

Apple Maggot

Assessment was done at harvest, from a sample of 10 random fruits. Results are displayed numerically as follows:

1. 0-20% were damaged
2. 21-50% were damaged
3. Over 50% were damaged

All varieties had some degree of damage. There were differences in varieties, such as honeycrisp (a high incidence), but it was more difficult to establish a physiological marker to types. For example, brix, pH, skin thickness, time of harvest did not always present large variation. However, to some degree many late and denser varieties had less attack. More midseason varieties had infection than other harvest dates. Of notice was the fact that earlier varieties were attacked but appeared to have less severe damage (in many but not all cases). It is presumed that, since apple maggot flies appear later than other pests in the orchard, the larvae may have less time to feed. Unfortunately many of the early light skinned varieties such as Lodi and Yellow Transparent show damage through the skin even though they may be lightly infected. In some cases, varieties, especially early season types, appeared clean of attack, only to be apparent later if not under refrigeration (presumed later egg hatch).

Part of the difficulty in isolating apple maggot resistance in varieties is the unfounded assumption that we are dealing with a static species. Maggot flies (*Rhagoletis* spp.) is a “species complex” including *R. pomonella* (the culprit in question), *R. mendax* (blueberry maggot), and others to total around 70 currently distinct species. It has been demonstrated (Dietmar Schwarz and colleagues at Penn State,) that hybridizing occurs readily in the wild. Honeysuckle maggot for instance, appears (through gene market analysis) to have been created as a fusion between the blueberry maggot and *R. zephyria* (the snowberry maggot). Since preferences within this genus is known to switch from such distinct host species, it seems reasonable that preference shifts within the subtleties of apple cultivars is even more likely. Current hosts will likely change in time and across geographical locations depending on local genus subsets.

Apple maggot can be a first rate problem due to its extensive tunneling within the apple. Since the entirety of the flesh is often affected (unlike sawfly, codling moth and circlio), the apple can often not be rescued for even culinary use.

Refrigeration temperatures have been shown to kill the larvae, below 35 degrees.

The following are listed according to attack severity : 1 : 0 – 20 % 2 : 21-50% 3: Greater than 50%

CULTIVAR	Apple Maggot
Anoka	3
Breaky	3
Early Harvest	3
Fameuse	3
Heyer 12	3
Honeycrisp	3
Howgate Wonder	3
Marlin Stephens	3
Melba	3
Oriole	3
Parkland	3
Pound Sweet	3
Red Wealthy	3
Shiawassee	3

Sunrise	3
Westland	3
Winesap	3
Alexander	2
Bedford	2
Bowing	2
Britemac	2
Budagovsky 9	2
Centennial	2
Collet	2
Cranberry	2
Dolgo	2
Duchess	2
Dudley Winter	2
Early Cortland	2
Erwin Bauer	2

CULTIVAR	Apple Maggot
Garland	2
Goodland	2
Gravenstein	2
Greensleeves	2
Haralred	2
Hazen	2
Hidden Rose	2
Honeygold	2
Kazakh 739	2
Keepsake	2
Leo	2
Liberty	2
Lobo	2
Lodi	2
Lord Lambourne	2
Macoun	2
Malinda	2
McIntosh	2
Milwaukee	2
Minnehaha	2
Niagara	2
Norda	2
Norland	2
Novamac	2
Patterson	2
Paula Red	2
Quinte	2
Ranetka Crab	2
Red Baron	2
Red Burke	2
Regent	2
Safstaholm	2
Slovianka	2
Smokehouse	2
Vista Bella	2
Walden Calville	2
Walden Golden	2
Wealthy	2
Westfield SNF	2
Whitney	2

Yellow Transparent	2
74818	1
75413	1
Almata	1
Antonovka 48	1
Ashmead's Kernal	1
Autumn Arctic	1
Beacon	1
Bethel	1
Black Oxford	1
Budagovsky 118	1
Burgundy	1
Chestnut Crab	1
Connel Red	1
Cox's Orange Pippin	1
Crab 24 (False Yarlington)	1
Dayton	1
Equinox	1
Fireside	1
Freedom	1
Golden Russet	1
Hyslop Crab	1
Irish Peach	1
Island Winter	1
Macfree	1
Kazakh 761 (k-17)	1
Mantet	1
Morden 359	1
Norson	1
Noran	1
Nova Easygro	1
NW Greening	1
Peace Garden	1
Pink Pearl	1
Pomme Gris	1
Prairie Spy	1
Rambo	1
Red Rock	1
Reine de Pomme	1
Rumpus	1
Selkirk	1

CULTIVAR	Apple Maggot
Shafer	1
Spencer	1
Summer Pearmain	1
Summer Red	1
Sweet Sixteen	1
Trent	1
Wagener	1
Wedge	1
Yarlington mill	1