

2012 Long Island Fruit Pest Survey

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Nine apple and four peach farms were selected under a tree fruit integrated pest management project managed by the Entomology and Agriculture Stewardship Programs of Cornell Cooperative Extension, Suffolk County with assistance from NY State Agriculture Experiment Station including season-long pest monitoring services and pest management recommendations. In 2012, a total of 32,000 apples and 10,000 peaches were inspected for fruit damage assessment throughout the harvest season. Plum curculio, tarnished plant bug, and European apple sawfly appeared to be the most significant insect pests damaging pome and stone fruits on Long Island.

Plum curculio (PC) was the most damaging pest in Long Island apples, as it was in 2011. However, the overall PC damage was much lower in 2012 (2.59%) in comparison to 2011 season (>12%), despite the unusual warm spring and early pest movement into orchards. Improvement is most likely due to early detection by monitoring traps (2012 is the first year these were tested in Long Island orchards) and the timely use of the reduced-risk insecticide Avaunt. The relatively small size of our orchards, which are surrounded by forest edges (where PC overwinter), and the common practice of planting multiple cultivars within blocks present challenges for PC control for Long Island growers.

Tarnished plant bug (TPB) damage increased in apples, peaches and plums in 2012 over 2011 levels. The overall TPB damage was 1.28% and 2.04% for apples and peaches, respectively. In 2011 damage levels were less than 0.5% in apples. TPB populations may have been higher in 2012 possibly due to an additional generation.

European apple sawfly was not a noticeable problem in 2011. In 2012 damage was minimal but noticeably higher, in some apple orchards causing up to 2% fruit damage. Overall (for all locations) the damage was about 0.32%.

Brown marmorated stink bug (BMSB): In 2012 less than 0.3% of apples sampled were found showing some kind of stink bug damage; these were mostly from the exterior rows near forest borders as might be expected. About 0.11% of peaches were found damaged by some kind of stink bug. Damage could not be attributed to any particular stink bug species. However, one BMSB adult, two green stink bugs (*Chinavia halaris*) adults, and one brown stink bug (*Euschistus servus*) adult were found in apples during the fruit scouting period. The level of stink bug damage found this year in Long Island orchards is not atypical or unusual in the absence of BMSB as damage levels were in 2011.

Oriental fruit moth (OFM) and apple maggot numbers were low in most orchards. The OFM trap counts increased in two orchards in early August, however, fruit damage levels remained

very low in these orchards as well as in other orchards. Overall OFM (in apples and peaches) and apple maggot (in apples) damage was less than 1.0% and 0.2%, respectively.

Spotted wing drosophila (SWD): A total of 36 transparent deli container apple cider vinegar monitoring traps (no sticky card inside) were placed in raspberries (4), peaches (2), blueberries (2), grapes (6), tomatoes (2), apples (2), and adjacent forest areas (18). The first sustained SWD capture on Long Island occurred in late June. Numbers increased as the season progressed. Monitoring will be continued through winter. Pick SWD capture on Long Island was occurred in the week of September 18-25. The numbers were varied by crop and location. During the peak period, an average 135.7, 23.0, 9.3, 545.0, 115.5, and 3.5 SWD were captured per trap/week from raspberries, blueberries, grapes, peaches, apples, and tomatoes, respectively. The numbers are much higher than the similar period in 2011 (some cases >10 times higher).

Raspberries and blackberries were heavily damaged by SWD in 2012. Intensive fruit damage assessments were done by laboratory rearing and fruit inspection. During early August 50 – 70% of sampled berries were found to be infested by spotted wing drosophila. Raspberries were particularly heavily infested (90 – 100%) from late August onward. Blueberries were not affected much by spotted wing drosophila as the blueberry season typically ends by late July to early August on Long Island. However, during early August some infestations were observed in late-harvested berries as determined by rearing study.

Peach damage by spotted wing drosophila was not at a noticeable level in Long Island orchards. In a laboratory rearing, 36 peaches were randomly picked from trees (fruits had some soft spot on skin but without any opening). Only one fruit produced three SWD adults. No oviposition marks or breathing tubes were observed when fruits were checked prior to set in rearing cages.

Grape damage was assessed intensively during the harvest period. No spotted wing drosophila oviposition (egg-laying) sites were observed in fruits until mid-September. However, starting late September a few (2%) SWD oviposition sites were found in ‘Merlot’ grapes. Since mid-October slightly increased numbers of oviposition (5%) sites were observed in both healthy “Merlot” and “Cabernet Sauvignon” grapes. (We did not find any oviposition sites in Chardonnay grapes harvested earlier). Fruit color, ripeness, sugar content, and acidic condition might influence fly preference. Lack of other preferred hosts in early fall might also put late cultivars at higher risk of infestation. Monitoring will continue through final grape harvest to try and assess impact SWD is having on late-harvested grapes.

We also have checked wild fruit grown in the region including areas adjacent to fruit orchards. Pokeweed, autumn olive, bittersweet nightshade, and yew appeared to be favorable wild hosts for spotted wing drosophila. Of samples taken, we found 40 – 70% pokeweed berries, bittersweet nightshade, and autumn olives with evidence of oviposition and are rearing adults from infested fruit. Some fruits appear to be less preferred (European cranberrybush, cranberry cotoneaster, oriental bittersweet, Virginia creeper, dogwood, and horsenettle etc.).

Detailed results from our adult emergence data for all the crops and wild hosts reared in the laboratory will be reported later. Many thanks to the Cornell Cooperative Extension of Suffolk County Agriculture Stewardship Program, The Friends of Long Island Horticulture, and the New

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