

# Pest Alert: *Fusarium* dieback on California avocado trees vectored by Tea Shot Hole Borer (*Euwallacea fornicatus*)

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Both the fungus and the beetle were found on several backyard avocado (cv. Hass, Bacon, Fuerte, Nabal) trees in residential neighborhoods in South Gate, Downey and Pico Rivera, Los Angeles County, in February and March 2012.

***Fusarium dieback symptoms:*** White powdery exudate either dry or surrounded by wet discoloration of the outer bark in association with a single beetle exit hole (Fig. A-C). While there is no visible injury to the bark at this stage of colonization, examination of the cortex and wood under the infested spot bored by the beetle, reveals brown discolored necrosis caused by the fungus. (Fig. D).

***The beetle:*** Tea shot hole borer (*Euwallacea fornicatus*) is very small and hard to see. The beetle holes penetrate ~1-4 cm (0.4-1.57 inch) into the wood and there are often many exit holes on an infested tree (Fig. B). Females are black colored and about 1.8 – 2.5 mm (0.07-0.1 inch) long (Fig E), males are brown colored and about 1.5 mm (0.05 inch) long. The exit hole on avocado is about 0.85 mm (0.033 inch).

***Background:*** The Tea Shot Hole Borer is an ambrosia beetle from Asia that has a symbiosis with *Fusarium* sp. and is a serious problem for the Israeli avocado industry. The beetle is also a serious pest of tea (*Camelia sinensis*), in Sri Lanka and India. In California, The Tea Shot Hole Borer was first reported on black locust (*Robinia pseudoacacia*), Lychee (*Litchi chinensis*), Box elder (*Acer negundo*), but there were no reports of fungal damage.

## ***What to do:***

- Look for a single exit hole with surrounding white powdery exudate.
- Scrape off the bark layer around the infested area to see the canker.
- Follow the gallery to look for the beetle (may or may not be present).
- Avoid movement of infested avocado wood out of infested area.
- Look for other hosts (Castor beans plant, Black locust, Lychee, and Acer) showing symptoms of the beetle/disease.
- Because the beetle tends to colonize both live and new dead wood, chip the dead wood within the grove and cover with a tarp for at least a week to prevent further beetle colonization
- Sterilize tools to prevent to spread of the disease with either 25% household bleach, Lysol® cleaning solution, or 70% ethyl alcohol.

**References:** (1) O'Donnell et al. *Journal of Clinical Microbiology* 46, 2477-2490, 2008 (2) Mendel et al., *Phytoparasitica*, DOI 10.1007/s12600-012-0223-7, 2012. (3) Rabaglia et al., *Annals of the Entomological Society of America*, 99, 1034–1055, 2006. (4) County of Los Angeles, Dept. of Agricultural Commissioner/Weight and Measures.



Photo by G. Arakelian