As most of you know by now, the discovery of the Spotted Wing Drosophila (SWD), *Drosophila suzukii* (a “vinegar” or fruit fly), in Minnesota berry crops (raspberry, blackberry, blueberry, strawberry and grapes), represents one of the most invasive and damaging insect pests we have experienced in many years. Most invasive species gradually arrive and move across the state in 5- or 10-year periods. SWD was first discovered Aug. 10, 2012, and it thus far seems to be everywhere we look for it. Historically, most berry growers in Minnesota have not had to use any insecticides, particularly during the late-season harvests. However, because of SWD’s extensive host range, and the direct damage causing unmarketable berries, this pest could be a true “game changer” for the MN Berry Industry. This is also true for our neighboring states of Wisconsin, where SWD was found in 2011, 2012, and in Iowa, where SWD was just confirmed last week.

**Damage:** SWD has multiple generations per year, which might explain the higher infestation levels in late-season crops (e.g., raspberry) vs. early-season (e.g., June strawberries). Soon after females lay eggs in berries, the larvae (aka, maggots) hatch and feed within the berry. Once maggots are in the berries, these berries are not marketable and it is too late for insecticide sprays. Insecticide applications must be made in a pro-active way, if adult flies are active on a given farm. This pest will be particularly challenging for Organic, or “near-organic” growers who prefer to not use conventional insecticides. Also, berry production in High-tunnels will be affected, given the open construction of high-tunnels that allows for small insects such as SWD to move in and out of the structure.

**SWD Information:** Clearly, a significant amount of Research needs to be done as soon as possible, to begin to understand the biology and management of this pest in Minnesota. Once we were first notified of SWD confirmations from MDA colleagues, we created a new Web page to get the necessary IPM information out as soon as possible; this page and a new fact sheet were made available Aug. 16th, and maintained at: [http://www.vegedge.umn.edu/SWD/SWD.html](http://www.vegedge.umn.edu/SWD/SWD.html). Also, in response to the demand for SWD information, we developed a SWD Rapid Response Team to handle the many calls we have received about SWD from berry growers. With this newsletter, I’m pleased to introduce the SWD Rapid Response Team Coordinator, Dr. Mark Asplin; you may contact Mark at: asple001@umn.edu. Home Gardener questions should go to Jeff Hahn, Extension Entomologist, at: hahnx002@umn.edu. Finally, MDA’s “Arrest the Pest” Hotline (1-888-545-
A Three-pronged Approach is Necessary to Manage SWD:
Based on what we’ve learned from Dr. Rufus Isaacs, Michigan State University, and Nourse Farms in Massachusetts, at least three (3) major steps need to be taken to begin to manage this pest, including:

A)—Monitor for the SWD on Your Farm:  Although the pest has been found in many areas of the state, you really need to know if SWD adult flies are present on your farm.  If the flies are present, there are likely to be females actively laying eggs in fruit.  See the web links on our site for ordering “apple cider” traps, or making one yourself.  If you have questions about trap use, send these to Anthony Hanson (Entomology) at: hans4022@umn.edu

B)—“Clean-Harvest” Berries as Frequently as Possible: All ripe berries should be harvested 3-4 times per week, or as frequently as possible, depending on the weather; this includes the current raspberry harvest underway; time intervals may vary for other fruit operations or varieties. SWD flies are most attracted to ripening, or over-ripe fruit; thus all over-ripe fruit should be removed immediately from your farm (including older berries on the ground), by bagging berries (e.g., black plastic bags) and transporting the bags off farm.  Do not simply bury the over-ripe fruit; this only provides sporadic control.

C)—Apply Insecticides Carefully:  There are essentially 3 classes of insecticides that can be used, and should be rotated to minimize the risk of SWD developing resistance to any specific insecticide. For conventional growers, several pyrethroids are available for use (e.g., Mustang Max, Brigade); an organophosphate, Malathion, and the more recent product, Delegate (a spinosyn material), that is less detrimental to beneficial insects. For organic growers, both Pyganic (organic-certified pyrethrum) and Entrust (spinosyn) are also available. Please see the UofM, SWD Pest Profile for more information, at:
http://www.vegedge.umn.edu/SWD/SWDpp.html  It is critical to be aware of all products labeled for berry crops in Minn., including the Maximum Use Rates, and Pre-harvest Intervals (PHI). Also, conventional insecticides such as Mustang Max are Restricted Use Pesticides (RUPs), that require the applicator to have special Certification before use, or the use of a custom applicator (check with your dealer for details).

A key step with this 3-pronged approach to success, is scheduling the Clean Harvests and Insecticide Sprays, to ensure you adhere to the PHI for a given insecticide, but to also maintain a timely (and aggressive), on-going, clean harvest. This is especially true if you have a Pick Your Own operation.  Essentially, you need to develop a workable schedule of Clean Harvest and Insecticide Sprays that works for your farm, the labor you have, and/or Pick Your Own days.

This is a brief overview; please visit the UofM, SWD Web page for more information on how to set up a trap for monitoring, and approved insecticide recommendations. By conducting more research this fall and winter, and continued research next summer, we will be able to provide more detailed IPM recommendations for 2013; all updates will be available at:  http://www.vegedge.umn.edu/SWD/SWD.html