

**\*\*\* Mite Presence/Absence Leaf Sampling \*\*\***



← European red mite

Twospotted spider mite →



Treatment decision is reached if number of leaves with one or more mites is below Stop-Low or above Stop-High. If number of infested leaves is between stop values, increase sample size.

| # Leaves examined   | Stop-Low | Stop-High |
|---|----------|-----------|
| <b>Petal Fall to June 15</b> (Threshold is 1 mite per leaf, or 30% of leaves) |          |           |
| 30  | 5        | 13        |
| 40  | 8        | 17        |
| 60  | 14       | 24        |
| 80  | 20       | 30        |
| 100   | 30       | 30        |
| <b>June 16 – July 15</b> (Threshold is 2.5 mites per leaf, or 54% of leaves)  |          |           |
| 30  | 11       | 23        |
| 40  | 16       | 30        |
| 60  | 26       | 42        |
| 80  | 37       | 54        |
| 100   | 54       | 54        |
| <b>July 16 – August 15</b> (Threshold is 5 mites per leaf, or 73% of leaves)  |          |           |
| 30  | 18       | 28        |
| 40  | 25       | 36        |
| 60  | 39       | 53        |
| 80  | 53       | 69        |
| 100   | 73       | 73        |
| <b>August 16 – August 31</b> (Threshold is 7.5 mites per leaf, 83% of leaves) |          |           |
| 30  | 18       | 28        |
| 40  | 29       | 39        |
| 60  | 45       | 57        |
| 80  | 62       | 75        |
| 100   | 83       | 83        |



**\*\*\* Leafminer \*\*\***

**Prebloom Leafminer red trunk sticky traps**

| Concern level - Cumulative LM moths per trap | Tree status - Silvertip to Tight Cluster | ST to Pink |
|--|--|------------|
| Drop prone                                   | 4  | 9          |
| Normal                                       | 8  | 21         |

**1<sup>st</sup> (PF - First Cover) & 2<sup>nd</sup> gen. (late July) Mines**

Stop-Low and Stop-High are total # of young mines. Lower thresholds than shown below may apply.



Young leafminer mine

| # Leaves   | Stop-Low | Stop-High |
|--|----------|-----------|
| <b>For 0.5 mine per leaf</b> (1st generation)                              |          |           |
| 30   | 8        | 24        |
| 40   | 10       | 29        |
| 60   | 26       | 32        |
| <b>For 1 mine per leaf</b> (2 <sup>nd</sup> generation, on stressed trees) |          |           |
| 30   | 15       | 47        |
| 40   | 20       | 58        |
| 60   | 51       | 64        |
| <b>For 2 mines / leaf</b> (2 <sup>nd</sup> gen., unstressed trees)         |          |           |
| 30   | 32       | 92        |
| 40   | 41       | 114       |
| 60   | 103      | 127       |

**\*\*\* Scab Lesions \*\*\*** Scan top & bottom of 15 leaves per shoot

Stop-Low and Stop-High values are total # of leaves with scab lesions.

| # Shoots/Clusters examined | Stop-Low | Stop-High |
|----------------------------|----------|-----------|
| 100                        | 5 (12)   | 18 (28)   |
| 200                        | 12 (26)  | 24 (44)   |
| 300                        | 22 (44)  | 30 (56)   |



Typical scab lesion with dark, velvety growth of the fungus.

↑ Use numbers in parentheses for delayed first spray decision if using leaf reduction tactics before next spring

← When most actively producing spores, scab lesions have fuzzy surface

← Young scab lesion begins as light yellow area with developing brown streaks.  
Old scab lesion with raised leaf tissue and less fuzzy surface. →





## Key Apple Pest Thresholds

**Tarnished plant bug** – Cumulative TPB, average number caught per ground level white sticky trap.

|                     | Silvertip to Tight Cluster | Silvertip to Pink |
|---------------------|----------------------------|-------------------|
| <b>Wholesale</b>    | <b>3</b>                   | <b>5</b>          |
| <b>Retail sales</b> | <b>5</b>                   | <b>8</b>          |



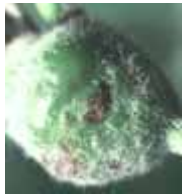
**Mullein bug** – Bloom to First Cover, tap 1 flowered limb per tree on 25 trees over black 2-foot square tray, sunny warm afternoon is best.

Threshold: 7– 10 nymphs from 25 limbs



### European apple sawfly

Cumulative EAS per white sticky trap near fruit clusters from Pink to Petal Fall. **With** prebloom insecticide: **6 – 9** EAS per trap, **Without: 4 – 5** per trap. [EAS larval trail](#) →



**Plum curculio** – Look for fresh egg-laying cuts from Petal Fall to 340 DD50 after PF.

← Fresh cut is crescent shaped narrow slit.

Cuts spread and develop brown corky callous as fruit grows. →



### Leafhoppers

– For White apple & Rose LH on fruit cluster leaves near trunk. Threshold at First Cover is average of **0.25 – 0.5 per leaf**. In July & August – **3 per leaf**

Late August to Harvest – “picker nuisance level”

For potato leafhopper on outer canopy shoot terminals on

young trees – **1 per leaf** June-August.



### Leafroller larvae

← For Obliquebanded LR check at Petal Fall and around 50 and 55 days after Petal Fall.

Look in August for [Redbanded LR](#). →



Check 10 shoot tips and fruit clusters per tree for larvae in webbed leaves and surface feeding damage on apples. Stop limits are number of infested shoots or clusters.

| Number shoots/clusters | Stop-Low      | Stop-High |
|------------------------|---------------|-----------|
| 30                     | keep sampling | 2         |
| 60                     | 1             | 3         |
| 90                     | 2             | 3         |



### Codling moth, Oriental fruit moth

– Threshold – Block history of damage. Pheromone trap catches do not predict damage level, but catching more than **6 – 14 moths per week** indicates high population.

**Apple maggot** – Red sticky ball traps in outer canopy surrounded by fruit. Threshold – Unbaited traps: **1–2 per trap**. Baited: **5 per trap**. Start counting again from zero after previous insecticide coverage is depleted.



New England Pest Management Network, online at [PRONewEngland.org](http://PRONewEngland.org)

Photo credits: Mites, leafminer moth, EAS, plum curculio early cut, leafhopper, redbanded leafroller are from UMass Coop.Ext. Bulletin C69, 1984. Most photos from that bulletin thought to have been taken by Glenn E. Morin of New England Fruit Consultants. Leafminer mine and obliquebanded leafroller reproduced with permission from Mid-Atlantic Monitoring Guide, NRAES-75, published by the Natural Resources, Agriculture, and Engineering Service, Cooperative Extension, 152 Riley-Robb Hall, Ithaca, NY, 14853-5701, 607-255-7654. Other photos from 2000 New England Apple Pest Management Guide. Apple scab by William E. MacHardy. Codling moth and tarnished plant bug by James F. Dill. Mullein bug by Alan T. Eaton. Apple maggot and old plum curculio cut by Glen W. Koehler.