

stink bugs – late season pest of concern

The Pest Management Transition Project (pmp.wsu.edu) has focused education efforts on the fit of newly registered, organophosphate alternative insecticides in apple IPM programs. These new insecticides primarily target codling moth and leafrollers. Some of these



Figure 1. green stink bug *Acrosternum hilare*

insecticides also provide control of certain sucking bugs, like aphids, but none provide effective control of stink bugs, which can be a late season pest of concern in both apple and cherry. There are several species of stink bug that impact tree fruit crops in Washington. These in-



Figure 2. consperse stink bug *Euschistus conspersus*

clude the consperse stink bug (Fig. 2), green stink bug (Fig. 1), red-shouldered stink bug (Fig. 4), and *Chlorochroa ligata* (Fig 5).

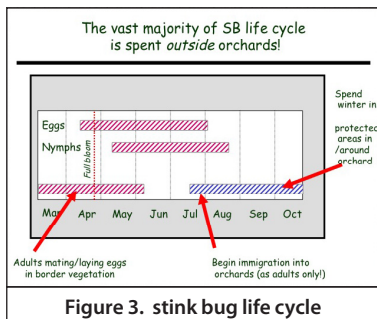


Figure 3. stink bug life cycle

Stink bugs overwinter as adults and become active in the spring (Fig. 3). Adult stink bugs lay eggs on a wide variety of native shrubs, including wild rose, red osier dogwood, bitterbrush, and wild currents and some perennial

life cycle

weeds, such as mullein, mallow, and white clover. Nymphs feed on these native plants, and mature to adults in mid-July. While some injury to sweet cherry has been attributed to early season feeding by overwintered stink bug, most injury to apple and cherry occurs in mid to late summer when new adults move into the orchard from outside habitats. Visit Orchard Pest Management online (jenny.tfrec.wsu.edu/opm) for more information on stink bugs and their behavior.

monitoring

Recently, high populations of two stink bug species (*Chlorochroa* and consperse) have been reported attacking late maturing sweet cherry (Fig. 5) and are now beginning to move into apple orchards. It can be difficult to determine when stink bugs begin



Figure 5. *Chlorochroa ligata*

moving into orchards because they are primarily active at night and hide during the day when they detect movement. Pyramid traps (Fig. 6) and commercial lures can be used to monitor the consperse stink bug. Traps may also be effective in detecting adult

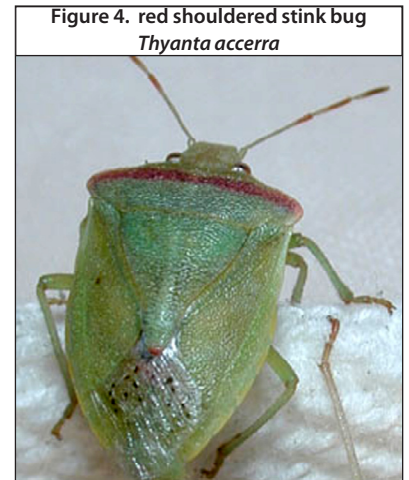


Figure 4. red shouldered stink bug *Thyanta accerra*



Figure 6. pyramid traps used to monitor stink bug movement

Chlorochroa but the availability of a commercial lure is unknown.

control

Managing stink bug populations can be difficult because they spend much of the year living on host plants outside of the orchard. Adult stink bugs may move into the orchard in late summer and feed on fruit, both apples and cherries. When stink bugs are detected within the orchard, the only effective means of protecting a crop is to apply contact insecticides. Pyrethroid insecticides have proven to be the most effective insecticide options for control of stink bugs, but even a single application

can be highly disruptive to biological control of spider mites and other insects. To limit the disruptive effects, targeted sprays of orchard borders are recommended. Repeated applications of a pyrethroid insecticide to orchard borders, 4 to 5 rows, has worked well to reduce fruit injury in the entire orchard. Sprays are most effective when applied at, or shortly after, dusk - the period of highest stink bug activity. Some pyrethroid insecticides have labels for non-crop lands and can be used to treat areas



Figure 7. Problems often occur along orchard borders when adult stink bugs move into the orchard late in the year and feed on fruit.

directly adjacent to the orchard that have been determined to harbor high stink bug populations.

fruit injury

Adult stink bugs puncture fruit with their beaks to feed on the fruit flesh (Fig. 8). Stink bug damage in apples can occur beginning in mid-summer and accumulate through the harvest

period. Damage caused by stink bugs can be confused with bitter pit damage. Stink bug damage (Fig. 9) is usually located higher on the fruit, is conical or rectangular in shape, and ranges from very light tan to dark brown in color. Bitter pit damage



Figure 8. stink bug damage caused by adult feeding on apple



Figure 9. wedge cut apple reveals stink bug damage



Figure 10. wedge cut apple reveals bitter pit damage

(Fig. 10) is distributed on the sides of the apple and near the calyx, is spherical in shape, and usually dark brown to black in color.

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