

Scouting Apples for Insect & Mite Pests

Celeste Welty
Extension Entomologist
Ohio State University
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Key Practices for Apple Pest Management

- **Scout for foliar pests**
- **Trap for direct fruit pests**
- **Avoid killing beneficial arthropods
by using selective pesticides**

Apple pest monitoring

- **Trapping**
 - **Codling moth**
 - **Apple maggot**
 - **San José scale**
- **Scouting**
 - **Rosy apple aphid**
 - **Spotted tentiform leafminer**
 - **White apple leafhopper**
 - **European red mite**
 - **Green apple aphid**

Apple scouting

<u>Time</u>	<u>Target pest</u>
Early pink	rosy apple aphid
Early petalfall	leafminer
Early petalfall	leafhopper
All season	mites
June	green apple aphid

Rosy apple aphid

- Scout at early pink
- Choose:
 - 10 trees per block
 - 10 fruit clusters per tree
 - Best from inner canopy
- Look for curled, distorted leaves
- If ANY rosies found, then use aphicide at pink



Spotted tentiform leafminer

- Scout at early petal-fall
- Randomly choose:
 - 5 trees per block
 - 3 fruit clusters per tree
 - Examine 2nd, 3rd, & 4th leaves from base
- Look for early mines
 - **Underside of leaf**
 - **Pale-green blisters**
- Treat if > 4 mines per cluster
- Sequential sampling graphs available for more precise sampling



White Apple Leafhopper

- Scout at petal-fall
- Randomly choose:
 - 10 trees per block
 - 5 fruit clusters per tree
 - 3 mid-cluster leaves per cluster
- Look for young nymphs
 - Underside of leaf
- Threshold at petal-fall:
 - > 0.5 nymphs per leaf (revised from 1)



Green apple aphid



- **Scout weekly**
 - from petal-fall (mid-May)
 - until new shoots harden off (early July)
- **Randomly choose:**
 - **10 trees per block**
 - **5 terminal shoots per tree**
- **Count the number of leaves infested**
 - infestation starts on endmost leaf
 - also note presence of predators
- **Treat if > 3 infested leaves per terminal, & predators absent**

Scout for European Red Mite

- **Goal: make a decision**
 - **'Treat'**
 - **'Do not treat'**
- **Use presence/absence sampling**
- **Sample size:**
 - **minimum = 20 leaves**
 - **maximum = 100 leaves**
- **Based on thresholds**
 - **Early summer: fewer mites tolerated**
 - **Late summer: more mites tolerated**



Scout for European Red Mite

Time

Threshold

(average number
of mites per leaf)

Mid-May to mid-June

2.5

Mid-June to mid-July

5.0

Mid-July to mid-Aug.

7.5

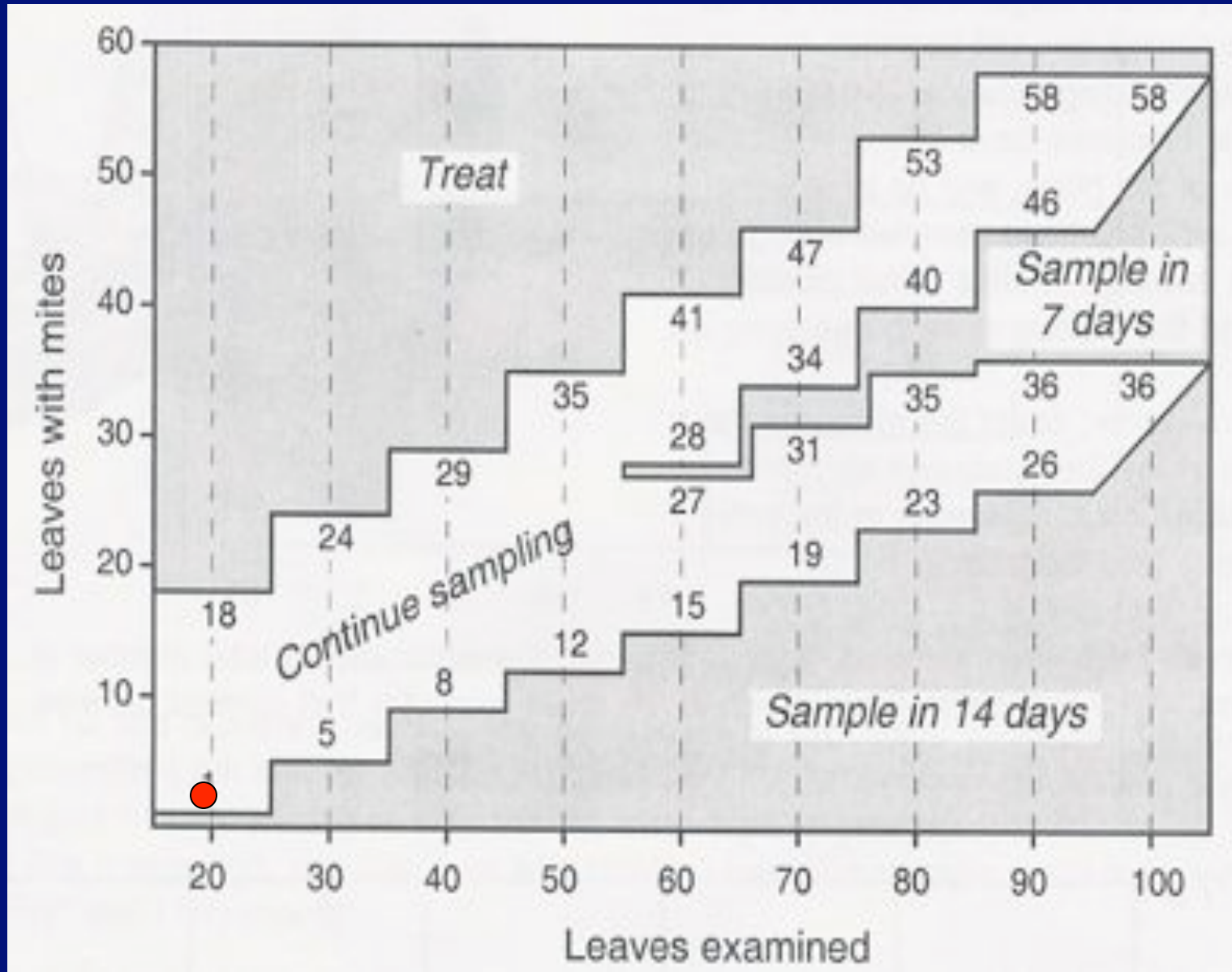
Scout for European Red Mite

Steps:

- 1) take **4 leaves** from each of **5 trees**
- 2) rate each as infested or not
- 3) get **total** number infested leaves (of 20)
- 4) **plot** the number infested on chart
- 5) see which decision zone the point is in:
 - ‘**Treat**’
 - ‘**Do not treat; resample in 7 days**’
 - ‘**Do not treat; resample in 14 days**’
 - ‘**Continue sampling**’

Mite Scouting - early summer

example:
In first 20
leaves,
3 are
infested



Scout for European Red Mite

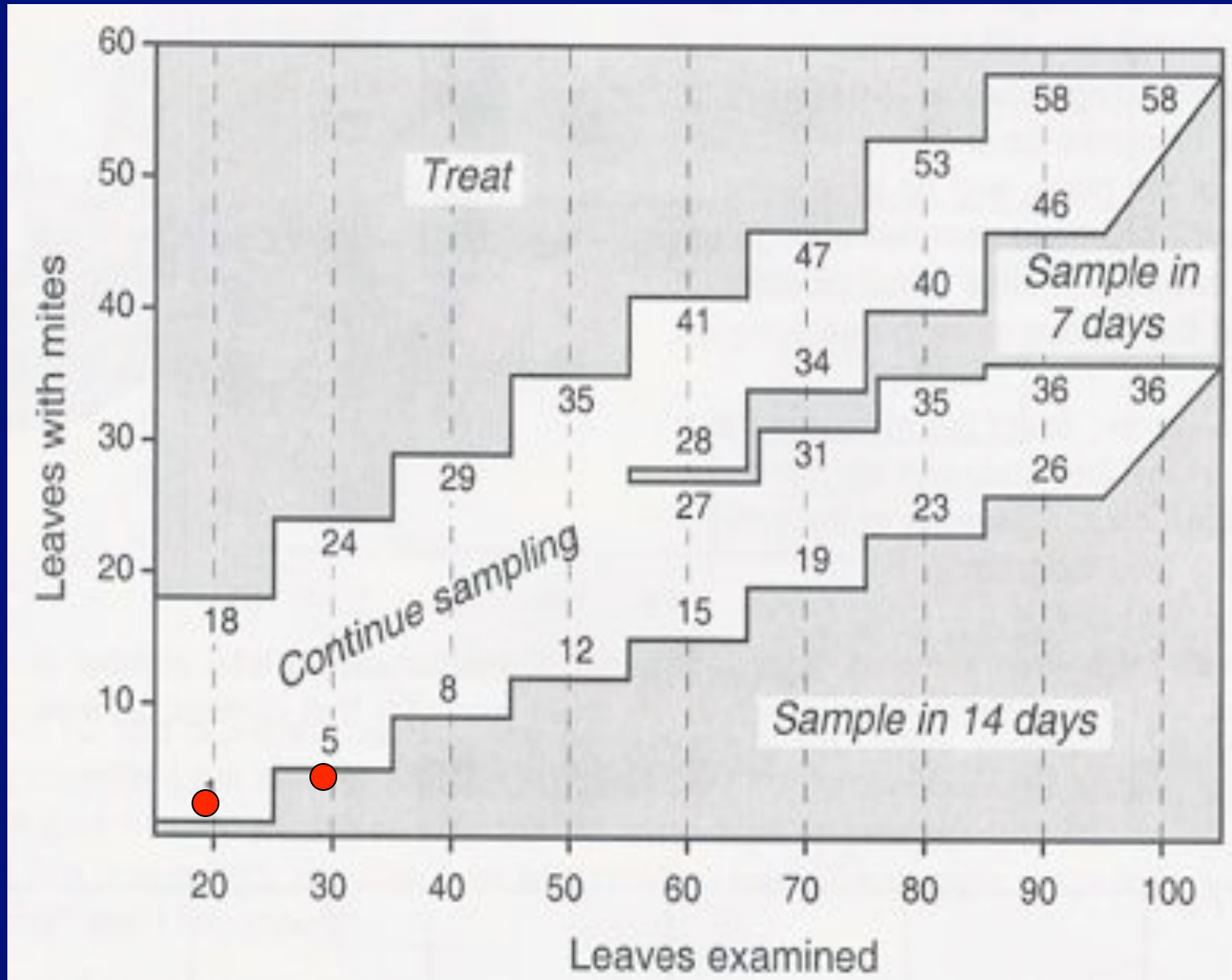
- If you need to **continue** sampling:
 - take 10 more leaves
 - rate each
 - get new total
 - plot new point
 - check decision
- If you **still** need to continue :
take 10 more leaves at a time, add to total, plot, until decision reached

Mite Scouting - early summer

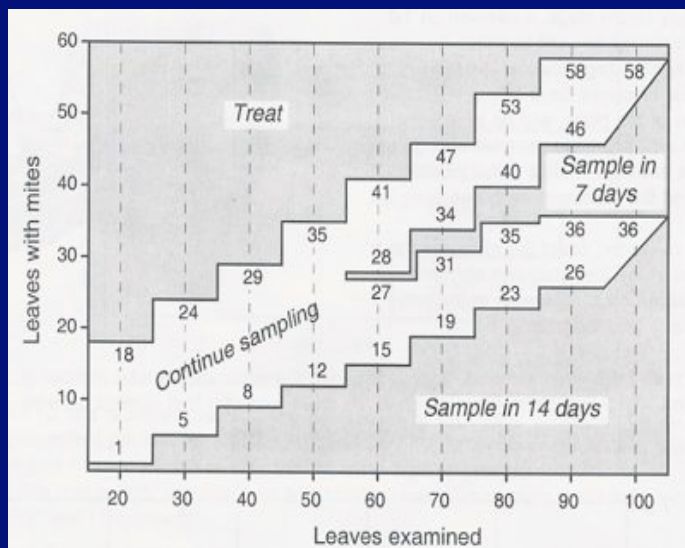
example:
In next 10
leaves,
1 is
infested.

$$3 + 1 = 4$$

Decision:
do not
treat;
resample
in 14
days

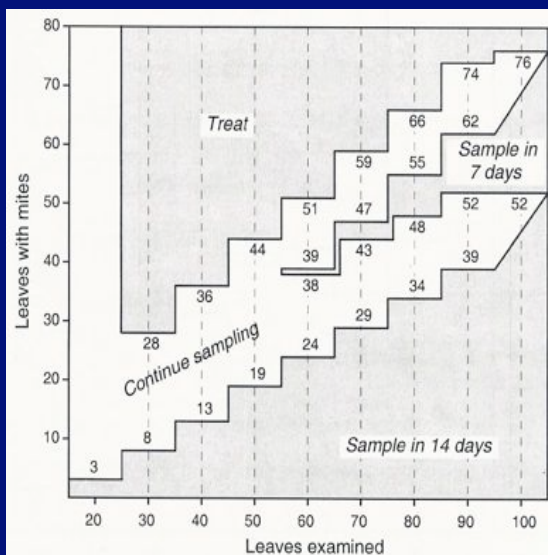


Scout for European Red Mite



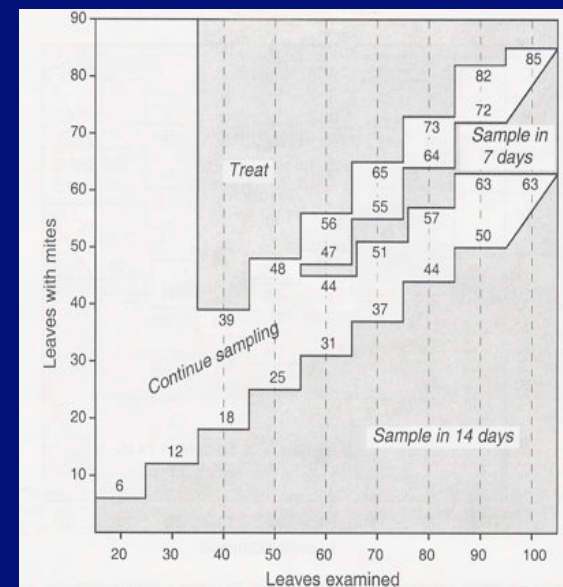
**Early summer
(mid-May to
mid-June)**

**Threshold =
2.5 mites/leaf**



**Mid-summer
(mid-June to
mid-July)**

**Threshold =
5.0 mites/leaf**



**Late summer
(mid-July to
mid-Aug.)**

**Threshold =
7.5 mites/leaf**