effective combination (Ziram is another option). However, some orchards may be experiencing Topsin-M resistant flyspeck and sooty blotch populations. If you suspect you are one of those orchards with SBFS fungicide resistance, or you were late getting started, use Flint, Sovran, or Pristine to eradicate any infections that may have started. Thereafter, captan alone at appropriate intervals (2 weeks or 2 inches of rain; 10 days or 1.5 inches of rain) should provide fair to good control. Commercial losses to SBFS can happen in late summer when heavy rains remove fungicide protection from the “last spray” and extended wet periods result in another 185-251 hours of accumulated wetting occurs prior to harvest. If disease pressure is high, and you haven’t exceeded your four applications of strobies, Pristine, Sovran, or Flint all provide the best protection against this disease complex. We do not know if these fungicides are protecting against the disease, or are effective eradicants, but we do know that they work quite well against this complex. As always, avoid captan within ten days of an oil application--- the results can be ugly. Lastly, make sure you get optimal coverage from your late summer sprays by reducing tractor speed and increasing the volume sprayed per acre.

When to spray: The disease complex takes time before it can develop into visible specks or blotch. Apparently, it takes time for the inoculum to develop, and be released, inoculating apples and other hosts (brambles, pears, trees, etc). Studies done by John Hartman in Kentucky found that bagging fruit at the 175 hours post-petal fall leaf wetness stops this

disease complex. This would suggest that the pathogens aren’t disseminated until 175 wet hours measured from 10 days after petal fall because the bag keeps them out.

From the Kentucky work, it was concluded that it took from 185 to 251 hours of wetting, with no minimum on the wetting, before SBFS symptoms appeared. Bagged fruit, or fruit sprayed with Topsin M, at 175 wet hours accumulating from 10 days after petal fall, stayed free of the complex. As bags would be unable to eradicate existing infections on the apples, it appears that the Topsin M is most likely working as a protectant fungicide.

With our dry weather, hopefully the SBFS complex is less of a problem than in previous years. But, be on guard for a sudden change in weather patterns that bring heavy rain and extended leaf wetness periods that could cause serious issues at harvest. (Beckerman)

Small fruit in high tunnels at Penn. State – what have we learned? A few weeks ago, we removed the single-bay high tunnel raspberry and blackberry plants from the first tunnel that we had planted in 2000. What finally was responsible? It appeared to be a viral problem in the end – blistered, crinkled leaves in the spring, vigor going downhill, and crumbly fruit. I didn’t submit a sample for a virus test, but I was certain the plants had a virus of some sort. Apparently, the somewhat constant travels of aphids, whiteflies, thrips, bees, and other assorted insects between the raspberries in the woods nearby, and our planting finally got to them. In the tunnels, we were using bio-controls only for the crops (part of a pesticide-free growing attempt), but as we always tell growers, when you’re protecting a crop from viruses, the threshold for insect vectors is low, and we apparently exceeded it.

So, what did we learn from it all, besides the fact that we needed to protect the plants from insects? For primocane-bearing raspberries,

the yield increase can be tremendous, along with almost no gray mold. If managed only for the fall crop, I'm comfortable saying that a yield increase of at least double the yields from the field can be expected. If also managed with a summer crop also, 2.5 – 3 times as much yield is reasonable, though the plants are likely to shift the majority of their yield to the summer without serious floricanes thinning in the spring, down to 2-3 floricanes per foot. For blackberries, tunnels made the difference between no crop in central PA, and the equivalent of 25,000 lb per acre of marketable fruit on average. Keeping the rows far enough apart – preferably 7' to 8' at least, is important in keeping the foliage dry, and in decreasing the disease incidence. We tried them closer together, and pulled that planting out in a little over a year. Some growers tell me that 7' to 8' apart is minimum, and if anything, we should be recommending keeping the rows further apart than that. At this point, we're attributing the yield increases to 2 things: 1) a decrease in stress and photosynthesis shutdown from wind, and 2) with adding 3-4 weeks of frost-free growing season onto each end of the season, you've increased frost-free growing time by 50% in central PA. The plants can do a lot with that.

We grew both raspberries and blackberries similarly to how we did in the field, and it worked pretty well. However, there are a few things I would have changed if I had it to do over again. I would have used a fertilizer balanced in nitrogen and potassium from the start, or maybe slightly higher in potassium as compared to nitrogen, instead of starting out following our usual recommendation of applying only nitrogen after initial fertilizer adjustments. I think it would have helped to remove the cover from the tunnel at least once every 3-4 years over the winter. This would have helped with leaching of salts from fertilizer, and allowing the soil to freeze over the winter, which would have helped with management of some soil-dwelling insects. We were build-

ing up a nice population of ants in our raspberry/blackberry tunnel, and had sowbugs and earwigs in our strawberries. The blackberries grew quite a crop of crown borers – so many that we dug out the blackberries three years ago. This was one way to get rid of the crown borers, but the blackberries came back with a vengeance, though we didn't produce any fruit for a year. This is one instance where a tunnel that has the plastic removed for the winter, like a Haygrove tunnel, would have its advantages. We also had two-spotted spider mites, which I expected to see in high numbers. Management of two-spotted spider mites on brambles was easier than I thought it would be (it was a different story with strawberries), with only two releases of predatory mites needed during the life of the planting.

As far as varieties go, from what I could see both in our high tunnels and on growers' farms, I never saw a red raspberry variety that didn't work well in a tunnel, so if you like the characteristics of a particular variety in the field, you'll probably like it in a tunnel. Berry size does increase in tunnels somewhat. It still makes sense to me to grow a cultivar that has a long harvest season, like a primocane-bearer, as long as you have a market for the fruit in the fall.

In strawberries, a plasticulture system in the tunnel worked well. We managed the plants just like we did our field plasticulture field plantings, with a couple of differences. For one, plugs could be planted later – for us, mid-September instead of mid-August. This made the frequent late availability of plug plants less of an issue. The other was that narrower beds of plastic were used, and beds only 18" wide at the top, and 4 rows in a 17'-wide tunnel. With strawberries, management of spider mites was more problematic than with brambles, so we planted the double rows on the plastic closer together (8" apart), and plants within each row further apart, at 18". We planted in the fall, but didn't release predatory mites until

the spring after we took the row covers off. Closer scouting during the fall, and possibly any scouting during the winter, might have inspired us to release predatory mites sooner, when we still could have gotten them under control (maybe). A miticide could have been used, as long as the label didn't restrict the use from protected culture. Strawberries also were the crop where sowbugs and earwigs moved in (never saw THAT before...), but the tunnel had stayed closed over the previous winter, and had numerous other crops in it before the strawberries were planted. After trying an assortment of strawberry cultivars, 'Chandler' was still my favorite. 'Sweet Charlie' didn't work at all, blooming in January. There's a day-neutral, that is expected to be released from Jim Ballington's breeding program at NC State in the next year or two, which worked well for us, and I'm looking forward to that one being on the market also. While we saw yield increases as compared to field production (1.25 lb per plant, as opposed to slightly under 1 lb per plant in the field), they weren't as large as the yield increases we saw with brambles, but as growers point out, you never lose a crop because of rain when you're in a high tunnel. The crop also ripens about three weeks earlier than in field production, giving you the early-season advantage. For frost protection, we'd roll down the sides in late afternoon, and apply either one layer or two of a 1.25 oz/sq. yd. row cover, depending on expected lows. We used supplemental heat one year, but the row cover was a much easier option, so we never used the supplemental heat again.

So, where to from here? Folks have always asked about black raspberries in tunnels, and I always thought the harvest season was too short to make it worth growing them in a tunnel. But, we're giving them a try, comparing the performance of 'Jewel' to a primocane-bearing black raspberry from Pete Tallman, a private breeder, in Colorado. I'll let you know how it goes. (From "Fruit Times", K. Demchak, Dept. of Horticulture, Penn. State. Univ)

Fruit, vegetable and wine email lists: As part of our Fruit and Vegetable Connection website, two email lists are available to which users can subscribe: The "Fruitveg" list is for all fruit and vegetable growers, farm marketers, etc. in Indiana and surrounding states. The "Winegrape" mail list is primarily for the Indiana wine industry. Anyone can subscribe to either list. Subscription to the lists, and their use, is free. The mail lists have been established to allow Indiana fruit and vegetable growers, wine grape growers and wineries, and farm marketers to interact with each other electronically. We envision growers and marketers using this forum for free and open exchange of information and ideas. We also feel that the list can be used to coordinate group purchases of equipment and supplies, and as a forum to buy and sell produce and used equipment and supplies. However, we believe that advertising by commercial vendors is not appropriate use of the mail group. Any statements made do not represent "official" opinions, and Purdue University takes no responsibility for content.

Here's how it works. Subscribe to the most applicable list (or both lists). When you are subscribed, send an email to fruitveg@lists.purdue.edu or winegrape@lists.purdue.edu. Your email will be sent to all those people who have subscribed to that list. Remember, you are sending an email to all the people on the list and not to just one person, so think before you click on the SEND button.

Subscribing is easy. Go to the Fruit and Vegetable Connection website, <http://www.hort.purdue.edu/fruitveg> and click on "mail lists" from the menu on the left. From there click on either "commercial fruit and vegetable" or "wine and grape production". From there you can sign yourself up and subscribe to the list. With widespread frost damage to crops around the state, this might be a good time to post if you have fruit for sale or are looking to buy fruit. The winegrape list has been reasonably active but the fruitveg list has been pretty

much, well, dormant. (Hirst)

New initiatives to improve border security and immigration: The Department of Commerce and the Department of Homeland Security recently announced a series of actions that will be initiated by the Bush Administration under existing laws to strengthen border security and immigration enforcement. Thanks to the US Apple Association for bringing this to my attention. To view the proposal, go to the Purdue Fruit and Vegetable Connection (<http://www.hort.purdue.edu/fruitveg>) and look under “What’s new”. (Hirst)

Safe Harbor Procedures for employers who receiving no-match letters: As you may have heard, the Department of Homeland Security published Safe Harbor Procedures for employers who receive a no-match letter. The following information is from Immigration and Customs Enforcement (ICE) website:

“SSA is not changing its procedures for issuing employer no-match letters, and SSA guidance on how to correct Social Security records is unchanged. However, no-match letters issued by the SSA for Tax Year 2006 will be accompanied by a letter from U.S. Immigration and Customs Enforcement (ICE) informing employers on how to respond to the employer no-match letter in a manner consistent with obligations under U.S. immigration laws. The DHS regulations and the ICE letter describe with specificity what steps employers should take upon receipt of a no-match letter: 1) verifying within 30 days that the mismatch was not the result of a record-keeping error on the employer’s part; 2) requesting that the employee confirm the accuracy of employment records; 3) asking the employee to resolve the issue with SSA; 4) if these steps lead to resolution of the problem, follow instructions on the no-match letter itself to correct information with SSA, and retain a record of the verification with SSA; and 5) where the information could not be corrected, complete a new I-9 form without using the questionable Social

Security number and instead using documentation presented by the employee that conforms with the I-9 document identity requirements and includes a photograph and other biographic data. Employers unable to confirm employment through these procedures risk liability for violating the law by knowingly continuing to employ unauthorized persons.”

It appears that the official notice will be published in the Federal Register early the week of August 13 with the rule to take effect 30 days after it is published in the Federal Register. More information is available from the US Immigration and Customs Enforcement (ICE): <http://www.ice.gov/>. (Hirst, with other information from MAAHS)

Federal Minimum Wage Increase and Poster Requirement:

Wage - The U.S. Congress recently passed the Fair Minimum Wage Act of 2007, legislation increasing the federal minimum wage for the first time since 1997. The new federal statute amends the Fair Labor Standards Act (FLSA) and raises the federal minimum wage in stages: from the current \$5.15 an hour to \$5.85 an hour on July 24, 2007; to \$6.55 an hour on July 24, 2008; and to \$7.25 an hour on July 24, 2009. The new law leaves the \$4.25 youth training wage intact for youth under the age of 20 during the first 90 calendar days of employment.

Applicability - The FLSA applies to employers engaged in commerce with annual gross sales or business volume of \$500,000 or more and employers engaged in interstate commerce or in the production of goods for interstate commerce. Most employers are covered by one of these provisions.

Ag Exemption - Any employer in agriculture who did not utilize more than 500 “man days” of agricultural labor in any calendar quarter of the preceding calendar year is exempt from the minimum wage of the FLSA for the cur-

rent calendar year. A “man day” is defined as any day during which an employee performs agricultural work for at least one hour. Additional exemptions from the minimum wage and overtime provisions of the Act for agricultural employees apply to the following:

- * Agricultural employees who are immediate family members of their employer
- * Those principally engaged on the range in the production of livestock
- * Local hand harvest laborers who: commute daily from their permanent residence, are paid on a piece rate basis in traditionally piece-rated occupations, and were engaged in agriculture less than thirteen weeks during the preceding calendar year
- * Non-local minors, 16 years of age or under, who are hand harvesters, paid on a piece rate basis in traditionally piece-rated occupations, employed on the same farm as their parent, and paid the same piece rate as those over 16.

Poster - Employers will need to post the updated FLSA poster by July 24. Employers may visit the labor law posting compliance page at www.midamservices.org to learn how to obtain this poster for free or call the U.S. Department of Labor at 1-866-487-9243.

Coordination with State Minimum Wage Laws - MAAHS stands ready to assist its members in Indiana, Kentucky and Ohio understand how to determine if state minimum wage laws apply over the new federal minimum wage law (From Mid American Ag and Hort Services (MAAHS))

Temporary Guestworker Programs: MAAHS contracts with MasLabor to furnish seasonal workers through H-2A (agricultural) and H-2B (non-agricultural) visa programs and by recruitment of U.S. workers. MasLabor is a full-service labor compliance and supply company. They offer competent workers for a wide range of duties. This unique relationship between MAAHS and MasLabor offers employers com-

pliance assistance at the local, state, national and international levels. MAAHS Premium members receive special pricing from MasLabor. (From Mid_American Ag and Hort Services (MAAHS))

Preventing Summer Heat Hazards: In many areas of the country, hot weather is already upon us. With warmer temperatures, employees working outdoors should be especially careful of the sun, heat and other hazards brought on by the summer climate. To reduce the risk of heat stress, OSHA recommends that employees: Know symptoms, including headaches, dizziness, lightheadedness or fainting; Block out direct sun and other heat sources; Use cooling fans/air-conditioning; rest regularly; Wear a wide-brim hat, cap or bandana, and sunglasses that block UV rays; and Drink plenty of cool water, about a cup every 15 minutes.

OSHA **resources** are available, such as:

Heat Stress QuickCard®

English: <http://www.osha.gov//Publications/osha3154.pdf>

Spanish: <http://www.osha.gov//Publications/osha3155.pdf>

Protecting Yourself in the Sun pocket card

English: <http://www.osha.gov/Publications/OSHA3166/osha3166.html>

Spanish: <http://www.osha.gov//Publications/osha3168.pdf>

offer additional tips for employers and employees on **preventing** injury and illness while working in hot weather. (From Mid_American Ag and Hort Services (MAAHS))

To contact John Wargowsky, executive director of MAAHS, email: JWargows@ofbf.org or phone: 614-246-8286. The website is <http://www.midamservices.org>

High Tunnel Twilight Meeting: Tour to visit High Tunnels (Extended Season Production) in Benton Harbor, MI, Wed Aug 15 at 6 pm [EASTERN TIME] High tunnels are low-cost greenhouses that are gaining popularity for

production of a large range of crops world-wide. A twilight meeting and research plot tour is scheduled for 6:00 pm on Wednesday, August 15, at the Southwest Michigan Research and Extension Center in Benton Harbor, MI. Anyone interested in how high tunnels can be used to increase produce quality or yields, reduce chemical pesticide inputs, and/or modify harvest seasons for berries, sweet cherries, vegetables, and even cut flowers are welcome. MSU researchers and extension educators will be on hand to discuss the Project GREEN-funded research trials on production systems for various high value crops under Haygrove high tunnels.

To reach the Center, take exit 30 off I-94 (Napier Avenue), travel east on Napier for 2 1/2 miles to Hillandale Road. Turn south (right) and travel to the entrance to SWMREC (about 1/4 mile). For additional directions call 269-944-1477. (Presented by: Dr. Eric Hanson, Dept of Horticulture, Small Fruit Specialist, Michigan State Univ.)

Indiana Farm Sustainability Tour: This series of farm tours has been developed to provide an opportunity for farmers and other rural residents who are investigating ways to diversify their operation and to learn from other diversified Hoosier farmers. These featured farmers have led the way in a variety of innovative practices that add to the sustainability of their farm and community. In some cases diversification involves some new production practice or unconventional crop, in others it involves the development of a collaborative working arrangement between farmers. In each session participants will have the opportunity to:

- Meet one or more innovative farmers to learn from their experiences, their management styles and how they make important decisions.
- Tour one or more farms or processing facilities
- Learn about a specific focus issue from a recognized state specialist in that area.
- Network with others who are interested in

diversifying their farm or rural enterprise.

- Learn about resources that are available.
- August 23: Agritourism– Enhancing the Visitor Experience. Traders Point Creamery. Boone Co.

September 20: Family Farming-Keeping the family in the family farm. Swiss Connection Cheese, Moody Meats. Clay Co.

October 11: Specialty Marketing Partnerships. Birky Family Farms, Valparaiso Farmers' Market, Crème de la Crop CSA. Porter Co.

November 15: Food Trends...A look at consumer food expectations and how we can meet them. Purdue Food Science. *Come tour the food science facilities!*

For more information, refer to <http://www.conf.purdue.edu/farmtours> Or contact Jerry Nelson, Email: jnelson@purdue.edu, Phone 812.886.9582

An Introduction To Starting A Specialty Food Business In Indiana: About the Workshop

- Developing and selling specialty ingredients and foods is one alternative for homemakers and farmers to add value to Indiana commodities. This workshop was developed to serve as a comprehensive overview of the issues associated with starting a specialty food business in Indiana. The overall purpose of this workshop is to provide knowledge, contacts, and resources about starting a new food business in Indiana through formal lectures and question and answer sessions with speakers and entrepreneurs, as well as written materials with information and resources.

Who Should Attend - This workshop was developed for people interested in developing a specialty food or food ingredient business. Participants may be small farmers interested in vertically integrating, homemakers, and current/former entrepreneurs who need a comprehensive overview of the topics to be covered

when starting a new food business in Indiana. For interested individuals, participation in this workshop will allow an easier start-up at Ohio River Valley Food Venture, the shared-use commercial kitchen facility at the Small Business Development Center in Madison, Indiana. Thursday, October 4th, 2007 Lake County Extension 880 East 99th Court, Suite A Crown Pointe, Indiana 46307

For more info: <http://www.foodsci.purdue.edu/outreach/feep/brochure.pdf>

Or contact De Bush, Dept. of Food Science, Purdue University. Phone (765) 496-3832 email: djbush@purdue.edu

Development and Implementation of HACCP and Prerequisite Programs: This course provides instruction for developing Hazard Analysis Critical Control Point (HACCP) programs for the meat/poultry/egg and fruit/vegetable industries. The 2 ½ day workshop focuses on providing the participant with a better understanding of how to develop and implement food safety management programs through HACCP, and prerequisite programs including : Good Manufacturing Practices (GMPs), Sanitation Standard Operating Procedures (SSOPs), Good Agricultural Practices (GAPs), Best Management Practices for Animal Production, as well as general hygiene and sanitation practices. This workshop will include an overview of foodborne hazards and prevention strategies, an understanding of HACCP principles, and an awareness of the regulatory requirements for HACCP programs. A customized tract will be offered for meat/poultry/egg industry participants and another tract for participants representing the fruit/vegetable industry. This workshop is well suited as an introductory course for first time participants and as a good update for participants that have already had HACCP training. The instructor team has been working together for more than 10 years. Collectively, they offer a wide range of expertise and have experience in working with different types of food manufacturers. For further information about the program, please contact Kiya

Smith (765) 496-3827 or Dr. Richard Linton (765) 494-6481.

October 8, 2007 through October 10, 2007

Brochure: <http://www.foodsci.purdue.edu/outreach/haccp/2007/brochure.pdf>

Registration form: <http://www.foodsci.purdue.edu/outreach/haccp/2007/registrationcard.pdf>

An Introduction to Food Processing Plant

Sanitation: The workshop is a one day introduction to United States Department of Agriculture – Food Safety and Inspection Service sanitation requirements for meat, poultry, and egg product processors. It provides an overview of the Standard Sanitation Operating Procedures, selection of cleaners, sanitizers, employee training and sanitation program validation.

This course is recommended for plant managers, quality assurance, sanitation supervisors and other personnel involved in managing daily sanitation activities in meat and poultry processing plants. In this course, participants will learn about sanitation requirements, how to train sanitation crews, and how to validate sanitation programs. For more information: <http://www.foodsci.purdue.edu/outreach/sanitation/brochure.pdf> or contact De Bush, Dept. of Food Science, Purdue University. Phone (765) 496-3832 email: djbush@purdue.edu

Coming Meetings:

Sept. 13 Fall Grape and Wine Workshop. Purdue West Lafayette campus. Watch for more details in the near future. Contact Jill Blume 765-494-1749 or blume@purdue.edu

Jan. 28, 2008: Mid American Ag and Hort Human Resource Conference in conjunction with the Indiana Horticultural Congress, Indianapolis, IN

Jan. 28-30, 2008: Indiana Horticultural Congress, Adam's Mark Hotel, Indianapolis. For more information: www.inhortcongress.org

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