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. pomenella (the culprit in question), r. mendax (blueberry maggot), and others to total around 70 currently distinct species. It has been demonstrated (Dietmar Schwarz and colleages 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 circulio), the apple can often not be rescued for even culinary use.

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

	Apple	Sunrise	
CULTIVAR	Maggot	Westland	
Anoka	3	Winesap	
Breaky	3	Alexander	
Early Harvest	3	Bedford	
Fameuse	3	Bowing	
Heyer 12	3	Britemac	
Honeycrisp	3	Budagovsky 9	
Howgate Wonder	3	Centennial	
Marlin Stephens	3	Collet	
Melba	3	Cranberry	
Oriole	3	Dolgo	
Parkland	3	Duchess	
Pound Sweet	3	Dudley Winter	
Red Wealthy	3	Early Cortland	
Shiawassee	3	Erwin Bauer	

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

	Apple
CULTIVAR	iviaggot
Gariano	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

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Island Winter1Macfree1Kazakh 761 (k-17)1Mantet1Morden 3591Norson1Noran1Nova Easygro1NW Greening1Peace Garden1Pink Pearl1Prairie Spy1Rambo1Reine de Pomme1Rumpus1Selkirk1	Irish Peach	1
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Pink Pearl1Pomme Gris1Prairie Spy1Rambo1Red Rock1Reine de Pomme1Rumpus1Selkirk1	Peace Garden	1
Pomme Gris1Prairie Spy1Rambo1Red Rock1Reine de Pomme1Rumpus1Selkirk1	Pink Pearl	1
Prairie Spy1Rambo1Red Rock1Reine de Pomme1Rumpus1Selkirk1	Pomme Gris	1
Rambo1Red Rock1Reine de Pomme1Rumpus1Selkirk1	Prairie Spy	1
Red Rock1Reine de Pomme1Rumpus1Selkirk1	Rambo	1
Reine de Pomme1Rumpus1Selkirk1	Red Rock	1
Rumpus1Selkirk1	Reine de Pomme	1
Selkirk 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