



Insect/Disease Information

SMALL FRUITS

Strawberry

Fall is a good time to fertilize and to start weed control. You also might consider getting a soil or foliar nutrient test by the USU Analytical Lab (www.usual.usu.edu).

In early fall, manage weeds by hand-pulling or hoeing. Later in the season, pre-emergent herbicides can be applied to control weeds in spring.

Apply a nitrogen fertilizer in the fall, anywhere from 30-50 lbs, to stimulate root growth and flower bud initiation. If you get a foliar nutrient analysis, fall is a good time to apply the necessary amendments.

Raspberry

Fall raspberry harvest is almost complete, and growers should start to think about fall management practices for their field. To help canes harden off, do not apply nitrogen fertilizers, and do not remove floricanes until winter. Inspect your field now for **raspberry crown borer**:

The crown borer is a clearwing moth, and the larvae live and bore into the crown and roots of blackberries, raspberries, loganberries, and wild brambles. The problem with this pest is that low levels of infestation can suddenly develop into a severe problem, so it is important to keep an eye on the health of your plants during the entire season.

Raspberry crown borer has an interesting life cycle. A single generation takes two years. Females emerge in late summer and after mating, lay eggs on the undersides of leaves. Eggs hatch in 1 to 2 months, and the larvae immediately look for overwintering sites. They crawl down to the base of the cane to create a small cavity under the bark (or find a protected site on the bark) for overwintering. Starting in spring, and throughout the summer, the larvae then burrow galleries throughout the crown. In fall, larvae move to the roots to spend the second winter and continue mining the roots and crown the second summer. Pupation occurs in the crown in mid to late August.

Damage from crown borer is most evident the second year of larval activity. (But note that first and second summer



The raspberry crown borer adult resembles a wasp, but has scales on its body and wings. It can be seen flying during the day. On the lower left of the leaf above is a small, brown egg.



The larvae look like small white grubs, and chew tunnels throughout the crown (first summer) and roots (second summer).

larvae can all be present in a field.) Infested canes are spindly with small leaves and little fruit, and wilt or die over the course of the summer. Frass (sawdust-like excrement) or swellings may be evident at the base of the plant. Sometimes, canes can be easily pulled out of the ground.

Management:

- Remove wild brambles near the cultivated patch
- During winter pruning, look for tunnels in cut canes. Cut or dig out all infested canes and plants.

Insect/Disease Activity, continued

- Nematodes may provide 30-50% kill. Both *Heterorhabditis bacteriophora* and *Steinernema carpocapsae* have been used. Apply as a drench in fall. Irrigating before and after application improves efficacy. Purchase from [Arbico-Organics](#).
- There are very few chemical options. Apply soil drench in fall (anytime after mid to late October) to target overwintering 1st fall larvae. Materials include: bifenthrin (Brigade, Sniper) and diazinon (Diazinon 50W). Because it does not target 2nd season larvae, chemical (and nematode) applications must be made at least 2 years in a row.

Precautionary Statement: Utah State University Extension and its employees are not responsible for the use, misuse, or damage caused by application or misapplication of products or information mentioned in this document. All pesticides are labeled with ingredients, instructions, and risks. The pesticide applicator is legally responsible for proper use. USU makes no endorsement of the products listed herein.

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