



A Time for the field for LOF team

NEW Pest detected! Is this the beginning of something bigger? Shot hole borer or Ambrosia beetles have been detected in 6 sites so far in high density tall and super spindle plantings, nurseries and established orchards where fire blight has also been detected. Dan Gilrein, Extension Entomologist at Long Island Lab, identified the species as “black stem borer”, *Xylosandrus germanus*, which was first reported in Long Island in 1932. It is an Asian pest that attacks nursery trees, ornamentals, and, yes, apple. These borers are cited in literature to attack apparently healthy trees with ½ to 20 inch diameter trunks. They will also attack injured or stressed trees. They have not been noted in orchards as significant populations until this season. Art Agnello and Debbie will look into possible controls. The photo shows the tiny beetle excavating tunnels for the eggs and larvae to develop in the wood of the trunk.



Fire Blight infections were collected from 32 farms in 2013, mostly from western NY in newly planted or young orchards to survey for the extent of bacterial resistance to streptomycin. There were 320 samples submitted, 278 total samples were infected with fire blight, 42 samples with no *Erwinia amylovora* detected. Many samples were collected from NY2, now known as Ruby Frost orchards that were planted this season since that variety seems to be very susceptible to fire blight. There were 18 samples from 8 new farms with some level of resistance to streptomycin. Streptomycin resistance in fire blight bacteria has been detected in a total of 17 locations in NY (mainly WNY). Since streptomycin resistance was first detected in 2002 in Wayne Co., this survey had not detected streptomycin resistance until 2011. Since 2011, extension programs have been recommending alternative fire blight management strategies to growers under these situations. Growers in high risk areas have begun to incorporate other antibiotics in their blossom protection programs, and less phytotoxic copper during shoot growth, resulting in low detection rates of streptomycin resistance in years after streptomycin was found.

Fall weed control treatments were tested to determine how long into the spring the residual control would hold. The treatments were applied on Oct 17, 2012. Goal, Matrix, and non-residual treatments of Gramoxone, and glyphosate w/wo 2,4-D treatments broke 10% by May 20, around petal fall in apples. Fall applied Chateau/Prowl, held weed cover below 10% through mid-June. Alion continued to hold weeds back though most of the season. Untreated “check” plots, and all treatment plots without a fall residual herbicide including glyphosate, paraquat, 2,4-D + glyphosate, and 2,4-D alone were treated on May 27, 2013 using post-emergence herbicide. The main weeds in non-residual



Hoary bittercress, a common winter annual in orchard herbicide strips in early spring.

herbicide plots were common winter annuals favored by growers. But the clear benefit, as the summer annuals began to germinate in mid-May, was that the growers did not have to add weed control to their very busy spring schedule of scab, fire blight, fertilization, fruit thinning sprays, and tree planting until later in the spring. There is still a question of whether these early spring weeds compete with tree growth for nutrients applied in early spring, in high-density orchards.

Fruit Farm Workers Needed! Alison De Marree assists growers as they step through the H2-A process to obtain reliable labor. Approximately 6,000 pickers are needed to harvest NY'S 31 million bu. apple crop over an 8-week period. Growers have 6-8 weeks to harvest 20 apple varieties; each variety has a 3-5 day harvest window to insure maximum quality. Many growers must harvest 2,000 – 4,000 bushel or more per day to complete the apple harvest with high quality fruit. If fresh market apples are harvested at the correct time growers receive \$7-\$25 per bushel; fruit harvested late is diverted to other markets for \$1.98 - \$2.31 per bushel which is below the average range of growing and harvesting costs of \$6.00 - \$6.50 per bushel.

The 2012 Fruit Farm Business Summary was an anomaly with the freeze damage resulting in 5 – 50% of a crop. Alison De Marree monitors the average annual investment in fruit production in the 5 counties on the southern shore of Lake Ontario. Growers invested an average of \$147.8 million in growing & harvesting the fruit crop, and an additional annual capital investment of \$28.5 million in infrastructure – trees, irrigation, buildings such as spray facilities, labor housing, storage & packing facilities in 2012. WNY Growers averaged \$1,000 per bearing acre crop insurance indemnities (fresh apple crop insurance) with average cost to grow and harvest apples at \$5,500 to \$6,500 per acre. So it was good to see crop insurance working!

Purchase and training in the use of a new Gas Chromatograph (GC) for the Orleans CCE Maturity Lab. This is to replace the old GC that finally ceased working properly after well over 20 years. The GC is the backbone of the Harvest Maturity Program that allows the measurement of tiny quantities of ethylene, the principal indicator of maturity that marks when growers need to harvest their fruit to maximize storage potential and minimize storage disorders.

More Growers Worked “Smarter Not Harder” More and more Western NY apple growers have been increasing the number of trees planted per acre for earlier yields, better fruit quality, and higher yields per acre compared to the traditional systems. Many growers also want to be in a position to improve labor efficiency in the future. Harvest labor represents about 1/3 of the labor hours in an apple orchard. Growers who are adopting thin canopy tree structure and narrow rows (tall spindle) can improve labor efficiencies by using platforms for various operations including fruit thinning by hand, summer pruning, and harvest and are being evaluated by Mario, Terence Robinson, and Alison. Prototype picking aid machines such as a machine recently developed by WNY grower Paul Wafler, (as well as the DBR, the Blosi, the Orsi, the Pluck-O-Trac or the Picker-tech) are being evaluated and show promise of increasing future labor efficiency, but need more testing.



Will ladders be obsolete in Tall Spindle Orchards in 5 years?