



Utah Pests Sampling Form: Western Tentiform Leafminer Complete Sampling Method

Orchard Block: _____ Variety: _____

Date: _____

Number of Mines per Leaf – Second and Third Generations

	Leaf 1	Leaf 2	Leaf 3	Leaf 4	Leaf 5	Leaf 6	Leaf 7	Leaf 8	Leaf 9	Leaf 10	Tree Total
Tree 1											
Tree 2											
Tree 3											
Tree 4											
Tree 5											
Tree 6											
Tree 7											
Tree 8											
Tree 9											
Tree 10											
Total number of mines for 10 trees											
Average number of mines per leaf for 10 trees (divide above sum by 100)											

Percentage of Leafminer Parasitism (necessary when "total mines" is 10 or more)

Number of Dead/Parasitized Leafminers out of 50 mines		
(Record with tick marks)	Total	Percentage of Parasitism (divide Total by 50)

Western Tentiform Leafminer Sampling Instructions

When and How Often to Sample:

Second Generation

(Can be done at same time as mite sampling.) Start scouting in mid-June, and continue to early July every other week.

Third Generation

Sample for mines in early to mid-August if leafminers were not treated during the second generation, or if the density of mines was high.

Materials:

1. 16 – 20x hand lens
2. Ziploc bags in which to put leaves
3. Calculator to determine parasitism percentage

Instructions:

1. Choose one or several representative orchard blocks for sampling.
2. Randomly select 10 trees scattered throughout a 2- to 5-acre block. If the orchard is larger than 5 acres, it may be necessary to sample more trees.
3. On each sampling date, collect 10 leaves from each of the 10 trees (100 leaves total). Pick leaves that occur between the middle and base of vegetative shoots. These same leaves can be used to monitor for mites (refer to mite sampling form).
4. Count and record the number of mines and determine the average number of mines per leaf for each orchard block. (To find the average, divide the total number of mines by 100.)
5. If leaf mine counts are high (more than 2 mines per leaf), record counts from every leaf. Otherwise, record only total mine counts from all 10 leaves for each tree.

6. If the total count for the 100 leaves is 10 or more mines, then sample again to determine parasitism percentage in the block:
 - a. Search the orchard for leaves with mines, and collect enough samples to total 50 mines.
 - b. Dissect each mine and record whether the larva or pupa inside is alive or dead or appears to have been parasitized.
 - c. Use tick marks to record the number of dead or parasitized leafminers.
 - d. Determine orchard percentage of parasitism by dividing the number of parasitized leafminers by 50.

Treatment Thresholds:

Second Generation

Early June—1 or more mines per leaf and parasitism of larvae less than 30%

Mid-June to Early July—2 or more mines per leaf and parasitism less than 30%

Third Generation

August—5 or more active mines per leaf

For more information, see the [Western Tentiform Leafminer fact sheet](#).

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