

## Monitoring and Reporting Soybean Aphid Infestation Levels in Ontario Soybean Fields

**Purpose:** To monitor and report soybean aphid infestation levels weekly across Southern and Eastern Ontario. Providing timely and accurate reporting of aphid levels and provincial specialist's recommendations each week to Ontario growers and consultants alerts them to potential pest problems, allowing them to be proactive in making sound management decisions within their field, applying pesticides only when necessary. This project was also tied into a larger North American soybean aphid monitoring and extension program to aid in the collection of pest and predator data for future aphid prediction models and for a greater understanding of pest and natural enemy dynamics.

### Methods:

75 soybean fields were monitored for soybean insects and diseases across Southern and Eastern Ontario by Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) staff and key consultants. 37 of these sites were soybean rust sentinel plots that were planted specifically for early rust detection, but utilized for additional soybean pest monitoring by OMAFRA staff. In addition to these sites, 38 "mobile" sites were set up in regions of Ontario where sentinel plots did not exist. These mobile sites represented typical grower fields that were planted at normal planting dates for their region, more likely suited for soybean aphid infestations.

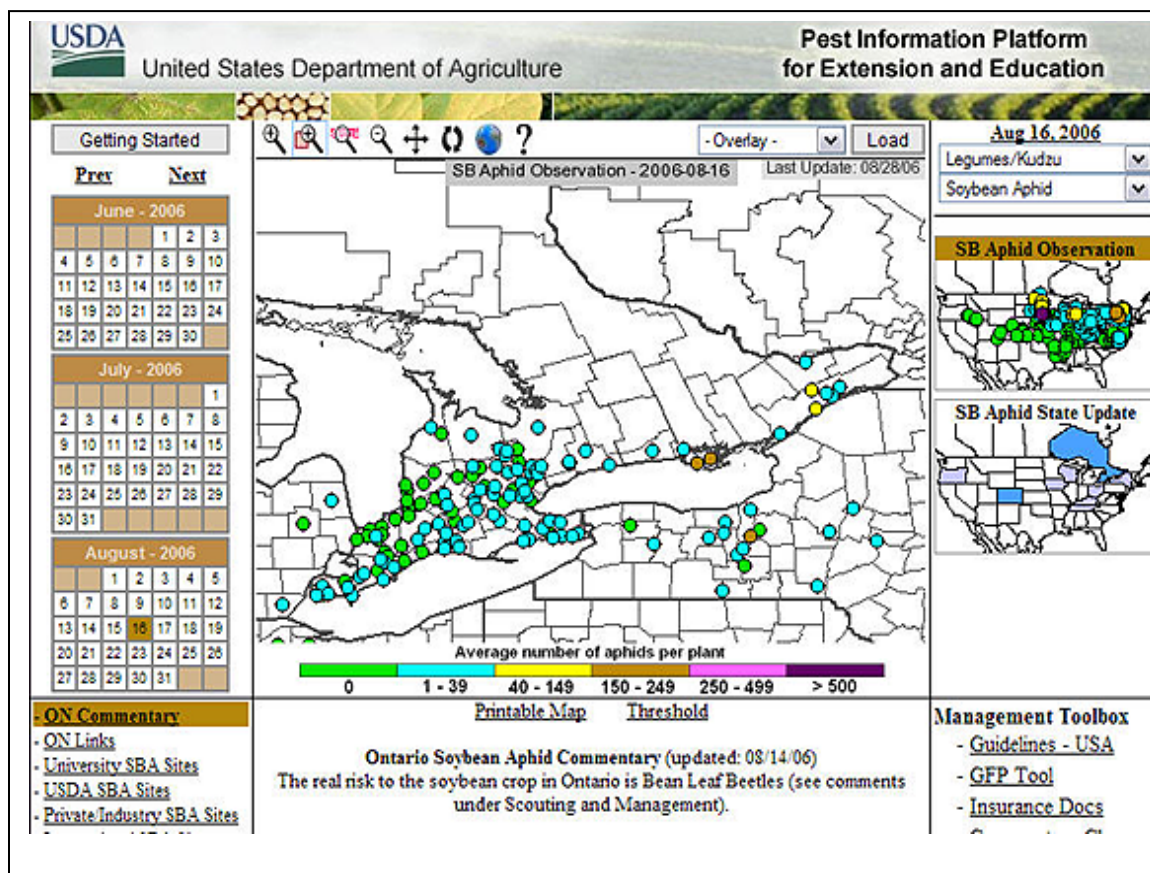
Fields were scouted weekly from May to early September. Pertinent cropping information was recorded including variety, planting date, latitude, longitude, row spacing, crop stage etc. 20 random plants were selected each week and the average number of aphids per plant was recorded. Natural enemies, other insect pests, plant health and plant diseases if present on these plants were also recorded.

Based on the scouting results each week, the OMAFRA Field Crop Entomologist and Field Crop Plant Pathologists would provide commentary, including scouting and management recommendations for pertinent soybean pest issues that would arise based on the monitoring program. Timely articles were also written for CropPest newsletter and other media sites to help distribute key pest information to Ontario soybean growers.

### Results:

Aphid data from these sites were entered into a mapping program on the USDA Pest Information Platform for Extension and Education (PIPE) at [www.sbrusa.net](http://www.sbrusa.net). The same data was also used to create Ontario maps by Laresco that were then placed on the Ontario Soybean Growers website at [www.soybean.on.ca](http://www.soybean.on.ca) by OMAFRA staff. The rust and plant disease information was utilized by the OMAFRA Field Crop Plant Pathologist for the Soybean Rust sentinel plot monitoring program.

Although soybean aphid populations were relatively low for most fields in Ontario, there were a few sites in eastern Ontario that came close to threshold levels (Fig. 1). By including our on the USDA PIPE network, we were able to identify pockets of similar infestation levels in NY, that were directly across from these eastern Ontario sites. This indicates that these two areas experienced similar conditions that allowed for aphid populations to increase, providing us with the opportunity to further investigate why this may have occurred and would not have been evident without our partnership in the USDA pest monitoring network.



**Figure 1. Map taken from the USDA PIPE website ([www.sbrusa.net](http://www.sbrusa.net)) indicating our soybean aphid scouting results in Ontario for the week of August 16<sup>th</sup>, 2006. Clients can zoom in on their county to view our results, read the OMAFRA specialist's weekly commentary, recommendations and see what aphid populations are doing across North America.**

Monitoring fields evenly spread across southern and eastern Ontario gives growers and consultants an indication of could be happening within their own fields. Seeing aphid population levels rise within their regions encourages them to get out and scout their own fields and to determine if management is necessary. Despite our extensive scouting efforts, grower and consultants must still scout their own fields to ensure that conditions have not allowed aphid populations to reach thresholds there.

**Summary:**

This project was a large collaborative effort by OMAFRA staff, ag. industry, consultants, growers and US extension specialists. Partnering with and having access to pest data across Ontario and from neighbouring states allows us to stay alert to any potential pest issues that could arise here in Ontario. This collaboration gives OMAFRA extension specialists the ability to provide growers with early warnings and recommendations to key soybean pests, giving our growers to opportunity to respond quickly. Continuing this project into the future, including monitoring for several different insect and disease pests will also increase the chance of discovering any new invasive species that arrive in the US or Canada, allowing us to respond quickly, potentially reducing it's impact to our crops.

**Next Steps:**

The soybean aphid and rust sentinel plots will be monitored again in 2007 with scouting results mapped and management recommendations provided on both the USDA PIPE website and the Ontario Soybean Growers Website.

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**Location of Project Final Report:**