ORGANIC & INTEGRATED PEST MANAGEMENT FOR ELDERBERRIES

Seven Components of Integrated Pest Management

1. **Proper Identification** – know your pests, and make sure you are connecting the perceived damage to the actual cause. If a beneficial insect is doing a good job of keeping a pest under control, treating a perceived problem with a board spectrum pesticide may end up making the problem worse.
2. **Learn pest and host life cycle and biology.** By the time you see evidence of a pest, it may be too late to control it effectively with biological methods. Learn the life cycle stages of pests and the best times to control them.
3. **Monitor a sample area**. Get to know one area of a planting well – monitor for presence or absence of pests, are they distributed evenly or only in patches, are their numbers increasing or decreasing? Do they chance under different weather conditions? Do they have parasites?
4. **Determine action threshold.** – Often, plants can tolerate a fair amount of pest damage, especially if the damage is aesthetic or to the leaves and not the flowers or berries. The action threshold is the point at which the cost of damage is greater than the cost of controlling the pest.
5. **Choose management strategies.** Usually there is more than one method available for controlling the pest. These include: cultural methods – minimizing the food, water and shelter needed by the pest; physical methods – preventing pests from accessing the plant with barriers, traps, pruning or tilling; genetic methods – selecting pest resistant varieties; biological methods – use of predators parasites and diseases of the pest to control it; and chemical methods – chemicals that will kill the pest, these vary a great degree in terms of how toxic they are to non-target organisms and how long they persist in the environment.
6. **Only use OMRI approved chemical controls when all other (cultural, physical, genetic) control methods fail**. If you choose to use OMRI (Organic Materials Review Institute) approved chemical controls, be sure you understand how long they will persist and their impact on beneficial organisms. If you have any questions about what products are allowed under organic practices, contact the VOF office: 802-434-3821, vof@nofavt.org or talk to your certifier.
7. **Evaluate results.** Keep records for next year - how did the action work? Would you take the same action in the future?

Adapted from PennState Extension Pennsylvania Integrated Pest Management "Six Steps of Integrated Pest Management"
http://extension.psu.edu/pests/ipm/schools-childcare/schools/educators/curriculum/contents/sixsteps accessed 7.12.2016

We encourage growers to avoid using chemical controls as much as possible. Many of the broad spectrum pesticides allowed under the National Organic Program regulations are toxic to beneficial insects such as bees and other pollinators. The long-term ecological impacts of the chemicals allowed under organic production are also not yet well-understood. Instead, we recommend promoting the ecological integrity of natural systems by starting with healthy, vigorous plants; managing for high soil organic matter; and promoting biodiversity to attract beneficial insects and soil microorganisms.

RESOURCES ON INTEGRATED PEST MANAGEMENT

Xerces Society Book: Farming with Native Beneficial Insects

Cornell Extension website: Biological Control: A Guide to Natural Enemies in North America

University of California Integrated Pest Management for Elderberries

Minnesota Elderberry Cooperative Pest and Problems webpage

COMMON ELDERBERRY PESTS

Pest	Damage	Sign	Control
Spotted Wing Drosophila	Lay eggs in developing fruit	Larvae hatch in infested fruit, may drop to the ground around harvest SWD can be monitored before fruit begins to ripen with simple traps with apple cider vinegar. Cornell, Michigan and UMass Extension have detailed factsheets on SWD monitoring and control available on the internet. If using netting, monitoring traps can be set inside the nets.	Using barrier methods, beginning in the first growing season, may be one of the most effective organic methods of protecting crops from SWD. Barriers will also protect from damage by birds. Small mesh netting can be placed over bushes. Information on the use of small mesh exclusion netting can be found in a Northeast SARE report from New York Berry Grower Dale Ila Riggs at: http://mysare.sare.org/sare_project/fne14-813/?page=final&view=print The two chemicals approved for SWD control in organic systems: Entrust and Pyganic, are toxic to bees and other pollinators.
Cane Borer	Lays eggs in exposed pith of broken stems/canes and burrow down length of stem. Lay eggs in mid-summer, hatch in following spring.	Cane dies	Prune all damaged canes, remove from orchard, chop and bury or burn at distance from orchard
Elder Borer	wilting of new growth, can death	Small piles of sawdust on the ground at base of older canes	Prune out infested canes and shoots annually. Bury or burn all prunings at distance from elderberry orchard.
Eriophyid mites	Crinkled and cupped leaves		Usually damage is just cosmetic. Predatory mites may keep light to moderate infestations under control. Spraying with pesticides will kill natural predators and can make problem worse. The mites overwinter in bud scales, prune infected branches down to the ground.
Japanese beetles	Lacework-like feeding damage on leaves. Although unsightly, plants can sustain a fair amount of damage from Japanese beetles.	Clusters of beetles	Do not trap as they will attract beetles. Encourage wild parsnips and dill family to attract beneficial predators. Hand pick beetles in the morning into soapy water, exclusion netting for SWD may also help

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(Prepared by Ginger Nickerson, John Hayden and Nicole Dehne, August, 2016)