

# Best Management Practices of Fusarium Dieback (FD) Polyphagous and Kuroshio Shot Hole Borers (SHBs) on Avocado in California

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Fig 1. Symptoms of SHB on avocado



Fig 2. Beetle infestation on an avocado branch collar but no cluster



Fig 3. Beetle infestation on an avocado branch collar with cluster



Fig 4. Pruning of infested branch collar

## WHAT TO DO:

- 1- Inspect branches and branch collar for signs of SHBs and FD symptoms in avocado (Fig 1-3).
- 2- If the beetle has not colonized (produced a gallery), no need to make cuts.
- 3- If the beetle has colonized, or a cluster of attack is observed on branches, cut entire branch (Fig 4).
- 4- If the beetle/fungus has colonized on the branch collar, remove the infested branch, including the branch collar (Fig. 3&4).
- 5- When pruning, use the three cut method (See pruning handout).
- 6- Spray pruning wound with *Bacillus subtilis* (2% Serenade ASO®) (Fig. 5)
- 7- Chip and phosphine fumigate and then solarize pruned wood using a clear plastic tarp for several months.

## PRUNED AND CUT PLANT DEBRIS:

- 1- Do not move infested plant material without first chipping or fumigation and then solarizing the material.
- 2- Chip infested wood on-site to a size of one inch or smaller (Fig 6) or fumigate with phosphine.
- 3- If the branch is too large to chip, solarize using clear a plastic tarp on-site for several months. (winter at least 3 months, summer 6 weeks)
- 4- Cover woodpiles with a plastic tarp. This is not only good practice for insect management, but also prevents splash dispersal of pathogenic fungal propagules.
- 5- After plant material is chipped or fumigated and then solarized, it may be safe for use in other locations.

## EQUIPMENT DISINFECTING:

- 1- Sanitation of equipment between each tree during pruning will reduce the spread of fungal pathogens.
- 2- Prior to cutting/pruning, remove organic debris off equipment (hand and power tools used for cutting (e.g. pruning shear, chainsaws), then spray or wipe with either Lysol® or 70% ethanol. Clorox® bleach diluted to 5% may be used.
- 3- Never use disinfectants on pruning wounds, as they could be phytotoxic.



Fig 5. Spray pruning wound



Fig 6. Chip infested pruning wood