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# Avocado—Caterpillar and Biological Control Sampling

## Supplement to UC IPM Pest Management Guidelines: Avocado

Grower: \_\_\_\_\_ Date: \_\_\_\_\_

Location: \_\_\_\_\_ Comments: \_\_\_\_\_

Identify the caterpillar species in your grove. Carry a copy of the Key to Caterpillars when sampling.

**Directions:** Monitor from March through August, about every 7 to 10 days.

1. Monitor at least 10 trees per grove, concentrating effort in areas where you see leaf chewing or found caterpillars the previous season.
2. Sample caterpillars using timed counts or foliage shaking, as described below, depending on the prevalent species.
3. For all samples combined from each tree, record the total number of caterpillars and the total predators of caterpillars.
4. Record separately any apparently diseased and parasitized caterpillars, also record any diseased or parasitized larvae in the caterpillars per hour or caterpillars per 25 shakes column.
5. If it is not obvious whether a caterpillar is healthy versus diseased or parasitized, or if you don't know if the observed species are predators of caterpillars, collect those specimens for closer examination later. This is especially important when conducting timed counts, so time is not diverted from inspecting trees during the fixed monitoring time.

**Using the shake method**

Shake foliage to sample avocado looper:

1. Place a 1-yard square collecting surface (e.g., cloth or flattened cardboard box) beneath outer canopy foliage.
2. Vigorously shake small limbs to dislodge caterpillars onto the collecting surface. (For example, shake foliage on 2 or 3 separate sections of each tree to collect 25 shake samples.)

**Using the timed method**

Timed counts you can use for amorbia (western avocado leafroller), avocado looper, and orange tortrix.

1. Spend a fixed amount of time inspecting foliage for caterpillars.
  - a. For example, spend 6 minutes inspecting each of 10 trees (1 hour).
2. Use an alarm watch or timer to ensure the entire period is spent monitoring, and that time spent moving among distant trees is not included.
3. Walk slowly around the outer canopy, looking for chewed and webbed foliage or fruit.
4. Pull apart webbing and count any caterpillars and natural enemies.

Tree	Caterpillars per hour (6 minutes/tree)	Caterpillars per 25 shakes (2-3 shakes/tree)	Predators	Diseased or parasitized caterpillars
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
<b>Totals</b>				
<b>Biocontrol:</b> <b>(Predators plus diseased or parasitized caterpillars)</b>				
<b>Caterpillar pressure:</b> <b>(Total Caterpillars / Biocontrol)</b>				