



Utah Pests Sampling Form: Spider and Predatory Mites Presence-Absence Sampling Method

Orchard Block: _____ Variety: _____

Date: _____ Stage of Bud Development: _____

This sampling method uses the presence-absence method. Rather than counting the number of mites, scouts simply need to determine whether mites occur or do not occur on the collected leaves.

Tree	Spider Mites		Predatory Mites	
	Number of Leaves out of 10 with at least one Mite	Estimated Number of Mites/Leaf (from look-up table)	Number of Leaves out of 10 with at least one Mite	Estimated Number of Mites/Leaf (from look-up table)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
	Total Number of Mites/Leaf		Total Number of Mites/Leaf	
	Average Number of Mites per leaf (divide above sums by 10)		Average Number of Mites per leaf (divide above sums by 10)	

Spider and Predatory Mites Sampling Instructions

When and How Often to Sample

Beginning in mid-June, monitor for spider mites every 1 – 2 weeks through mid-September. During the hottest months, monitor weekly.

Materials

1. Plastic ziploc bags in which to collect leaves
2. 16 – 20x hand lens

Instructions

1. Choose representative orchard blocks of each fruit type for sampling. For orchard-specific pest control, all orchards should be sampled.
2. Randomly select 10 trees scattered throughout a 2- to 5-acre block. Include trees where known problems exist, or where mite infestations may occur sooner, such as drought-prone areas or stressed trees.
3. On each sampling date collect 10 leaves from each of 10 trees (100 leaves total). Select leaves from representative areas of the entire tree canopy.
4. Keep leaves from each tree in separate bags in order to identify “hot spots.”
5. Check both sides of each leaf with a hand lens, looking for spider mites and predatory mites.
6. Record the number of leaves from each tree infested with each type of mite (spider and predatory). **Note:** It is not necessary to count the number of mites.
7. Use the look-up tables to estimate the number of spider and predatory mites per leaf.
8. Obtain the average mite density by adding all 10 estimated mite densities and dividing by 10. Take notice of trees with higher than average densities as these may be “hot spots.”
9. **NOTE:** The same leaf collections can be used to monitor for western tentiform leafminer in apple and cherry.

Identification of Spider and Predatory Mites

Spider Mites: 1/60-inch, oval-shaped; yellow-green in color, turning brown with age; twospotted has two black spots on back, McDaniel has multiple spots; only moves forward

Predatory Mites: similar size but shinier and teardrop-shaped; longer legs than spider mites; clear to yellow in color; moves forward and backward quickly through spider mite colonies, looking for prey

Treatment Thresholds

Apple: Treat if average number of mites per leaf is >10 and there is <1 predator per leaf.

Pear: Treat if average number of mites per leaf is >5 and there is <1 predator per leaf.

Mite Look-up Tables

Twospotted and McDaniel Spider Mites <i>Tetranychus urticae</i> and <i>T. mcDanieli</i>	
Number of Leaves out of 10 with at Least One Mite Present	Estimated Number of Mites Per Leaf
1	0.1
2	0.4
3	0.7
4	1.1
5	1.7
6	2.4
7	3.5
8	5.2
9	8.8
10	---

Predatory Mite <i>Galendromus (Typhlodromus) occidentalis</i>	
Number of Leaves out of 10 with at Least One Mite Present	Estimated Number of Mites Per Leaf
1	0.1
2	0.3
3	0.5
4	0.8
5	1.1
6	1.5
7	2.1
8	3.0
9	4.6
10	---

For more information, see the [Web-spinning Spider Mites](#).

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