Green Waste as a Pathway for Tree Pests

Beatriz (Bea) Nobua-Behrmann, PhD
University of California Cooperative Extension – Orange Co.
Some definitions

**Unprocessed Green Waste:** Green Waste that has not undergone any mechanical procedure to lessen the pest risk. When a quarantine is active, it is considered *regulated* material and it must remain in the quarantine area.
**Processed Green Waste:** has undergone some mechanical procedure to lessen or eliminate the pest risk.

**Mulch:**
- Chipped, ground or shredded
- Not completely processed
- If there’s a quarantine: Its movement is **regulated** and must remain within the quarantine area.

**Compost:**
- Completely processed
- No longer poses a pest risk
- **Unregulated** and may move outside of a quarantine area
Quarantines prohibit movement of regulated material unless specific conditions are met
• Can be any geographic area
• Usually counties but can be down to city streets and blocks

Compliance agreements:
• Binding agreement between regulatory agency and handler of regulated materials
• Affirms that handler will process or transport materials only under certain conditions
Who needs a compliance agreement?

Any entity in the chain-of-custody that handles materials from an active quarantine zone

• Green waste haulers
• Transfer stations
• Chip and grind sites
• Composting sites
• Landfills
• etc.
TRANSPORTERS

- Fully enclosed vehicle or properly covered.
- Only move green waste to an approved receiver
- Direct route / use of highways
- Trailer cleaning
- Spill notification
COMPOSTING

- Transporter/Hauler verification
- Green Waste should be tarped, processed ASAP, and added to active compost within 72 hs.
- Temperature requirements - Guidelines for runoff management
- Compliance with the CA Code of Regulations (pathogen reduction)
- Unprocessed green waste and mulch can only leave the facility if allowed by County.
- Allow a trapping program for the targeted pests
Two non-quarantined pests in Southern California

Gold Spotted Oak Borer (GSOB)

Invasive Shot-Hole Borers (ISHB)
Gold Spotted Oak Borer

- Native to Arizona
- First detected in CA in 2004
- Attacks and kills large-diameter oaks
- Drought-stressed oaks are more susceptible
Movement of infested firewood facilitated dispersal in southern CA
Movement of infested firewood facilitated dispersal in southern CA

Photos provided by CalFire
Handling infested wood

Grinding <3 inches

Seasoning

Tarp

Screen

Debarking
Invasive Shot-Hole Borers

- Native to SE Asia
- Attack many species of tree
- Vector of Fusarium Dieback
- Two species of beetle:
Invasive Shot-Hole Borers

- Native to SE Asia
- Attack many species of tree
- Vector of Fusarium Dieback
- Two species of beetle:
  - Polyphagous Shot-Hole Borer (PSHB)
  - Kuroshio Shot-Hole Borer (KSHB)

Fusarium euwallaceae
Fusarium kuroshium
Chipping <1 inch

- Solarizing
- Composting
- Alternative Daily Coverage
- Biopower plant

Logs: solarized or kiln-dried
The case of Orphan pests

- APHIS NPAG classified: No Action – Non Reportable
- CDFA → B-rated pests
- County Ag Commissioners ill-equipped to regulate w/o State & Federal Funding

In the absence of regulatory authority, outreach and education became the focus to reach out to agriculture, and public and private tree owners.
• Outreach events
• Letters to green waste processing facilities
• Workshops for tree workers
• Buy it where you burn it
• Etc.

www.PSHB.org

www.GSOB.org
Acknowledgments

Kevin Turner – CalFire
John Kabashima – UCCE Orange Co.

Firewood Task Force
OC Parks
Cal Fire
Forest Service
UC Riverside
UC Irvine
UC ANR

Thank you