

80th Annual New England, New York, Canadian
Fruit Pest Management Workshop
Burlington, VT, 23–24 October 2018
2018 REPORT — QUEBEC APPLE ORCHARDS
PEST TYPE: INSECTS AND MITES

G. Chouinard* & F. Pelletier

With contributions from V. Filion, E. Barriault, K. Bergeron, N. Gagné, S. Beauchamp, S. Gervais, V. Decelles, R. Maheux, G. Tremblay, L. Tétreault-Garneau, I. Turcotte, T. Djedjig, F. Gendron, M. Bolduc, C. Turcotte, S. Tellier, S. Mantha, C. Lacroix, M. Gourdes-Vachon, A.-P. Paradis, G. Charpentier, M. Richard, M. Courchesne, P. E. Yelle, E. Lacoursière, Y. Martin, J.-P. Légaré)

* reporting, Institut de recherche et de développement en agroenvironnement (IRDA)
Saint-Bruno, Québec, J3V 0G7

A. OVERALL SITUATION

- Highly fluctuating temperatures in late fall 2017 + winter 2017–18 (with lows reaching -30°C / -22°F, possibly killing some flower buds and weakening many, see below)
- Bloom and pollination were very good, so fruit set was excellent
- Hot and dry season with many heat waves
- Lack of rain (irrigation systems already in use in May)
- Water shortage for irrigation systems in many orchards in August
- Crop volume relatively high -> apple size was generally below average
- High end-of-season temperatures resulted in lack of fruit color until end of September
- Most cultivars suffered from either color or size problems (except in northern areas)
- Fruit deformities: higher than expected, previous winter's temperatures are suspected

B. MAJOR PROBLEMS, UNUSUAL OR STRIKING EVENTS

Spider mites (*P. ulmi*, *T. urticae*, *T. mcdanieli*): the hot+dry summer was highly favorable for spider mite development. Predatory mites (mainly *N. fallacis*, *T. caudiglans*, *A. fleshneri*) also reached high numbers, often but not always fast enough to prevent miticide applications. Overall, miticides were not used more often than usual, because orchards under mating disruption (MD) for codling moth (see below) required fewer wide-spectrum insecticides and harbored more predatory mites

Obliquebanded leafroller (*Choristoneura rosaceana*): many orchards under MD for codling moth (see below) suffered higher pressure from OBLR, although pressure was also high (and treatments also required) in orchards not under MD.

Apple maggot (*Rhagoletis pomonella*) populations appeared and peaked later than usual despite high temperatures. Late-season applications required in many occasions

Japanese beetle (*Popillia japonica*): localized, increasing populations in areas already infested last year (Eastern townships and Monteregian Hills). Fond of Honeycrisp apples. Tachinid parasitoid *Istocheta aldrichi* present in populations (parasitism rate sometimes reaching as high as 50%).

Brown marmorated stink bug (*Halyomorpha halys*): first trap capture in a field crop this year. Well-established population now in the city of Montreal, alarming citizens and increasing media coverage (devilish stink bug). No captures in fruit crops this year. **Other stink bugs** (mainly *Euschistus* spp.): damage observed at the end of the season on some cultivars (Honeycrisp, Cortland, Empire, Gala, GingerGold . . .).

Apple curculio (*Anthonomus quadrigibbus*): again this year, high populations and damage observed in less intensive production areas. Now identified by the Quebec ministry of agriculture as a resurgent pest for which IPM tools are needed.

Apple flea weevil (*Orchestes* (= *Rhyncaenus*) *pallicornis*) was encountered in some orchards using a relaxed or organic-approved insecticide program, but in low numbers.

C. LESS PROBLEMATIC THAN USUAL

Codling moth (*Cydia pomonella*): in general, populations were more important this year than last year but control was achieved fairly well, and this includes results for the area-wide mating disruption program. Quebec government support for MD (70% – 90% of the cost of dispensers) was prolonged for five additional years (2018–2023). Over 1400 ha of orchards were under MD in 2018, which represents ca. 40% of the area under production.

Plum curculio (*Conotrachelus nenuphar*): control was not problematic because of relatively favorable weather conditions for spraying and for residual activity of insecticides.

Spotted tentiform leafminer (*Lithocolletis blancardella*): it is becoming more usual than unusual, but for the sixth consecutive year, populations were low and control measures rarely, if ever, necessary.

Aphids (all species including the green, the rosy and the woolly apple aphid): almost no control measures needed for any of the three pests. Natural enemies (many species of predators and parasitoids) present and active in colonies.

Mullein plant bug (*Campylomma verbasci*): populations present in many orchards but their predatory action was in general more profitable than their plant feeding habits. Damage observed on susceptible cultivars.

D. OTHER OCCASIONAL ARTHROPODS IDENTIFIED IN COMMERCIAL ORCHARDS THIS YEAR*

PESTS	FAMILY	NO. CASES
<i>Hoplocampa halcyon</i>	Tenthredinidae (Saskatoon Sawfly)	1
<i>Fabogethes nigrescens</i>	Nitidulidae (Black Pollen Beetle)	1
<i>Lepidosaphes ulmi</i>	Diaspididae (Oystershell Scale)	1
<i>Plagiognathus chrysanthemi</i>	Miridae (Trefoil Plant Bug)	1
<i>Scolytus rugulosus</i>	Scolytidae (shothole borer)	1
<i>Clepsis melaleucanus</i>	Tortricidae (Black-patched Clepsis Moth)	1
<i>Pseudexentera oregonana</i>	Tortricidae	1
<i>Synanthedon fulvipes</i>	Sesiidae	1
BENEFICIALS	FAMILY	NO. CASES
<i>Feltiella</i> sp.	Cecidomyidae (Predatory Gall Midge)	1
<i>Podisus placidus</i>	Pentatomidae	1

*Thanks to Jean-Philippe Légaré, agr. entomol., Quebec diagnosis lab, MAPAQ.