



Invasive Shot Hole Borers + Fusarium Dieback

How to Handle Infested Plant Material

CURRENT OPTIONS

Live ISHB can continue to live in and emerge from infested wood - including the stump left behind after tree removal. **Always follow-up tree removal with stump grinding. If relocating infested material, cover in-transit to prevent beetles from escaping.**

Options for handling ISHB-infested plant material include:

- Chip (less than 1") + compost
- Chip (less than 1") + solarize
- Chip (less than 1") + use as mulch (only in areas already heavily infested by ISHB)
- Chip (less than 1") + deliver to landfill for use as Alternative Daily Coverage
- Cut logs + solarize
- Cut logs + kiln-dry



SOLARIZATION GUIDELINES

Solarization is a suitable method for handling either infested chips or logs. When done properly, solar energy will heat plant material until both the beetle and fungi are killed. It is most effective during the peak of summer, when temperatures are higher and days are longer, but may be used during the rest of the year as long as time and space can be committed. Follow these tips for proper solarization:

- Use sturdy plastic sheeting/tarp (clear is recommended) that can withstand rain/wind
- Fully contain chips/logs by wrapping plastic both underneath and over the material
- During July - August: cover chips/logs with sturdy plastic for **at least 6 weeks**
 - Temperatures during these months should be regularly above 95°F
- During September - June: cover chips/logs with sturdy plastic for **at least 6 months**
- **Keep log/chip layers as thin as possible** (2 logs deep maximum) to ensure even heating throughout the pile



PRUNING BMPS

Poor pruning practices can facilitate the spread of plant disease. For pruning and tool sterilization tips, see UC Riverside's "Best Management Practices for Disease in Oak Woodlands" (Lynch and Eskalen 2014).

COMPOSTING GUIDELINES

When done correctly, composting can effectively control the plant pathogens that cause Fusarium Dieback. Composted, chipped plant material may then be repurposed as mulch or added back into soil to improve texture and water retention.

Requirements for adequate decomposition

If transporting chipped material is not an option, you can compost chips yourself. These general composting guidelines will help assure the destruction of pathogenic fungi.

- Woody material should be chipped to less than 1 inch.
- A mixture of equal volumes of green plant and dry plant material will normally achieve a proper carbon-to-nitrogen ratio of 30 to 1.
- Do not add soil, ashes from a stove or fireplace, dairy or meat products, or manure from meat-eating animals.
- A pile should be in bins at least 36 x 36 x 36 inches to assure adequate heating. Maintain a temperature of 160°F, turn the pile every 1-2 days, and add nothing to it once the composting process has begun. If temperatures do not get up to 160°F within 1-2 days, the pile is too wet or dry. If too dry, add water. If not enough nitrogen, add green material.
- Healthy compost has a pleasant odor, gives off heat as vapor when turned, has a white fungal growth on the decomposing material, gets smaller each day, and changes color to dark brown. Compost is ready when it no longer produces heat.

Source: UC IPM, ipm.ucanr.edu/PMG/GARDEN/FRUIT/ENVIRON/composting.html

Read more about composting at uccemg.com/files/78738.pdf and calrecycle.ca.gov/Organics/

TRUSTED COMPOST FACILITIES

It is recommended that chipped material be taken to a composting facility that has earned the US Composting Council's Seal of Testing Assurance (STA). Facilities in the STA program are tested for proper decomposition and pathogen control.

Find your local STA Compost Facility at: compostingcouncil.org/participants

ISHB RESOURCES

For ISHB research updates and news: www.ishb.org
ucanr.edu/sites/eskalenlab

AUTHORS

Tim Paine¹, PhD; Michele Eatough Jones¹, PhD; Akif Eskalen², PhD; Monica Dimson³; John Kabashima³, PhD

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¹UC Riverside, ²UC Davis,

³UC Cooperative Extension, Orange County