

Scouting Apples for Foliar Pests: Procedures & Decision Rules

1. Scout at **early pink** for *rosy apple aphid*.

- Examine 10 fruit clusters from the inner canopy of each of 10 trees per block.
- If *any* rosy apple aphids are found in this sample, then use an insecticide for aphid control at pink.
- If rosy aphid is not detected at pink, do not use any insecticide at pink unless the block has a history of economic injury from plant bugs.

2. Scout at **early petal-fall** for early mines of *spotted tentiform leafminer*

- Examine 3 fruit clusters on each of 5 fruit trees per block; see separate handout for details.

3. Scout at **early petal-fall** for nymphs of *white apple leafhopper*.

- Examine 3 leaves per cluster on each of 5 fruit clusters on each of 10 trees per block.
- If an average of 0.5 or more nymphs per leaf is detected, then use an insecticide for leafhopper control at petal-fall.

4. Scout every 1 to 2 weeks from **petal-fall to mid-August** for *European red mite*.

- Take first sample of 4 leaves from each of 5 trees, then count the number that are infested; plot the number infested on chart, and see decision of treat or no treat or continue sampling.
- see separate handout for further details.

Optional:

5. Scout at **pink** for eggs of *spotted tentiform leafminer*

- Examine 3 fruit clusters on each of 5 fruit trees per block; see separate handout for details.

Optional:

6. Scout every week from **petal-fall** (usually mid-May) **until new growth hardens off** (usually by early July) for *green apple aphid*.

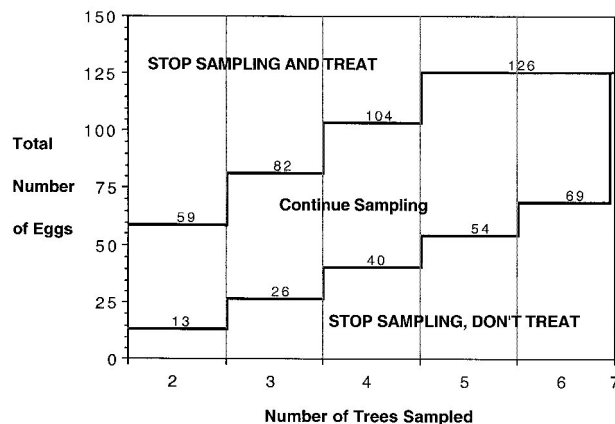
- Examine 5 terminal shoots on each of 10 trees per block; on each shoot, count the number of leaves that are infested by aphids (note: infestations normally start at the endmost leaf).
- In addition to aphids, look for the gall midge larva (an orange maggot) that commonly preys on apple aphids. Lady beetles and lacewings may also be preying on aphids.
- Treatment is suggested if an average of 3 or more leaves per terminal are infested, and natural enemies are not present on most infested leaves.

Scouting Apple Leaves for Spotted Tentiform Leafminer

(adapted from Cornell University's 2000 Pest Management Recommendations for Commercial Tree Fruit)

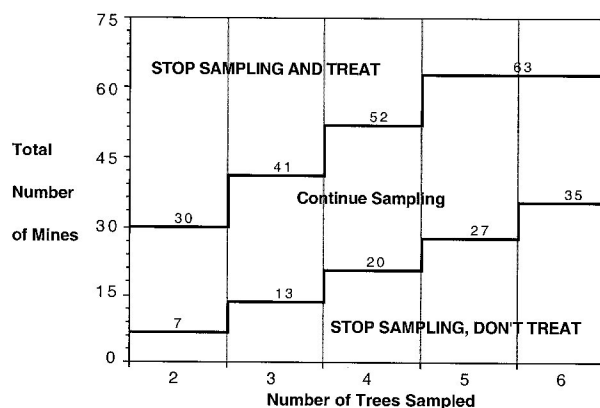
Scout at pink or early bloom for eggs of the first generation of leafminer.

- A hand lens is useful for seeing the eggs, which are small, round, and translucent.
- Examine 3 fruit clusters from each of 5 trees (= 15 clusters).
- Count the number of eggs on the undersides of the 2nd, 3rd, and 4th leaves from base of cluster.
- If more than a threshold number of eggs per fruit cluster are detected at pink, then plan to use an insecticide *at petal-fall* to kill young (sap-feeding) leafminer larvae.
- If less than the threshold number of eggs is detected, then leafminer control will probably not be needed at petal-fall, but you can also scout for early mines at petal-fall to confirm the decision.
- General threshold: 8 or more eggs per fruit cluster (≥ 120 eggs per 15 clusters).
- Specific thresholds: see *chart* to the right for more precise sampling on 2 - 7 trees per block.



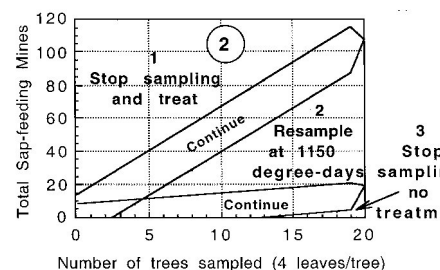
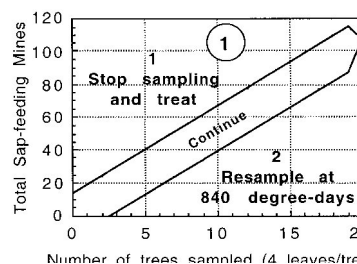
2. Scout at petal-fall for early mines of the first generation of leafminer.

- Note that early mines (with young larvae) are blister-like areas visible only on the *underside* of the leaf.
- Examine 3 fruit clusters from each of 5 trees (= 15 clusters).
- Count the number of early mines on the *undersides* of the 2nd, 3rd, and 4th leaves from base of cluster.
- If more than a threshold number of early mines per fruit cluster are detected, then use an insecticide for leafminer larvae at petal-fall.
- General threshold: 4 or more early mines per fruit cluster (≥ 60 mines per 15 clusters).
- Specific thresholds: see *chart* to the right for more precise sampling on 2 - 7 trees per block.



3. Scout in early- to mid-summer for new early mines of second generation leafminer.

- Scouting should be done 690 degree-days, base 43F (about 25-30 days) after the number of leafminer moths begins to sharply increase in pheromone traps.
- Examine 4 mature terminal leaves per tree from 15 trees (= 60 leaves).
- Count the number of new mines on the undersides of these leaves.
- If more than a threshold number of new mines per fruit cluster are detected, then apply an insecticide effective against young (sap-feeding) leafminer larvae.
- General threshold: 1.6 or more new mines per leaf (≥ 96 new mines per 60 leaves).
- Specific thresholds: see *first chart* to the right for more precise sampling on 3 - 20 trees per block.
- Re-sample at 840 degree-days (base 43F) if treatment not needed after 1st sampling (see *second chart* to the right).



Scouting Apple Leaves for European Red Mite

Date: _____

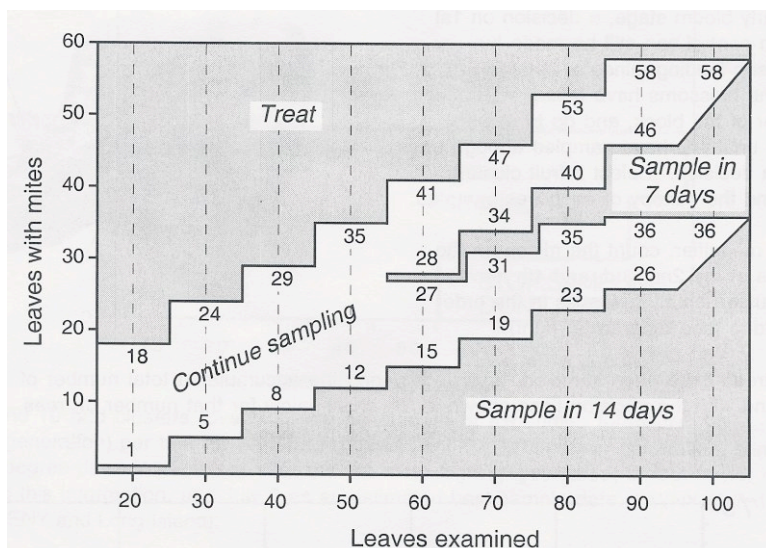
Farm: _____

Block: _____

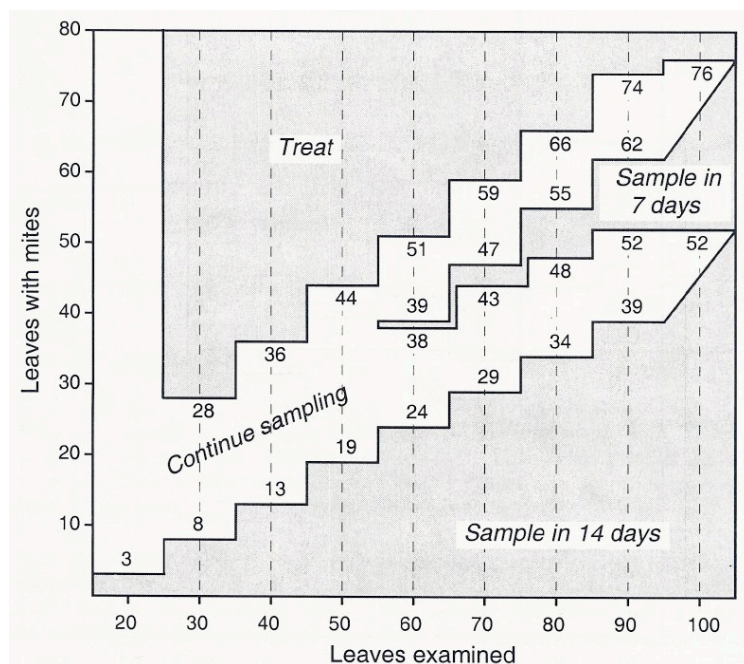
Scout: _____

Procedure: Collect 4 leaves from each of 5 trees, examine them for presence or absence of mites, then plot the number on the chart. If the point falls in the 'continue' zone, then collect leaves from additional trees until a decision is reached.

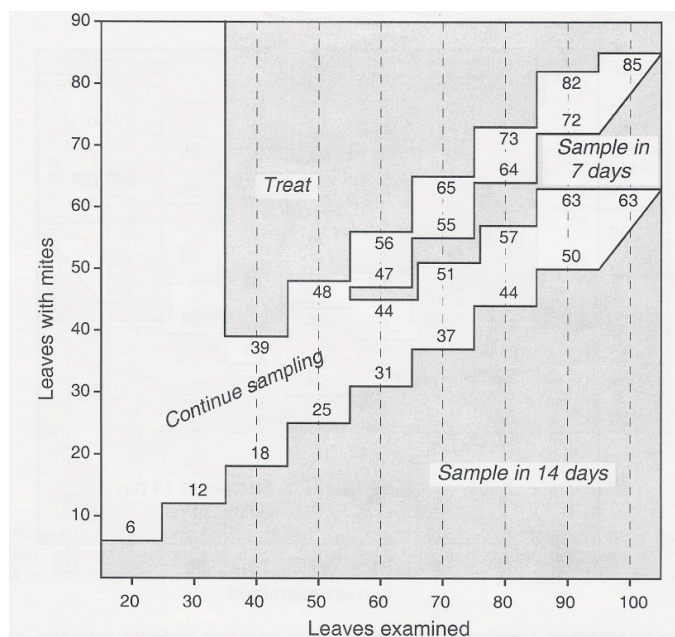
Early season chart, mid-May to mid-June
(based on threshold of 2.5 mites per leaf):



Mid-season chart, mid-June to mid-July
(based on threshold of 5 mites per leaf):



Late season chart, mid-July to mid-August
(based on threshold of 7.5 mites per leaf):



Source: Cornell Cooperative Extension's 2000 Pest Management Recommendations for Commercial Tree-Fruit Production..