

Spring IPM for the Asian Fruit Fly By Jo Canning

Advice for this month comes directly from Agri-BC:
“Anticipate SWD, plan for it, & don’t be caught off guard!”

As you know from the integrated pest management training, prevention is the first line of defence against a persistent pest once it has been identified. Here is a quick review of what is going on in the lifecycle of the fruit fly.

Most of the autumn’s last generation females are still hibernating in leaf litter, the last of the left behind fruit and bits of juice, at the base of berry bushes, even in house siding. This first generation can live from 2 to 9 weeks without eating, so getting an early start on control is most important. Time to get to work and be ready for them!

In mid May both SWD (spotted wing drosophila, aka Asian fruit fly) and CFF (the western cherry fruit fly) will emerge, responding to the light and warmth. They begin to walk at 50°C (so can feed on dried juice and old fruit), and begin to fly as the air warms, becoming most active at around 20° C. As soon as the first fruit begins to colour, the female lay eggs. In our yards, this usually means strawberries. In the wild, it means salmonberries.

Following is an effect IPM strategy to guard against SWD -- and if you have cherries, CFF -- arrival in your yard, and to control numbers if already present.

1. If you had them last year you have them this year. The most recent catchment survey data from Agri-BC shows that cherries ARE susceptible, and have been infected by SWD, so if your cherries were affected last year, assume you have either CFF or SWD -- or both -- this year. The IPM program will control both pests. SWD has many generations a year, so you must remain vigilant. Because CFF has only one generation per growing year, laying plastic on the ground (see #4) is a very effective control, along with vinegar traps. There are no non-toxic sprays that work, and Agri-BC tests show even the most toxic are only partially effective. IPM is Agri-BC's recommended most effective control.

If you are concerned your crops will be infested, set out vinegar traps to get an identification. PLEASE DO NOT USE YELLOW STICK TRAPS! These catch all the beneficial insects as well as hummingbirds and the occasional song bird, even the larger ones like house sparrows. The spots on the wings are easily seen with a magnifying glass even with the drowned flies. Agri-BC will also do an ID, but they have a lot of data on where it has been seen in the Lower Mainland so if an infected area is next to you, you are probably infected, but can delay its arrival with preventive strategies. Don't worry, you'll know soon enough. Even rigorous IPM will not eradicate SWD -- it is just too invasive.

2. Blackberries are the primary vector between domestic infestation and the wild berries. If you have blackberries that border a wild area next to your property, begin a systematic pruning and removal program. The key is to not let them bloom, and as blackberries fruit on second year wood, you can still have a hedgerow if you want it. Creating isolated islands of infestation is an important IPM strategy because SWD may be called a fly, but it doesn't really fly. Like most fruit flies, it mostly hovers and hops from berry to berry. If you have blackberries along your property line, contact the city and ask they be removed (not just mowed down/chipped with debris left) citing that they are an infected, invasive plant that can ruin your home grown berries and tree fruits. If the city will not remove the plants completely, insist the city mow them to the ground before they bloom, and haul

debris away. Being firm, yet insistent, is okay as the following is what Agri-BC has told commercial and home berry growers in a recent public announcement:

“.....Hedgerow management is absolutely essential. Surveys show that early in season, hedgerows sometimes escape infestation, but by the beginning of July, show sometimes exponential infestation rates. By August, the hedgerows – of all berry types, not just Himalayan blackberries – have higher rates than adjacent fields. This is where the fly will overwinter.”

3. Before the first week in May, cover the ground with heavy plastic around domestic berry stands and beneath cherry trees to the drip line. You can buy construction plastic by the roll at the building centres. If you don't need a lot, share the roll with a fellow berry grower. Keep the plastic snug around tree trunks and canes but be sure to monitor for mould or the wood damage it can create. If you are using Tangle Foot on your trees, you make the bands do double duty. The combination of plastic and Tangle Foot will exclude ants and other pests, too, until warm weather mid-June (at latest), when you can remove it, and when the trees and berries will need watering.

Row cover (Reemay) works less well on ground because it does not make it heat up to kill young pests, it lets air and light in, and the fabric tears easily from sticks, rocks, etc. Better to use it to cover ripening berries if you can't locate no-see-um netting.

4. Buy no-see-um netting or row cover/Reemay (available at the garden centres) to cover your berries AFTER they flower, and have begun to set fruit. Both CFF and SWD attack once the fruit begins to show colour. Remember: mosquito netting is over 1 mm mesh, and you need a mesh that is UNDER 1 mm, which is what excludes no-see-ums and SWD. And be sure to check your row cover for holes. I use a duck tape over damaged spots. The heavier cover, often called "frost blanket" interferes with light penetration and air circulation, so if you are buying row cover, get the lighter gauge and (usually) less expensive fabric.

5. Buy vinegar traps (some garden centres, Home Depot and Home Hardware throughout the Lower Mainland carry them) or make them from glass or plastic bottles. Poke very small holes in bottle lids/ upper sides (the tip of an ice pick works well) from outside, and fill half full with apple cider vinegar. Old yogurt containers also work well. Hang several very low in tree, or on ground in and around all berry crops. You do not need fancy trap refill products: studies show apple cider vinegar is their favourite.

Netting plus traps remains the best IPM choice.

6. Remove susceptible crops if you cannot manage them against SWD. Do not haul them -- you are spreading the fly. Burn them.

A reminder about trap use:

- Harvest early. The fly will choose nice plump fruit over the trap in most cases.
- No specific baits are yet developed for SWD, so traps will catch other fruit flies and, unfortunately some of the tiny beneficials. The trap may get full, but it won't all be SWD.
- Keep vinegar traps filled with fresh bait, and empty ONLY in the sink or flush into the toilet

Harvest tip:

Put paper or old sheet on ground around plants at harvest to catch the culls. It makes them easy to see and to gather for disposal. **DO NOT COMPOST CULLS!** Freeze to kill, then bury 24 inches.

Infected Wild Hosts As of 21012 Survey

- Red elderberry (the most infected)
- Himalayan Blackberry (second most infected, it carries infestations into the wild stock)
- Salmonberry
- Thimbleberry
- Salal
- Oregon grape.

In Review: Best Management Practices for SWD & CFF:

1. Stay informed, tell your neighbours, talk to your city and district representatives about controlling Himalayan blackberry
2. Talk to your local garden centre about getting no-see-um netting in bulk / by the roll. It can be hard to find, but once word gets around they will have all the customers they need to sell it.
3. Think about prevention:
 - Change berry varieties
 - Cut the blackberry hedgerows before bloom
3. Utilize a variety of tools and IPM management techniques throughout the season
 - Cover the ground in spring
 - Cover the bush after flowering
 - Hang vinegar traps all season
4. Focus on sanitation during harvest time:
 - Harvest early, clean, and often
 - Do rigorous autumn clean-up
 - LEAVE NO CULL BEHIND!
5. Control Spread:
 - Trim back the hedgerows to create "no fly zones" between domestic and wild areas
 - Do not share infected berries unless frozen or cooked
 - Do not transport infected plants to land fill. Chop, burn, then bury.

You do not have to give up berry and cherry growing: just get smart, and be careful. The following have -- so far -- seemed to escape infestation in most cases:

- Early strawberries: June bearing only, NOT ever-bearing OR day neutral. Hood, Rainier, Totem are earliest. According Agri-BC Totem is so far the least affected.
- Early raspberries: Malahat, or Willamette. The last is recommended by Agri-BC.
- Early blueberries: this crop is generally a poor choice unless rigorously managed, but Duke is recommended as the best choice for this area by Agri-BC, and Bluecrop the absolute worst.
- Late grapes needing low heat index: Bath, merlot, golden Muscat, syrah, zinfandel.