Fall Pest Management Checklist

**Orchard inspection**
- ✓ Look for trees with foliage turning color earlier than others. May be indication of collar rot or fire blight rootstock infection, systemic herbicide damage, vole girdling, or other damage to tree's vascular system.
- ✓ Check trees, especially those with trunks less than 4 inch diameter, for signs of borers and remove borers if found.
- ✓ Check and repair fencing before deer establish feeding habit.
- ✓ Painting trunks with 50:50 white latex paint mixed with water reduces freeze cracking, may reduce borer infestation, makes it easier to see borer attacks that do occur, and reduces bark exposure to misdirected herbicide spray.
- ✓ Remove unsprayed apple and other host trees tagged earlier, remove undesirable windbreaks.

**Vole control**
- ✓ Mowing is effective at reducing subsequent vole immigration. If using vole bait, remove drops as bait competition and wait for forecast of three dry sunny days in succession.
- ✓ Check vole monitoring stations for activity. Vole damage more likely where grass alley between trees and woods or brushy border has not been regularly mowed through summer and fall weeds cover more than 40% of tree row area. If more than 20% of apple slices placed under shingles with evidence of vole activity are chewed or entirely missing after 24 hours, this indicates potential for serious vole damage.
- ✓ Recheck vole stations for recent activity 2-3 weeks after application to see if reapplication needed.
- ✓ Check vole guards before snow season.

**Scab Sanitation**
- ✓ Apply urea to stimulate leaf breakdown over the winter in order to decrease the apple scab ascospore population next spring. Foliar application before leaf fall is preferable, but ground application also works. If leaf fall is too late in the fall, ground application is effective in the early spring before bud break.
- ✓ Flail mowing in the fall or spring also reduces overwintering apple scab and leafminer populations.
- ✓ See scab sanitation fact sheet at [http://www.umass.edu/fruitadvisor/factsheets/f134.html](http://www.umass.edu/fruitadvisor/factsheets/f134.html)
**Equipment and Storage**

- Check tractor and sprayer for needed repairs. Replace worn nozzles, weak hoses, damaged or blocked filters, and inaccurate pressure gauges. Check for tank leaks, adequate agitation and pump function.
- Clean and service spray equipment, prepare them for winter storage.
- Inventory pesticides. Insure proper storage conditions for leftover pesticides. Make sure that materials that need to be protected from freezing are kept in heated area.

**Recordkeeping, Reading, and Planning**

- Organize record keeping. Record pest damage observations from harvest and review what worked and didn't work well in your pest management program this year, and why.
- Create or revise your pest management plan for coming season. Get specific. Write it down! Yes, every year is different and brings unexpected twists, but it is much easier to adjust an existing plan than to make one up on the fly.
- Consider priorities for winter pruning and impact on pest management, i.e. open canopy to reduce drying time for apple scab and flyspeck, and removal of cankers and fire blight-infected wood.
- Catch up on pest management reading in Extension and trade publications, attend winter meetings.

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**Time for Vole Control**

Meadow voles inhabit the sod in apple orchards and damage trees by feeding on lower trunks. Most of the damage occurs in winter when other food sources become scarce. Orchards at high risk from vole damage are those with young trees that still have smooth bark. Trees with rough bark can still be damaged, but voles prefer the younger trees.

Groundcover habitat management is the first line of defense. Meadow voles like the cover of tall grass to protect them from predators. They will move into an orchard where it has not been recently mowed. Unmowed meadow surrounding the orchard can also increase vole problems.

After harvest, rodenticides can be spread for supplementary vole control. Zinc-phosphide and chlorophacinone are both restricted-use pesticides and can only be used by certified applicators or by someone under the supervision of a certified applicator. A single coverage of the orchard floor with zinc-phosphide after mowing should provide reasonably good protection. This should be done at the start of a three day period of fair relatively warm weather. Rain degrades bait uptake and efficacy. (Snow too, but that is not normally a concern this early in the fall, so much for normal!) To prevent bait feeding by turkeys and other non-target species, instead of broadcasting poison bait, you can place it in feeding stations under shingles or boards, or within sections of PVC pipe.

White plastic guards, hardware cloth or other types of guards that encircle but not constrict the trunk create a physical barrier that discourages vole feeding. The white spiral plastic wraps have the problem of pressing too close to the trunk during the growing season. This creates preferred habitat for roundheaded apple tree borer and traps moisture that may
favor collar and crown rot infection. The spiral guards also have a bad habit of getting caught on themselves and turning into a tourniquet as the trunk grows, gradually constricting the cambium layer and girdling the tree. Application of fine mulch within the tree row can increase vole problems but mulch composed of large wood chip chunks does not. Gravel around apple tree trunks helps discourage voles but is not practical for large plantings.

Mowing and trunk guards are the only options for organic orchards since rodenticides are not allowed with organic certification. For more information on controlling voles, see page 111 of the 2011 New England Tree Fruit Pest Management Guide.

New England Veg. & Fruit Conference

The New England Vegetable & Fruit Conference and Trade Show (NEVFC) on December 13–15, 2011 at the Radisson Hotel in Manchester, NH will include more than 25 educational sessions over 3 days, covering major vegetable, berry and tree fruit crops, as well as various special topics. A Farmer to Farmer meeting after each morning and afternoon session will bring speakers and farmers together for informal, in-depth discussion on certain issues. The Trade Show will have over 100 exhibitors.

You can register online at www.newenglandvfc.org. The pre-registration fee to attend any part or all of the conference or trade show is $95 for the first member of the farm or business and $65 for each additional member (family or employee) when pre-registered with first member. There are reduced fees for students. There is an additional fee of $30 ($20 for students) per person for late registration or walk-ins. Credit cards will be accepted at the door. There is an ATM machine available in the hotel. You will not receive a registration receipt in the mail. Your registration package will be available at the registration desk when you arrive at the conference. Program brochures have been mailed to everyone on our list. If you have not received it, please contact us at 933-2100.

Attendees are advised to book lodging early. Blocks of discounted rooms for the NEVFC are available at both the Radisson and Hilton Garden Inn until sold out. Because of the Presidential Primary activity, hotel rooms may increase in price and/or be limited in availability after the reserved blocks are filled.

Radisson Hotel, 700 Elm Street. 603-206-4109. www.radisson.com/manchester
Rate for conference attendees is $106 plus tax. Please indicate that you are attending the New England Vegetable and Fruit Conference. The code for online booking is: VANDB1.


Other hotels in Manchester and the surrounding area:
* Homewood Suites by Hilton, 1000 Perimeter Rd. 603-668-2200
www.manchesterairport.homewoodsuites.com
* Courtyard by Marriott, 700 Huse Rd., 603-641-4900 www.marriott.com/mhtcy
* Four Points Sheraton, S. Willow St., 603-668-6110
* Holiday Inn Express, S. Willow St., 603-669-6880
* Best Western, Airport Rd., 603-627-2525
* Super 8, Airport Rd., 800-800-8000
* Comfort Inn, Queen City Ave., 603-668-2600
* EconoLodge, W. Hancock St., 603-624-0111
“The Dirty Dozen” – Where’s the Science?
Lebelle Hicks, Board of Pesticides Control, Maine Department of Agriculture
Glen Koehler, Pest Management Office, University of Maine Cooperative Extension

The U.S. Department of Agriculture Pesticide Data Program regularly evaluates a statistically valid sample of the fruits and vegetables consumed by the American public to estimate consumer dietary exposure to pesticides, and the relationship of those exposures to science-based safety standards. The most recent annual summary of the USDA program is based on 2009 data and concludes that overall pesticide residues found on the foods tested are at levels below the tolerances set by the U.S. Environmental Protection Agency (EPA).

The Environmental Working Group (EWG) puts their own interpretation on the data and publishes a “Dirty Dozen” list of produce items that they claim have the “most pesticide residues and are the most important to buy organic.” The EWG methodology is deeply flawed and not in accordance with the fundamental principle of toxicology. The EWG interprets “presence” of a pesticide residue at any level as an indication of toxic risk. The EWG method treats all detections as equal, and incorrectly and misleadingly count as toxic, those detections found at minute levels far below thresholds, which themselves are multiple orders of magnitude below levels found to cause no adverse effects in rigorous scientific studies.

The fundamental rule of toxicology is a math exercise: Risk = Exposure factor times the Toxicity factor. “Exposure” means not only is it there, but also how much is there. “Toxicity” refers to the fact the level of concern is vastly different for different materials. Simplistic presence/absence criteria do not measure either of these factors. The EWG admits that they are not making “risk” judgments, and then proceed to use their “presence” scores to make recommendations for dietary change. According to a May 2011 review of the EWG methodology by noted toxicologist Carl Winter and Josh Katz, the EWG methodology “lacks scientific credibility” and is “insufficient to allow any meaningful rankings among commodities.” Winter and Katz concluded that substituting organic forms of the Dirty Dozen commodities would not lead to any measurable consumer health benefit.

Risk-based residue tolerances on food for each pesticide and its metabolites are set by the EPA and enforced by the U.S. Food and Drug Administration. The standard used by the EPA is a “reasonable certainty of no harm.”

Scientific issues that arise when evaluating pesticide residues found in produce as a function of “presence” as opposed to “risk” include:

> Lumping all pesticides used to protect the food supply together is a lot like making generalizations based on lumping all drugs together. This would put baby aspirin on the same hazard level as oxycodone. They are both used for pain relief, but only one is an addictive, controlled substance.

> Counting every detection, no matter how low, with equal weight is like saying that taking a dose of two aspirin is the same as taking 200 or the entire bottle.
For materials with an established tolerance, the residue levels noted in the USDA data are much lower than the tolerances. USDA used highly sensitive analytical methods that allowed positive detection of residues that are far below any definable concern.

The USDA data include very infrequent but greater than zero positive detections of residue on a commodity that does not have a tolerance for that material. This constitutes a tolerance violation, but when the level detected is far below the tolerance for that material on other crops it does not by itself represent a significant health concern.

It is also important to note that total exposure to any residue is a function of the amount consumed on food plus additional potential for drinking water and residential exposures. These different exposures are accounted for when EPA sets tolerances.

Pesticides used in agriculture (including those allowed for use within organic certification) are subject to intense toxicological testing and exposure analysis. The EPA uses findings from these studies to estimate risks and to establish acceptable risk-based tolerances in food. EPA then regulates the way pesticides are used to insure that food does not exceed those tolerances. The USDA conducts tests to verify that all sources of exposure to pesticides meet the safety standards. The most recent USDA report concludes that overall pesticide residues found on foods tested are at levels below the tolerances.

EWG takes the same dataset that USDA interprets as supporting evidence for the safety for the U.S. food supply and distorts it to fit the EWG agenda. In a free country, one can express an opinion with or without scientific credibility. But it is important to distinguish the difference between scientifically supportable fact versus implications that are without factual basis, that contradict the facts, and which are potentially harmful to the public good. EWG does a disservice to the public good by raising unfounded fear. Unjustified and inaccurate claims that discourage people from eating fresh produce interfere with efforts to educate consumers about the compelling evidence from multiple studies for the health benefits of a diet rich in vegetables and fruits.

It is not clear that EWG even believes their own claims, given the disclaimers in their Dirty Dozen report that “We recommend that people eat healthy by eating more fruits and vegetables, whether conventional or organic” and “The EWG’s Shopper’s Guide is not built on a complex assessment of pesticide risks...” That much is true, their conclusions are built on something other than scientific principles of risk assessment.

**Crop Insurance**

"Remembering that I’ll be dead soon is the most important tool I’ve ever encountered to help me make the big choices in life. Because almost everything - all external expectations, all pride, all fear of embarrassment or failure - these things just fall away in the face of death, leaving only what is truly important."

- Steve Jobs

Where brand names are used it is for the reader’s information. No endorsement is implied nor is any discrimination intended against products with similar ingredients. Always consult product label for rates, application instructions, and safety precautions. Users of these products assume all associated risks.

Orchard Radar weather and pest tracking models at http://pronewengland.org/AllModels/DecisionModels.htm

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