

As this writing, it's hard to believe that strawberry harvest is almost complete in the Willamette Valley. With an early season and a mild winter this year, spotted wing drosophila (SWD) pressure to caneberries and blueberries has arrived early than expected. Some growers have started SWD spray while raspberry and blueberry fruits start to color. Growers are advised to monitor SWD field activities before starting insecticide applications.

Integrated management of two key pests in berries

Minimizing conflicts between pollinators and invasive pest management? Increasing concern for honeybees and native pollinators in crops affected by invasive pests may be the result of increased usage of insecticides to manage these pests. Often, when pests arrive in a new area, lack of knowledge about pest biology, behavior, and other factors mean that the only management tools available to growers are insecticide sprays. Spotted Wing Drosophila (SWD) is one such invasive pest that has transformed pest management practices in Oregon. Currently, SWD is a key pest in many bee-pollinated crops, and honey bees are potentially susceptible to pest management practices in any crop that has blooming weeds along borders or on the ground where spray drift may occur. Brown Marmorated Stink Bug (BMSB) is an emerging invasive pest in Oregon that may also affect these pest management practices. Both of these exotic pests are primarily managed with insecticides, and increased frequency of insecticide applications increases potential for non-target effects. Reduced-risk materials can lack efficacy for these invasives and EPA Section 18 exemptions for special use labels of broad-spectrum insecticides means that pest management practices are going back in time.

SWD start to damage crops as they ripen as opposed to BMSB, which can cause season-long damage. The time for harvest of early crops

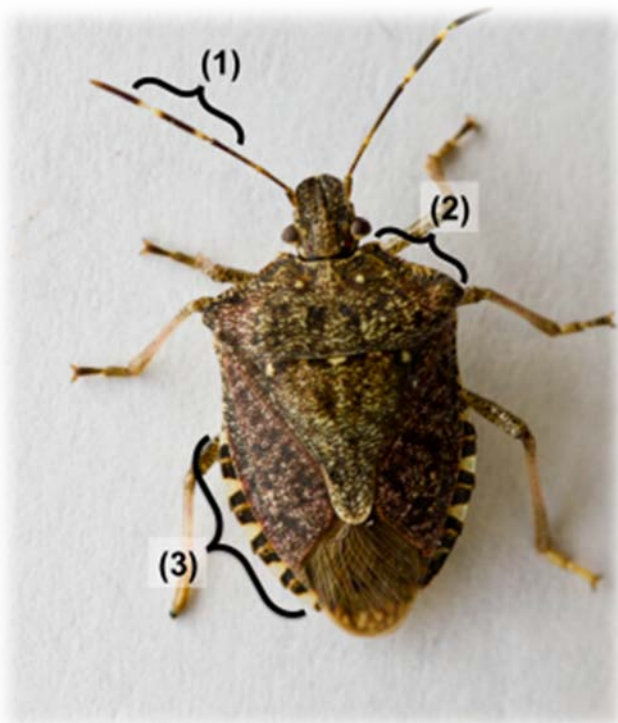
are quickly approaching in the Willamette Valley. Many growers already know how to manage SWD, but management of this pest may have unintended consequences because of these management practices. Currently most growers apply pesticides in order to prevent crop damage. If you plan to export fruit, be aware of the minimum residue levels allowable for the country of destination. For more information on SWD including MRL residue tables visit spottedwing.com. For more information about BMSB please see BMSB.hort.oregonstate.edu.

These pest management practices may impact honeybee colonies: Recent annual honeybee colony losses (averaging 30%) are alarming to both beekeepers and growers, who are interdependent for their economic viability. These significant colony declines have been attributed to a combination of stress factors such as parasites and diseases, poor nutrition and pesticides. Growers can play a significant role in minimizing pesticide exposure to foraging bees and promote bee health. Following are some suggestions for the growers to minimize pesticide exposure to foraging bees:

- 1) Minimize prophylactic application of pesticides and fungicides.
- 2) Choose the least broad spectrum and toxic control options from all the available effective insecticides.
- 3) Please avoid using insecticides with long residual hazard to bees.
- 4) Plan spraying of insecticides either late in the evening or early in the morning when the bee foraging have largely ceased.
- 5) Minimize spray drift by calibrating sprayers and properly aiming nozzles at the part of the crop to be protected.
- 6) Blooming weeds (e.g. dandelions) must be controlled before spraying as bees might be foraging on the blooming weeds.
- 7) Inform beekeepers in advance about the planned sprays, so that they can take appropriate precautions if feasible.

Please refer to Extension publication [PNW 591](#) for more information on how to protect honeybee health by reducing pesticides exposure to bees.

Identifying and reporting BMSB: This pest has been found in many small fruit production regions. Early feeding damage reduced crop loads, and later feeding may result in unsightly blemishes to these fruit, resulting in downgrading and economic losses. To date, no economic losses have been recorded for this pest from Oregon, but severe damage has occurred in other US growing areas where BMSB has invaded. Early identification of BMSB occurring in commercial crops is of great importance to our agricultural industry. Reports of BMSB can be made to BMSB@oregonstate.edu.



Identifying BMSB: Brown marmorated stink bug (BMSB) adults are flat insects (approx. 5/8 by 3/8 inches) with drab coloration, although nymphs are brightly colored. Key characters for identifying adult BMSB (photo below) and distinguishing them from similar species, are (1) the distinct light light bands on the dark antennae, (2) smooth "shoulders", and (3) abdominal margins have a distinct banding pattern. If these three characters are present on your Oregon specimen it is BMSB. The common name, marmorated, refers to the color pattern of the insect, which vaguely resembles marble. Like other stink bugs, a foul odor may be produced by BMSB when they are disturbed.

Fungicide resistance to Botrytis in raspberries

A recently released research summary by the WA Raspberry Commission reported Botrytis resistance to some fungicides. Among over 100 Botrytis isolates collected from over 10 commercial raspberry farms in Whatcom county of WA, it was found that Elevate (Fenhexamid) has been over used and resistance to it is widespread. It is suggested that the use of Elevate in fields with high resistance should be held off until sensitive wild-type populations become predominant. Rovral (iprodione) has not been used for a long time and can still be utilized at a minimal level. Pristine may develop resistance if it is overused. Switch (cyprodinil+ fludioxonil) showed good sensitivity against almost all Botrytis isolates tested. Our situation in Oregon will not be the same. It is always dependent on the material growers are using or overusing. Remember, rotation of fungicides will always reduce resistance.

Rate Increase of Gowan's Malathion 8 Flowable

Oregon Department of Agriculture has issued a Special Local Needs (SLN) label for Oregon blueberries that allows an increased rate for control of SWD. The original rate was 1.25 lb ai/A; the new SLN label allows two applications at 2.5 lb ai/A. The increased rate will increase the longevity of residual control in the field and, hopefully, reduce the total number of insecticides needed per season for control of SWD. For Oregon caneberries, one extra application was added to a total of four applications per growing season. The PHI and spray interval remain the same. Having available an extra application will help caneberry growers manage SWD during the long harvest season. If fruits are exported to foreign markets, please check the most recent [MRLS tables](#) because EU, UK, and Taiwan set extreme low maximum residue levels for Malathion.

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