



### Speaker:

Tobin D. Northfield  
WSU Tree Fruit Research and Extension Center  
Department of Entomology  
Washington State University

**Date:** Monday, May 13, 2024

**Time:** 4:00 pm - 4:50 pm

**Format:** In-Person Seminar & Virtual Access

**Location:** Genomics Auditorium, Room 1102A

**Zoom:** 983 6120 0167

**Passcode:** 818719

### Title:

“Orchard ground cover management impacts on pests and beneficials”

### Abstract:

Uncultivated areas near farms can serve as sources of pests, and beneficial insects, such as pollinators or natural enemies of pests. For tree fruit orchards, the ground beneath trees can serve this role by providing habitat directly under fruit trees. Here, I will discuss two tree fruit systems, tropical cacao and temperate stone fruit, and the impacts of management of this ground cover on each crop. In an Australian cacao farm we evaluated the effects of one habitat management practice, the addition of cacao fruit husks to a monoculture cacao farm, on the provision of pollination services and the densities of two groups of entomophagous predators. The addition of husks increased fruit production indicating a promotion of the pollination ecosystem service provided by the specialist pollinators, midges. We also found that cacao fruit husk addition increased the densities of two predator groups, spiders and skinks. In Washington State stone fruit (cherries, peaches, and nectarines) orchards are experiencing an epidemic of X-disease, a phytoplasma transmitted by leafhoppers that develop on broadleaf weeds in orchard ground cover. In this case, we found that reducing access to orchard ground cover with reflective horticultural fabrics reduced X-disease vector density by 80-90% and reduced access to alternative pathogen hosts. I will discuss the potential for this technique and other ground cover management approaches on X-disease vector abundance and natural enemies. In summary, orchard ground cover management impacts depend on the animals using ground cover habitat, and the specific needs and risks the orchard faces.

<https://ucr.zoom.us/j/98361200167?pwd=cWsya2N4U2dEaUIZM0ExQkkzbC9ldz09>