

Summary of Insect Survey and Trapping Study 2010 – Nova Scotia Grapes

Kirk Hillier and Jose Lefebvre

Purpose:

To conduct a baseline survey of regional vineyards in Nova Scotia for the incidence of pest and insect threats to the grape-growing industry.

Methodology:

Methods will be evaluated for surveying insect populations to enable forecasting of future infestations. This will include the use of pheromone trapping for selected pest species, such as grape berry moth, omnivorous leafroller and red banded leaf roller. Foliar and vine/spur sampling will be conducted to identify populations of leafhoppers, cutworms, leafrollers, beetle (particularly multicoloured Asian/Harlequin ladybird beetle) and mite species. Selective soil sampling will be conducted to diagnose potential nematode infection. Diseased and stressed plants will be selectively flagged and sampled for diagnosis.



Results:

For the trapping study we found no incidence for some of the most devastating insect pests for vineyard operations – specifically Currant Clearwing, Grape Root Borer and Grape Berry Moth. This doesn't necessarily mean that these species are not present regionally, but is a good indication that if they are, populations are below and detection limits, or not in the vicinity of vineyards within this study. Several other 'minor' grape pests were noted regionally within pheromone traps, including Obliquebanded Leafroller, Fruittree Leafroller, Orange Tortrix, Eyespotted Budmoth in relatively higher numbers and Variegated Leafroller and Pandemis moth in relatively lower numbers. The following figures summarize weekly incidence (from May 18 – August 29, 2010).

It is worth noting that all of the above species are omnivorous (largely defoliators, but can cause some direct damage to fruit), and often severe pests of apples. It is also curious that the incidence of all of these species was greatest in Annapolis Valley Vineyards (particularly the Gaspereau Valley), many of which could arguably be considered in close proximity to active and former apple-growing operations. That being said, the damage caused by any of these moths in the past summer was negligible, and very few larvae were actually collected from grapes in the field. By knowing the presence of these pests and their flight seasons within the region, should they become problematic in the future, we can apply this information for appropriate management decisions.

Conclusions:

Based upon current survey results, insect pest threats are minimal within the region, with many of the most significant pest species not found within commercial vineyards sampled. Several minor pest species were found in traps, though evidence of damage on grapevines was insignificant. Knowing the presence/absence of particular pests will be important as the industry moves forward. First, economical management decisions can be made based upon such pest distributions. Second, growers should continue to be vigilant with regard to the more 'minor' pest species which were noted within this study,

particularly in areas adjacent to other agricultural operations wherein omnivorous insects may ‘cross-over’ from other crops such as apples. This may include the use of proven techniques such as pheromone-trapping noted in this study. Third, great care should be taken to prevent importation of more significant pest species through the transport of vines for propagation.

Total trap capture and flight season for insect species collected in pheromone traps within Nova Scotia Vineyards (May-August 2010).

Figure 1: Total capture May-August 2010

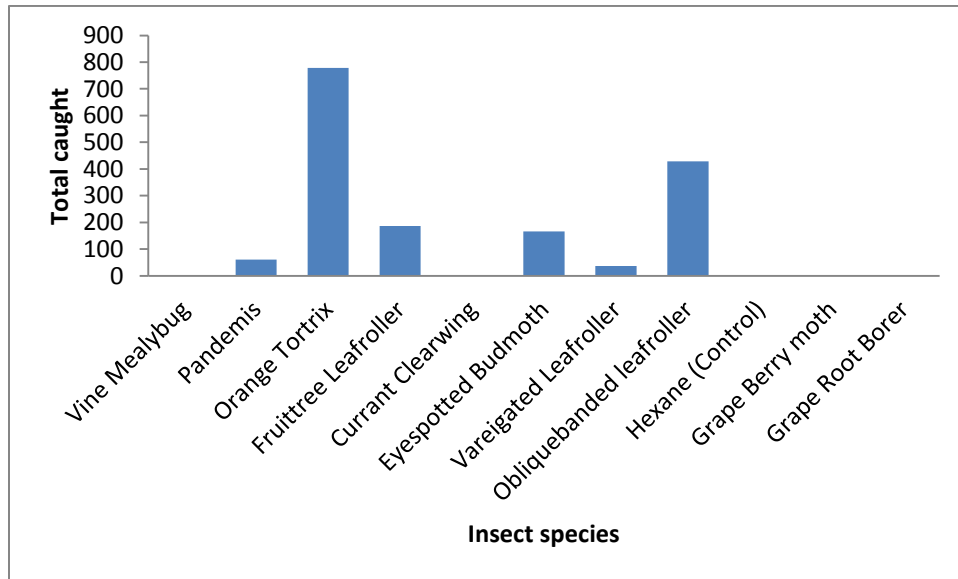


Figure 2: Total incidence of insects trapped by site

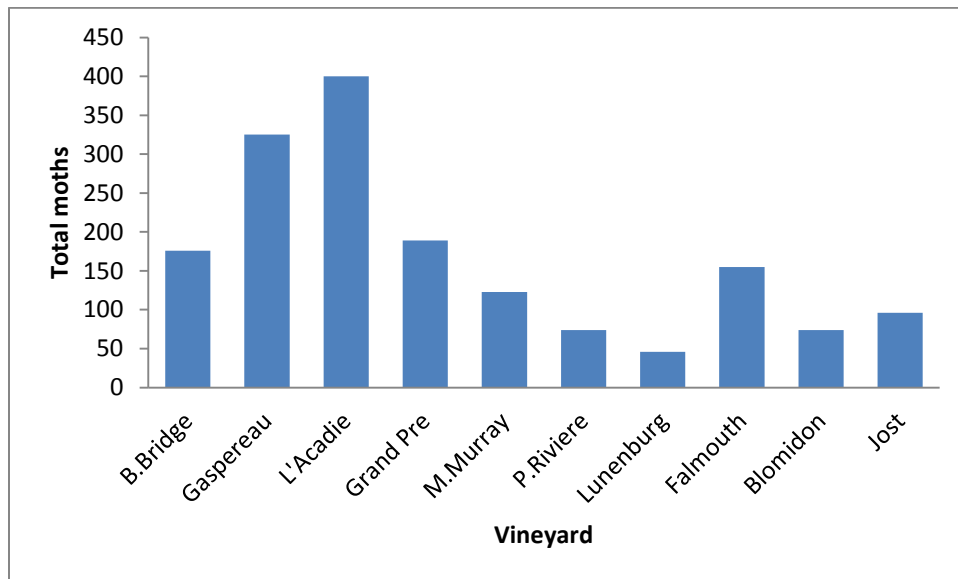


Figure 3: Insects captured/week (all species pooled)

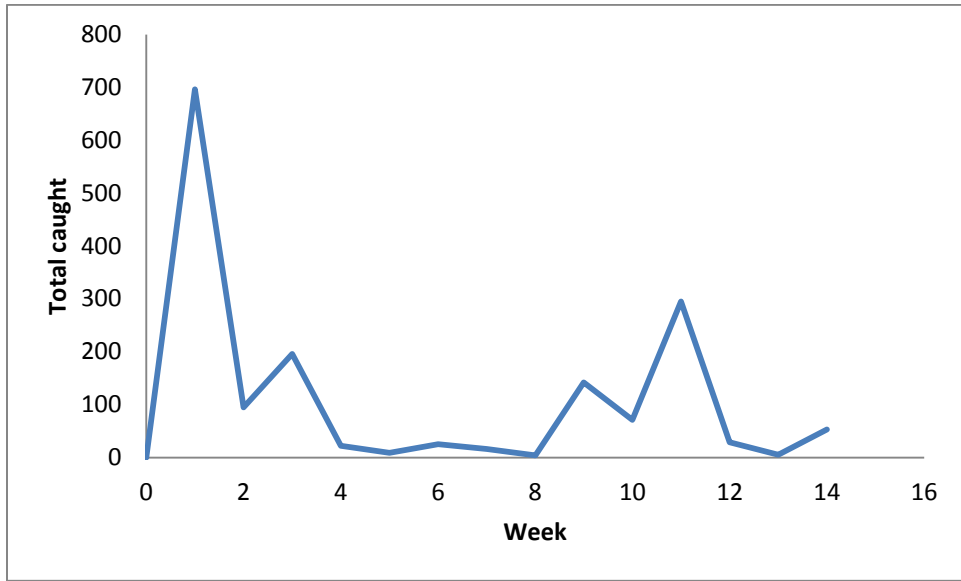


Figure 4: Total capture, Obliquebanded leafroller

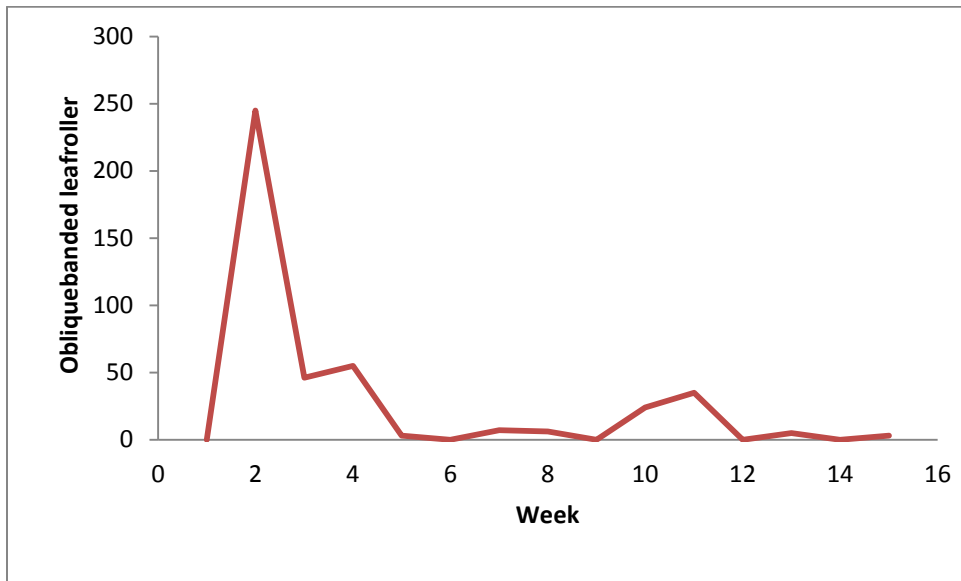


Figure 5: Total capture, Fruittree leafroller

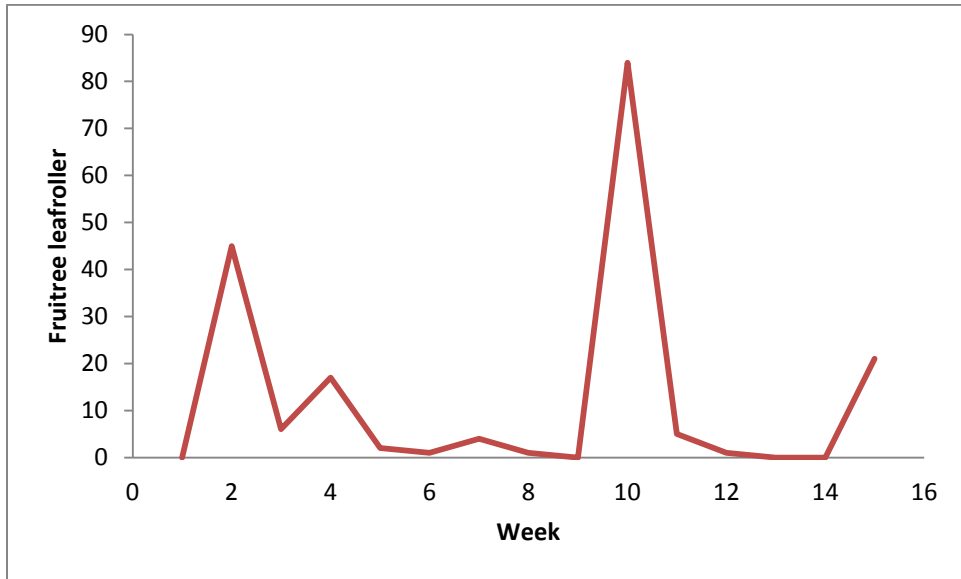


Figure 6: Total capture, Eyespotted budmoth

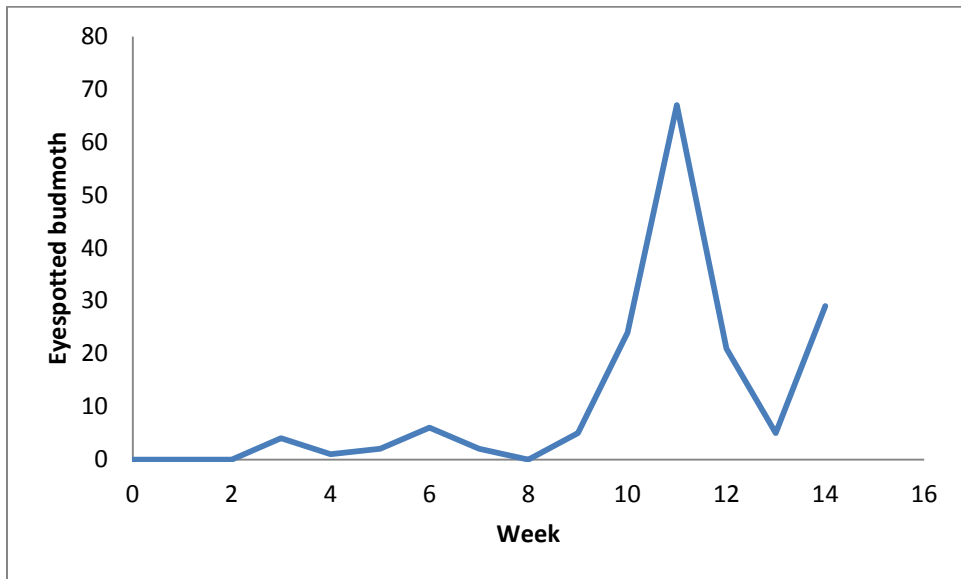


Figure 7: Total capture, Orange Tortrix

