



Key Apple Pest Thresholds

Prebloom bud-feeding caterpillars – 5% of buds.

Tarnished plant bug – Threshold based on cumulative number of TPB caught per ground-level white sticky trap.

← TPB adult	<u>Silvertip to Tight Cluster</u>	<u>Silvertip to Pink</u>
Wholesale	3	5
Retail	5	8



Mullein bug – At Bloom to First Cover, tap 1 flowered limb per tree on 25 trees over black 2-foot square tray, look for greenish fast-moving nymphs. A sunny warm afternoon is best. Threshold is 7 - 10 nymphs from 25 limbs.

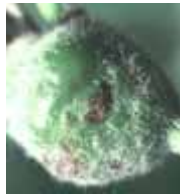
← Mullein bug nymph



European apple sawfly

Cumulative EAS per white sticky trap hung near fruit clusters from Pink to Petal Fall. **Without insecticide at Pink** threshold is **4 – 5 EAS** per trap. **With insecticide at Pink:** **6 – 9** per trap.

← EAS adult. EAS larval trail →



Plum curculio – Look for fresh egg-laying cuts from Petal Fall to end of protection at 308 DD50 after Petal Fall.

← Fresh cut is crescent-shaped narrow slit. As fruit grow, cuts spread and develop brown corky callous. →



Leafhoppers – For White apple LH & Rose LH on fruit cluster leaves near trunk, threshold at First Cover is average of **1 per leaf**. Threshold in July & August is **2 per leaf**. For late August to harvest the threshold is 'picker nuisance level'. For potato LH on young tree shoot terminals in June - August, threshold is **1 per leaf**.

← White apple leafhopper



Leafroller larvae

← For Obliquebanded LR larvae, check at Petal Fall, at about 50 days after Petal Fall, and again 5 days later.

Look in August for **Redbanded LR**. →
Check 10 shoot tips and fruit



clusters per tree for leafroller larvae in webbed leaves and for surface feeding damage on apples.

Stop limits are **number of shoots or fruit clusters with OBLR larvae**.

Number shoots/clusters	Stop-Low	Stop-High
60	1 or less	4 or more
90	2	4
100	3	4



← Codling moth, Lesser appleworm, & Oriental fruit moth →

Use block history of damage to determine need for treatment. Pheromone trap catches do not precisely predict damage level, but catching more than **5 CM & LAW**, or **10 OFM**

moths per week in June-August indicates economic damage potential.



Apple maggot – Hang red sticky ball traps in early July in outer canopy surrounded by fruit. Threshold for unbaited traps is cumulative **1 – 2 AM per trap** within 3 weeks. For baited traps, threshold is **5 per trap**. Start counting again from zero after previous insecticide coverage is depleted.

Apple maggot fly →



By Glen Koehler for the New England Pest Management Network, online at 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, obliquebanded leafroller, and oriental fruit moth 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.

*** Mite presence/absence leaf sampling ***



← European red mite (ERM)

Twospotted spider mite →

(actual sizes 0.2 – 0.4 mm)

Treatment decision is reached if **number of leaves with one or more mites** is at or below Stop-Low, or at or above Stop-High threshold.

If number of infested leaves is between stop values, increase sample size.



Leaves examined Stop-Low Stop-High

Petal Fall to June 15 (Threshold is 1 mite per leaf, or 30% of leaves)

40	6 or less	24 or more
60	11	30
80	16	30
100	29	30

June 16 – July 15

(Threshold is 2.5 mites per leaf, or 59% of leaves)

40	15	30
60	28	42
80	40	54
100	58	59

July 16 – July 31 (Threshold is 5 mites per leaf, or 77% of leaves)

40	19	37
60	39	52
80	55	67
100	76	77

August 1 – August 15 (Threshold is 7.5 mites per leaf, 86% of leaves)

40	27	40
60	47	57
80	65	74
100	85	86



ERM on leaf ↑

*** Leafminer mine counts ***

1st generation (Petal Fall - First Cover) & 2nd gen. (late July) sap-feeding mines.

Low & High Stop values are **number of sap-feeding mines**.



Number of Leaves Stop-Low Stop-High

For 0.5 mine per leaf (1st generation)

40	10 or less	29 or more
60	29	30

↩ Leafminer moth

For 1 mine per leaf (2nd generation, on stressed trees)

40	22	58
60	59	60



For 1.3 mines / leaf (2nd generation, unstressed trees)

40	40	65
60	65	94
80	106	107

↩ Leafminer sap-feeding mine

*** **Scab leaf counts** *** Quickly scan top & bottom of about 15 leaves per shoot. Stop-Low and Stop-High values are **number of leaves with scab lesions**.

Number Shoots & Clusters Stop-Low Stop-High

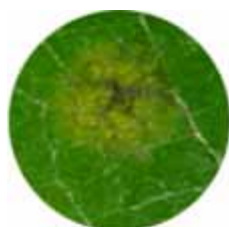
100	5 (12) or less	18 (28) or more
200	12 (26)	24 (44)
300	22 (44)	30 (56)

For spring or summer use, and for fall indexing without pre-season leaf reduction, use numbers in bold. For fall scab indexing where pre-season leaf reduction tactics will be used, use numbers in parentheses to see if block qualifies for delayed first spray decision next year.



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

← When actively producing spores, scab lesions have a slightly 'fuzzy' surface and indistinct edges.



← Young scab lesion begins as light yellow area with developing brown streaks.

Old scab lesion with raised leaf tissue and less fuzzy surface. →

