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Fruit ICM News

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Calendar

August 11: Pumpkin Field Day will be held from 4 to 6 p.m. at the Western Branch of the Ohio Agricultural Research and Development Center (OARDC), located on State Route 41, between I-70 and the town of South Charleston. Contact Jim Jasinski at (937) 454-5002 or e-mail jasinski.4@osu.edu for more information

August 19: Ohio Grape & Wine Field Day will be held at the Grape Research Branch, 2625 S. Ridge Rd. East, Kingsville, OH, from 2:00-5:00 PM Activities for the day will include tours of research vineyards and the opportunity to meet and talk to OARDC researchers. Free admission. Contact Greg Johns at 440-224-0273 or johns.1@osu.edu.

August 19: Grape Twilight Tour will immediately follow the Grape & Wine Field Day. The twilight tour will take place from 6:00-8:30 PM at Gene & Heather Sigel's South River Vineyard, 6062 South River Road, Geneva, OH. Advance registration is $15.00 per person and includes dinner. Call Ashtabula County Extension for details at 440-576-9008 or send email to dmarrison.2@osu.edu.

EPA Pesticide Reregistration Performance Measures and Goals

Source: http://www.epa.gov/fedreg/EPA-PEST/2003/July/Day-30/p19353.htm **Background**: EPA must establish and publish in the Federal Register its annual performance measures and goals for pesticide reregistration, tolerance reassessment, and expedited registration, under section 4(l) of FIFRA, as amended by the Food Quality Protection Act of 1996 (FQPA). Specifically, such measures and goals are to include:

- The status of reregistration.
- The number of products reregistered, canceled, or amended.
- The number and type of data requests or Data Call-In (DCI) notices under section 3(c)(2)(B) issued to support product reregistration by active ingredient.
- Progress in reducing the number of unreviewed, required reregistration studies.
- The aggregate status of tolerances reassessed.
- The number of applications for registration submitted under subsection (k)(3), expedited processing and review of similar applications, that were approved or disapproved.
- The future schedule for reregistrations in the current and succeeding fiscal year.
- The projected year of completion of the reregistrations under section 4.

FIFRA, as amended in 1988, authorizes EPA to conduct a comprehensive pesticide reregistration program - a complete review of the human health and environmental effects of older pesticides originally registered before November 1, 1984.

Pesticides meeting today's scientific and regulatory standards may be declared "eligible" for reregistration. To be eligible, an older pesticide must have a substantially complete data base, and must not cause unreasonable adverse effects to human health or the environment when used according to Agency approved label directions and precautions.

In addition, all pesticides with food uses must meet the safety standard of section 408 of the Federal Food, Drug, and Cosmetic Act (FFDCA) 21 U.S.C. 346a, as amended by the Food Quality Protection Act (FQPA) of 1996. Under FFDCA, EPA must make a determination that pesticide residues remaining in or on food are "safe"; that is, "that there is reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue" from dietary and other sources. In determining allowable levels of pesticide residues in food, EPA must perform a more comprehensive assessment of each pesticide's risks, considering:

- Aggregate exposure (from food, drinking water, and residential uses).
- Cumulative effects from all pesticides sharing a common mechanism of toxicity.
- Possible increased susceptibility of infants and children; and
- Possible endocrine or estrogenic effects.

As amended by FQPA, FFDCA requires the reassessment of all existing tolerances (pesticide residue limits in food) and tolerance exemptions within 10 years, to ensure that they meet the safety standard of the law. EPA was directed to give priority to the review of those pesticides that appear to pose the greatest risk to public health, and to reassess 33% of the 9,721 existing tolerances and exemptions within 3 years (by August 3, 1999), 66% within 6 years (by August 3, 2002), and 100% in 10 years (by August 3, 2006). (Note: Although the total number of tolerances existing on August 3, 1996, and subject to FQPA reassessment was initially reported as 9,728, that number has been corrected to 9,721, based on the Agency's Tolerance Reassessment Tracking System.)

EPA is meeting the FFDCA's tolerance reassessment requirements through reregistration and several other program activities. In making reregistration eligibility decisions, the Agency also is completing much of tolerance reassessment, which is helping us meet the time frames mandated by the new law. EPA reassessed the first 33% of all food tolerances by August 3, 1999, and the second 33% of all food tolerances by August 3, 2002.

EPA is focusing particularly on priority Group 1 pesticides, those identified as posing the greatest potential risks. Over half of the universe of tolerances to be reassessed are included in this category,

including tolerances for the organophosphate (OP) pesticides, the Agency's highest priority for review. Carbamate, organochlorine, and B2 (probable human) carcinogen pesticides also are included in priority Group 1. Although EPA is directing most of its resources toward this group, a number of Group 1 pesticides will nevertheless be reassessed in the third 33% owing to the challenging issues they present.

EPA's approach to tolerance reassessment under FFDCA, including the three priority Groups, is described fully in the Agency's document, "Raw and Processed Food Schedule for Pesticide Tolerance Reassessment" (62 FR 42020, August 4, 1997) (FRL-5734-6). In conducting the pesticide reregistration and tolerance reassessment programs at present, EPA is developing measures that show results in terms of outcomes, as well as traditional outputs, as directed by OMB.

Summer Disease Update

Source: Dave Rosenberger, Plant Pathology, Highland, Scaffolds Fruit Journal, Volume 12, No. 21, Aug. 4, 2003

Wet postbloom weather, along with hot, wet weather during July will probably make this a memorable season for development of summer diseases on apples in New York and New England. Summer diseases include flyspeck, sooty blotch, black rot, white rot, and bitter rot.

Flyspeck: Flyspeck ascospores are released shortly after apples reach petal fall. On apples, the fungus requires roughly 270 hours of surface wetting time between early season infection and the time that symptoms become apparent on fruit. In northeastern United States, we are still uncertain of the exact details concerning disease development on apples. However, I believe that infection of fruit by ascospores is relatively unimportant in commercial orchards because our scab fungicides effectively protect fruit during the interval after petal fall.

Ascospores are probably very important for generating new infections in woods and hedgerows that border orchards. If we assume that infections on these other hosts (of which there are many) develop at approximately the same rate as infections on apples, those infections should also become visible and begin producing conidia for secondary infections after approximately 270 hours of surface wetting. The conidia are far more abundant than ascospores, and conidia can blow into orchards from the border areas.

During a dry summer, the secondary infection cycle may not begin until early September and most infections that occur on apple fruit in September will not have enough time to develop visible symptoms before fruit are harvested. During wet summers such as the one we are currently experiencing, secondary infections on fruit can be initiated much earlier, and symptoms on unprotected fruit will become visible during late summer. A wet summer may also allow multiple secondary cycles, thereby dramatically increasing inoculum that is available to blow into orchards during late summer.

Petal fall on McIntosh in the Hudson Valley occurred around May 12 this year. Peak ascospore discharge for flyspeck presumably occurred about 10 days later. Counting from May 22, we reached 270 hours of accumulated wetting in the middle of the 91- hour wetting that occurred June 19-23. Thus, conidia of flyspeck might have been available for infecting apples as early as late June. A flush of symptoms from those late June infections should appear on unsprayed apples within the next few days because we are nearing the completion of another 270-hour wetting accumulation (counting from June 23).

The standard recommendation for controlling flyspeck in the northeast has been a combination of a

benzimidazole fungicide (currently, Topsin M is the only choice) plus captan. However, research conducted over the past several years has shown that Sovran and Flint are at least as effective as Topsin+Captan, and that in some cases they are more effective. Sovran and Flint are more expensive than the Topsin+Captan combination, but this may be a year where one or two applications of Flint in August might pay dividends, especially if one adds the potential benefits that Flint sprays may have for bitter rot control.

Bitter Rot: Bitter rot is a sporadic disease in northeastern United States. We have not really had weather favoring bitter rot since the early 1990's. Bitter rot can be caused by several species of Colletotrichum. Infections occur during hot, wet weather and often appear as decays on the sun-facing cheek of ripening fruit. Decays are tan and slightly sunken. Slimy, pale, orange spores may be evident in the center of fruit lesions during wet or humid weather. In North Carolina and other southern states, bitter rot spreads rapidly and can cause major losses within several weeks if fruit are not protected with fungicide during late summer.

The life cycle for bitter rot in the Northeast has not been adequately studied. I have noted the following scenarios for development of bitter rot under NY conditions:

- Unsprayed fruit have no symptoms at harvest, but develop bitter rot lesions if fruit are incubated at 100% relative humidity until they become senescent. This suggests that the fungus is often present on unsprayed fruit, but that it usually cannot cause decay until fruit become senescent.
- The disease appears only on a few fruits near the orchard borders just prior to harvest. This occurs some years in my fungicide check plots where no fungicides are applied throughout the summer, but I rarely find more than 1-2% of fruit affected.
- The disease may invade fruit after harvest and appear as a postharvest decay. In apple storage surveys conducted during the mid-1990's, we found that bitter rot accounted for 13% of the postharvest decays in one apple packinghouse in 1995.
- Very rarely, bitter rot can become epidemic. This occurred in Michigan in 1995 (see Jones & Shane, Plant Disease 80:1294-1297). Annual epidemics occurred in one Long Island orchard during the early 1990's.

Why does bitter rot act so differently in different orchards and different years? No one knows, but all of the following are probably factors:

- Inoculum levels probably vary greatly from year to year. In the Long Island case, we eventually discovered that horsechestnut trees (Aesculus hippocastanum) and sycamore maples (Acer pseudoplatanus) adjacent to the affected orchard were severely affected with Colletotrichum acutatum and were probably supplying inoculum for the orchard. The role of non-orchard hosts in the bitter rot cycle has not been investigated elsewhere in the northeast.
- The time when inoculum becomes available is probably critical for infections in the northeast. Bitter rot infections occur best under hot, wet conditions. If inoculum does not reach orchards until September, it may be too cool for rapid development of infections.
- Bitter rot is favored by long, warm wetting periods. Severity increases with duration of wetting up to 60 hours. In the northeast, we rarely have long wetting periods during August when temperatures are high enough to favor bitter rot infection.

So why be concerned about bitter rot this year? Extended wetting during May and June promoted bitter rot infections in non-orchard hosts. I have noted that horsechestnut trees in the Hudson Valley are already turning brown due to disease, something that has not happened in recent years. (Diseases other than those caused by Colletotrichum are also involved in blighting of horsechestnuts.) The hot, wet weather of the past week is likely to have allowed extensive dissemination of bitter rot spores in the

Hudson Valley, and early ripening cultivars are already showing some evidence of infection at the Hudson Valley Lab.

Only two fungicides provide good activity against bitter rot at this time of year: Captan and Flint. However, captan must be applied at the maximum label rate; half-rates will not prove satisfactory. Heavy rains can presumably remove captan residues more easily than Flint residues because Flint tends to bind to the waxy cuticle of the fruit. Thus, Flint might perform better if our frequent rains continue.

Either captan alone or Flint alone should provide adequate protection against bitter rot in most orchards. However, where extremely high disease pressure is expected (e.g., adjacent to wood lots or to known source trees such as horsechestnut), growers may wish to apply a combination of Flint at the full rate plus captan at one-half of the full label rate. Neither fungicide is known to have post-infection activity against bitter rot, so timely protectant sprays are essential.

Sooty Blotch, Black Rot, and White Rot will all be controlled by sprays applied for flyspeck and bitter rot. However, given the wet conditions this summer, the interval between the last spray and harvest may need to be shortened to prevent late season infections by black rot and white rot. Honeycrisp is especially susceptible to black rot and white rot, so this cultivar will need careful protection during August.

Peach Brown Rot Risk High

Source: Jon Clements, Extension Tree Fruit Specialist, UMass Cold Spring Orchard, Healthy Fruit Volume 11, Number 17

It goes without saying that with the current weather pattern, the risk of brown rot infection in peaches is very high. Peaches become very susceptible to brown rot infection as the fruit matures (2 -3 weeks before harvest, and as background color changes from green to yellow). You are advised to maintain excellent fungicide protection on peaches as harvest approaches.

Two or three pre-harvest fungicide sprays may be essential to control brown rot if this wet weather continues. Use the best fungicides for brown rot control, such as Indar, Orbit, or Elite. Tank-mixed with Captan or Sulfur, these fungicides should give excellent control of brown rot. (All have 0 days PHI.)

Managing Apple Harvest with ReTain

Source: Win Cowgill, Agricultural Agent, Rutgers Cooperative Extension, Rutgers Cooperative Extension Plant & Pest Advisory July 29, 2003

The cool, cloudy weather during bloom and the weeks following has delayed tree fruit maturity significantly in Northern New Jersey. Summer apples (Jerseymac, Paulared) are running a week or more behind schedule. I anticipate that this will continue to hold true for the Gala cultivars and McIntosh, with harvest running three to five days later than normal.

New Jersey growers focus management strategies on harvesting a crop of optimum fruit quality. Consumer demand, market, storage requirements, and labor availability all influence harvest decisions. One tool that allows for increased flexibility in management decisions is the ReTain Plant Growth Regulator from Valent BioSciences. ReTain is a harvest management tool that slows the maturation process. It is an excellent stop drop material that can delay fruit maturity from 7-10 days and give

growers a longer picking window on many cultivars. ReTain works by retarding the development of ethylene, the chemical that causes ripening. ReTain will increase fruit firmness, decrease watercore and allow for longer cold storage. ReTain may also indirectly enhance fruit size and color by allowing the fruit to remain on the tree longer.

The active ingredient is a naturally occurring product aminoethoxyvinylglycine (AVG), which is produced by fermentation. The fermentation process required to produce AVG is very difficult and very expensive. As a result, ReTain retails for $200-$240 per acre. Because of this, ReTain should only be used in high value blocks with large crops of unblemished fruit.

Fruit treated with ReTain can be picked during the normal harvest period for enhanced retention of firmness in regular cold storage, or harvest may be delayed, allowing the fruit to continue to grow and develop red color for an extended time. Our experience in New Jersey is that ReTain reduces preharvest drop on McIntosh from 10-30%.

Research also indicates that stem-end split (SES) and internal ring crack (IRC) may be reduced on susceptible varieties, such as Gala and Fuji, with the use of ReTain. Although these disorders will not be eliminated with its use, ReTain reduces the stress fluctuations that are thought to cause these disorders.

ReTain must be applied four weeks prior to anticipated harvest, therefore it is essential growers carefully project ripening dates of each individual block on which they plan to use ReTain this season. Important considerations to follow with ReTain applications in New Jersey:

- Use the full rate of ReTain (1 pouch or 333 grams/Acre of formulated product) with an organosilcone surfactant at 0.05% to 0.10 % (v/v).
- ONLY use one of the approved organosilcone surfactants such as: Silwet L77 at 6.5-13 fluid ounces per 100 gallons, or Sylguard 309 at 6.5-13 fluid ounces per 100 gallons. When high temperatures prevail, the lower rate of surfactant is recommended.
- Apply 4 weeks before anticipated harvest (28 day PHI). It is better to apply slightly earlier rather than later, i.e. up to five weeks pre harvest.
- ReTain should be applied with a sufficient amount of water to ensure thorough wetting of the fruit and foliage while avoiding spray run-off. Adjust water volume based on tree size and spacing. No alternate row spraying.
- For optimum results, apply during periods of slow drying weather conditions. No rainfall or irrigation should occur within six hours of ReTain application.
- Do not apply ReTain to trees under stress. They may not respond to the benefits of ReTain.
- Do not tank mix ReTain with other agricultural products.
- NAA may be used according to label directions after the use of Retain if very long drop control is desired, or fruit begins to loosen. Be aware that NAA may accelerate fruit maturation.
- The interaction of ethephon products with ReTain is not well understood, but research continues.

Guidance for using ReTain in the Midwest is available on pages 38-39 in the *2003 Commercial Tree Fruit Spray Guide* http://www.extension.iastate.edu/pubs/PM1282/CTFSPBODY.pdf.

Degree Day Accumulations for Ohio Sites August 6, 2003

Ohio Location	Degree Day Accumulations			
	Base 45° F		Base 50° F	

	Actual	Normal	Actual	Normal
Akron/Canton	2292	2247	1659	1679
Cincinnati	2736	3067	2063	2378
Cleveland	2353	2352	1740	1767
Columbus	2667	2675	2002	2040
Dayton	2546	2745	1891	2109
Kingsville	2023	2151	1445	1604
Mansfield	2169	2383	1543	1789
Norwalk	2261	2348	1649	1769
Piketon	2806	3000	2100	2313
Toledo	2248	2345	1637	1768
Wooster	2403	2266	1757	1680
Youngstown	2070	2213	1455	1635

Pest Phenology

Coming Event	Degree Day Accum. Base 50° F
Oriental fruit moth 3rd flight begins	1448 - 3013
Peachtree borer flight subsiding	1497 - 2309
Oriental fruit moth 3rd flight peak	1660 - 2402
San Jose scale 2nd flight subsides	1662 - 2477
Codling moth 2nd flight subsides	1705 - 2635
Redbanded leafroller 3rd flight begins	1722 - 2209
Lesser peachtree borer 2nd flight subsiding	1796 - 2513
Lesser appleworm 2nd flight peak	1844 - 2359

Thanks to Art Agnello, Scaffolds Fruit Journal

Fruit Observations & Trap Reports

Insect Key

AM: apple maggot
CM: codling moth
ESBM: eye-spotted budmoth
LAW: lesser apple worm
LPTB: lesser peachtree borer
OBLR: obliquebanded leafroller
OFM: oriental fruit moth
PTB: peachtree borer
RBLR: redbanded leafroller
SJS: San Jose scale
STLM: spotted tentiform leafminer
TABM: tufted apple budmoth
VLR: variegated leafroller

Site: Waterman Lab, Columbus
Dr. Celeste Welty, OSU Extension Entomologist

Apple: 7/23 to 7/30/03 (last week's report)

AM: 0.7 (up from 0.3)
CM: 20.0 (up from 19.7)
ESBM: 0 (same as last week)
LAW: 7 (up from 4)
OBLR: 2 (up from 0)
RBLR: 9 (up from 0)
SJS: 59 (up from 40)
STLM: 655 (down from 775)
TABM: 1 (up from 0)
VLR: 0 (same as last week)

Peach: 7/23 to 7/30/03

OFM: 0 (same as last week)
LPTB: 2 (up from 0)
PTB: 26 (up from 16)

Site: Waterman Lab, Columbus
Dr. Celeste Welty, OSU Extension Entomologist

Apple: 7/30 to 8/6/03

AM: 1.0 (up from 0.7)
CM: 35.0 (up from 20.0)
ESBM: 0 (same as last week)
LAW: 8 (up from 7)
OBLR: 3 (up from 2)
RBLR: 19 (up from 9)
SJS: 36 (down from 59)
STLM: 415 (down from 655)
TABM: 0 (down from 1)
VLR: 2 (up from 0)

Peach: 7/30 to 8/6/03

OFM: 0 (same as last week)
LPTB: 0 (down from 2)
PTB: 11 (down from 26)

Site: Medina, Wayne, & Holmes Counties

Ron Becker, IPM Program Assistant

Apple: 7/30 to 8/6/03

STLM:	Holmes: 1960 (up from 1587)
	Medina: 1187 (down from 1458)
	Wayne: 11 (up from 150)
RBLR:	Holmes: 0.7 (down from 1.7)
	Medina: 0.8 (down from 1.8)
	Wayne: 0 (down from 0.3)
CM:	Holmes: 9.2 (up from 4.0)
	Medina: 3.8 (up from 1.6)
	Wayne: 10.4 (up from 10.1)
AM: (average of the sum of 3 traps per block)	Holmes: 4.7 (same as last week)
	Medina: 6.5 (up from 3.8)
	Wayne: 8.3 (down from 10)

Peach: 7/23 to 7/30/03

LPTB: Holmes: 1 (down from 3)

Medina: 0 (same as last week)
Wayne: 3 (same as last week)

OFM: Holmes: 0 (same as last week)
Medina: 0 (same as last week)
Wayne: 0 (same as last week)

PTB: Holmes: 6 (down from 10)
Medina: 0 (same as last week)
Wayne: 12 (up from 11)

Site: East District: Erie & Lorain Counties
Jim Mutchler, IPM Scout

Apple: 7/29 to 8/05/03
AM: 1.8 (up from 0.3)
CM: 6.8 (up from 1.8)
LAW: 22.8 (up from 21.5)
OFM: 4.1 (up from 3.4)
OBLR: 0.0 (first report)
RBLR: 0.6 (down from 3.6)
SJS: 312 (down from 353)
STLM: 702 (down from 785)

Other apple pests: green apple aphid, Japanese beetle, and potato leafhopper.

Beneficials: green lacewing, orange maggot, native lady beetle, predator mites, & brown lacewing.

Peach: 7/29 to 8/05/03
LPTB: 4.3 (up from 3.3)
OFM: 5.0 (up from 4.7)
PTB: 5.3 (up from 3.7)
RBLR: 0.3 (down from 1.7)

Other pests: OFM strikes and bacterial spot

Beneficials: green lacewing

Site: West District: Huron, Ottawa, Richland, & Sandusky Counties - Gene Horner, IPM Scout

Apple: 7/29 to 8/05/03
AM: 1.9 (down from 2.1)
CM: 1.9 (up from 1.3)
LAW: 3.5 (up from 0.8)

OFM: 0.9 (down from 4.2)
RBLR: 1.8 (down from 3.4)
SJS: 4.6 (down from 8.4)
STLM: 354 (down from 377)

Other apple pests: green apple aphid, apple rust mite, and potato leafhopper

Beneficials**:** green lacewing

Peach: 7/29 to 8/05/03
LPTB: 2.7 (up from 0.8)
OFM: 3.2 (up from 0.6)
PTB: 3.2 (up from 2.3)
RBLR: 1.1 (down from 1.5)

Other peach pests: Oriental fruit moth flagging

Beneficials: green lacewing and brown lacewing

Preliminary Monthly Climatological Data for Selected Ohio Locations, July, 2003

Weather Station Location	Monthly Precip	Normal Monthly Precip	Year-to-Date Precip	Normal Year-to-Date Precip	Avg High	Normal High	Avg Low	Normal Low	Mean Temp.	Normal Mean
Akron-Canton	12.55	4.02	31.87	22.84	80.2	82.3	61.8	61.3	71.0	71.8
Cincinnati	5.00	3.75	24.74	26.29	83.5	86.4	64.4	66.1	73.9	76.3
Cleveland	4.89	3.52	24.07	21.99	81.4	81.4	63.5	62.3	72.5	71.9
Columbus	2.94	4.61	23.22	23.43	82.7	85.3	64.1	64.9	73.4	75.1
Dayton	6.32	3.75	24.44	24.34	81.2	84.2	63.1	64.4	72.1	74.3
Fremont	5.42	3.76	22.16	20.44	82.7	83.9	58.7	61.6	70.7	72.8
Kingsville	7.29	2.90	29.82	19.80	78.7	80.7	60.7	61.2	69.7	71.0
Mansfield	6.01	4.22	21.79	25.49	79.4	81.8	60.1	60.3	69.8	71.1
Norwalk	5.66	4.16	24.32	21.13	80.5	81.9	62.3	61.5	71.4	72.0
Piketon	7.81	4.40	29.52	26.70	83.9	84.6	63.0	62.3	73.5	73.5
Toledo	4.04	2.80	20.70	19.41	82.4	83.4	60.8	62.5	71.6	73.0
Wooster	7.17	4.05	26.39	21.43	82.3	83.6	60.2	59.7	71.2	71.6
Youngstown	10.40	4.10	28.40	22.21	79.1	81.0	58.9	58.7	69.0	69.9

Temperatures in degrees F, Precipitation in inches

Record low set: 19th Youngstown 48º

Table created by Ted Gastier, OSU Extension from National Weather Service, OARDC, and local data

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