Spotted wing drosophila (SWD), *Drosophila suzukii* (Matsumura), was first detected in California in 2008. The pest continues to catch growers by surprise as it spreads across North America and has now been confirmed in 41 U.S. states (Fig. 1) and seven Canadian provinces (Alberta, British Columbia, New Brunswick, Newfoundland, Nova Scotia, Ontario, and Quebec). In 2008, infestations in California and the Pacific Northwest were estimated to cause $511 million in losses to the blueberry, cane berry, cherry, and strawberry industry.

These softer fruits, including plums, grapes, and figs, are particularly susceptible to egg deposition. Larvae developing in fruit make it unmarketable. Apples, pears, peaches, and nectarines are potentially susceptible but are typically harvested before fruit are soft enough for egg laying. All commercially produced fruits are managed for SWD in such a way to meet a zero tolerance for infested fruit in the fresh market. Management has been a challenge because of difficulties detecting and predicting infestations as well as the very short lifecycle of the pest. Under ideal temperatures, eggs deposited one day can become new adults in as little as 10 days.

“SWD has significantly changed the model of small-fruit production,” according to Vaughn Walton, research entomologist at Oregon State University and director of a team of scientists working on SWD. “There are growers now spending $250 to $350 per acre on materials just to manage SWD, and this does not include labor or fuel to make the applications.” Growers in eastern states have reported insecticide costs up to $400 per acre.

The affected small-fruit industries in Oregon have an annual farm-gate value of around $200 million. Before SWD, less than $1 million was spent on pest management, primarily on fungicides, but last year, the costs to these industries to manage SWD were estimated to be $15 million.

**Key biology**

The SWD is native to Southeast Asia, first detected in Japan in 1916, and has been established in Hawaii since the 1980s. SWD surfaced in Spain in 2008 and is now established in many countries in western Europe. Its ability to be transported in infested fruit speeds its spread.

Typically, *Drosophila* species infesting fruit deposit eggs in only overripe or damaged fruit. SWD females however, have a serrated ovipositor (Fig. 2a), allowing them to lay eggs under the skin of ripening fruit. Freshly injured fruit may be marred by oviposition scars, but these are difficult to detect without magnification.

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**Fig. 1.**

States with confirmed spotted wing drosophila (SWD) detections by year.

Source: Hannah Burrack and colleagues.