

hardiness in Essex County in 2009 and 2010. The berries are red to dark red, with a weak neck.

Glen Ample

**Glen Ample:** Glen Ample was early, large and firm, However the flavour was mild and further

testing of this variety is needed. It was not overly productive but

large berry size made it appealing. The fruit is round, red, with-

rust was prevalent on Jaclyn.

**Polka:** Fruit is well formed and firm with tight drupelets. Polka is interesting for its excellent fruit quality and good yields. Fruit colour is bright red tending to

Growers Association who supported this and other variety test plots with funding from the Farm Innovation Program.

## Monitoring for spotted wing drosophila in Ontario in 2011

Spotted-wing drosophila (SWD) is an invasive vinegar fly from Asia that can cause extensive damage to soft-skinned fruits before harvest. First detected in North America in 2008, this pest has spread quickly. SWD is different from other vinegar flies because it lays eggs in healthy ripening fruit, rather than overripe or damaged fruit. This means that SWD larvae may be in fruit at harvest, and consumers are likely to notice larvae in fruit when it is cooked or frozen. Infested fruit breaks down quickly, and is especially leaky, reducing the shelf life. Blackberries and raspberries are preferred hosts, followed by blueberries, cherries, strawberries and a wide range of other soft-skinned fruit.

OMAFRA staff coordinated a survey for SWD throughout Ontario in 2011. The goal was to determine if, when and where SWD was active, and to monitor the level of activity. Information on pest activity was provided weekly through OMAFRA newsletters and our SWD website (visit: [ontario.ca/spottedwing](http://ontario.ca/spottedwing))

**Monitoring:** Traps for SWD were located at over 60 sites in 16 counties. We used vinegar fly traps (purchased from Contech Inc.), baited with apple cider vinegar (ACV) from H.J. Heinz

Ltd. Most traps were placed in the plant canopy (near fruit, in the shade), but some traps were placed in adjacent woods or hedgerows. The apple cider vinegar was replaced weekly, and samples were collected and processed from early May until December. We moved traps from early-season crops such as strawberries and apricots to late-season

crops such as grapes and tomatoes, and attempted to monitor for SWD as fruit began to ripen until well after it was harvested.

**Monitoring results:** The first field detection of SWD was in mid-August in Niagara region, followed by first detections in Essex, Kent, Oxford and Norfolk in late August. New positive sites

and SWD numbers increased through the fall and by late November, SWD was present at over 50% of monitored sites (36 sites) in 12 counties (Figure 1). Most trap captures occurred after harvest (Figure 2). Highest numbers of SWD were trapped in Essex and Kent counties, and trap catches continued into November and early December at some loca-

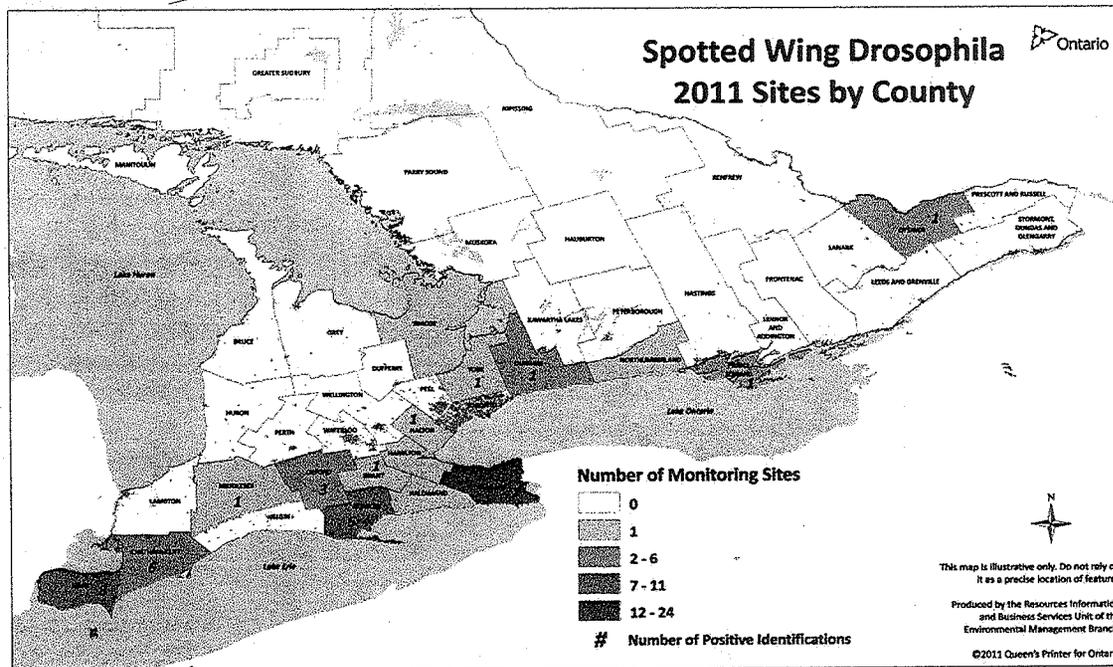
tions. SWD were found in traps near peaches, apricots, raspberries, blackberries, day-neutral strawberries, blueberries, grapes, and tomatoes. Although we were able to rear SWD adults from fruit at some sites, no commercial crop losses reported.

### Conclusions:

We believe that SWD has spread to many of Ontario's fruit-producing regions. All growers should be monitoring for this pest in 2012 in susceptible crops. Late harvested crops are at the greatest risk.

The traps and bait we used trapped many types of small insects and drosophila, and presented some problems. Magnification is needed to identify SWD male and female flies. Research is needed to develop more attractive traps and/or baits.

We wish to thank the many private consultants, Agriculture and Agri-Food Canada, and University of Guelph staff, as well as numerous summer students who helped us collect and process samples in 2011. Thanks to H. J. Heinz Co., the Ontario Highbush Blueberry Growers Association and the Niagara Peninsula Fruit & Vegetable Growers Association for their contributions.



## THE GROWER

# Management strategies for spotted wing drosophila in Ontario

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Spotted wing drosophila (SWD) is attracted to and can lay eggs in healthy ripening fruit, rather than overripe or damaged fruit. Cherries, blackberries and raspberries are preferred hosts, followed by blueberries, strawberries and a wide variety of other soft-skinned fruit. To prevent damage, growers and consultants must learn how to monitor and manage SWD in susceptible crops. Since SWD is a new pest in Ontario, there are many unknowns in terms of its biology and potential impact. An integrated pest management strategy includes cultural controls, moni-

toring and the use of insecticides. SWD is a manageable pest.

**Monitoring:** Susceptible crops are only at risk when SWD flies are present. While there are no established action thresholds for SWD, monitoring with baited traps will help to detect flies early and trigger management intervention. Use the following guidelines for monitoring:

- Monitor when temperatures are consistently over 10°C and/or when fruit starts to form.
- Hang traps in plant canopy, or set firmly in the ground within the plant row, in a shady location. Use at least two traps per site, and for sites larger than two hectares, use one to two traps for each additional hectare.
- Place some traps in woods or hedgerows adjacent to crop fields, where alternative hosts may encourage the build-up of early

season populations.

- Empty traps and replace bait weekly. Use magnification to identify males and females.
- Watch for late-season build-up of SWD, especially in late-season raspberries, blueberries, tender fruit and crops in high tunnels.

**Cultural Controls:** Cultural controls may help reduce breeding sites that encourage the build-up of SWD populations over the season. This could reduce the risk of injury and crop loss from SWD.

- Remove alternative wild hosts from areas near the crop.
- Shorten picking intervals where possible. Pick early, clean and often.
- Destroy cull fruit to prevent larvae from completing their development. Do not leave culls exposed for more than one day.
  - Remove and bury fruit at least 30 cm deep.
  - Cull fruit can be solarised by

covering with plastic and sealing the edges.

- Crush or mow fallen fruit to promote desiccation of larvae.
- Avoid introducing SWD. SWD can be easily introduced into new areas in infested fruit and containers. If you bring produce to your farm from other farms or areas, bury or carefully dispose of waste fruit and containers within one day or less.

## Chemical Control

Emergency use registrations for Delegate, Entrust, Ripcord and Malathion were in effect for 2011 only. These products kill adult SWD flies by direct contact or exposure to insecticide residues on fruit and leaves. We expect to have new registrations with short pre-harvest intervals in place for 2012.

- Start spray program when SWD flies are trapped in the

region, and susceptible fruit begin to ripen. If infested fruit are found, pick the field clean before applying insecticides.

- Protect fruit throughout harvest. Check the pre-harvest intervals and consider the residual activity of insecticides.
- Check OMAFRA newsletters and the SWD webpage for updates on emergency use registrations for 2012.

Remember that eggs and larvae are under the fruit surface, and not susceptible to most insecticides. In addition, the hole created by the female's ovipositor creates a wound in the skin that allows for entry of pathogens and rapid fruit breakdown.

For more information visit [ontario.ca/spottedwing](http://ontario.ca/spottedwing)

## Laurel: new strawberry cultivar

'Laurel', formerly tested as K93-20, is a new short-day strawberry cultivar introduced from AAFC-Kentville in 2012. 'Laurel' is from 'Allstar' x 'Cavendish', a cross meant to improve on the firmness, colour uniformity, and disease resistance of 'Cavendish.' Ripening in the mid-season, 'Laurel' produces large, aromatic, flavourful fruit especially suited to please pick-your-own and direct marketing customers. Trial marketable yields are best described as medium; the highest being 15 t/ha (~10,700 quarts/acre) in 2011 at Kentville. Growers in eastern Canada who have tested 'Laurel' as a commercial

