

**Northern NY Agricultural Development Program
2012 Project Report
April 1 – December 31, 2012**

**Hands on Training for On-farm Application of Nematodes
to Control Alfalfa Snout Beetle**

Project Leader(s):

Joe Lawrence
CCE Lewis County
Lowville, NY 13367
Email: jrl65@cornell.edu
315-778-5270

Mike Hunter
CCE Jefferson County
Watertown, NY 13601
Email: meh27@cornell.edu
315-788-8450

Collaborator(s):

- Elson Shields, Professor, Department of Entomology, Cornell University
- Antonio Testa, Research Support Specialist, Department of Entomology, Cornell University
 - University
- Don Viands, Professor, Cornell Department of Plant Breeding and Genetics, Cornell University
- Julie Hansen Senior Research Associate, Cornell Department of Plant Breeding and Genetics, Cornell University
- Anita Deming, Cornell Cooperative Extension Essex County
- Rick LeVitre, Cornell Cooperative Extension Franklin County
- Brent Buchanan, Cornell Cooperative Extension St. Lawrence County

Cooperating Producers:

Alfalfa Snout Beetle Workshops 2012, Farmer Participants

Shelmidine, Doug	Jefferson	Fox , Jason	Franklin
Sullivan, Gary	Lewis	Martin , Clinton	Franklin
Sullivan, Kristy	Lewis	Ooms, Josh	Franklin
Mahoney, Jackie	Lewis	DeBeer, Mary	Franklin
Jones, Zach	Lewis	Choiniere, Real	Franklin
Greip, Jacob	Jefferson	Choiniere, Jean Louis	Franklin
Yousey, Nathan	Lewis	Mallette, Rod	Franklin
Schrag, Wilfred	Lewis	Dimock, Bruce	Clinton
Bonowski, Tom	Oswego	Beane, John	Franklin
Gohlert, Bernie	Lewis		

*Meetings were also attended by a number of local agri-service professionals.

Background:

Alfalfa snout beetle remains the single most important limiting factor for alfalfa production in the NNY region where larval feeding kills out large portions of alfalfa stands each year. Long-term support from NNYADP has helped to identify biological control nematodes which have been demonstrated to be very effective in controlling alfalfa snout beetle in fields when applied. Since the nematodes are native to NNY, they persist in the fields after application for many years.

The Shields Lab, in cooperation with CCE and local farmers, have developed and fine tuned a very straight forward and low cost method for farmers to apply these nematodes to their own fields. To date, bio-control nematodes have been applied to 137 NNY alfalfa fields infested with alfalfa snout beetle. The current breakdown of nematode applied fields across the NNY 6 county region is: Lewis – 43 fields, St Lawrence – 39 fields, Jefferson – 25 fields, Franklin – 16 fields, Essex – 7 fields, Clinton – 7 fields. Since 2009, 24 farmers have self-applied nematodes to 48 of their own fields and the farmers reared the nematodes themselves for 20 of the 48 fields.

Farmers who have utilized this method have found the application technique to be very user friendly and several now have several years of experience rearing and applying nematodes on their own farms. We have also observed great collaboration between farms in sharing low cost, homemade nematode applicators (sprayers).

However, there are also a number of farmers who have been hesitant to implement this control. We believe that despite a highly visible educational presence on the topic at various meetings and through newsletter articles, etc. that many farms need to see the process in person to fully understand how it works before they are willing to try it.

Methods:

Three hands-on farmer workshops were organized across Northern NY. These workshops were held in Copenhagen (Lewis County) on March 6, 2012; Malone (Franklin County) on March 14, 2012 and Canton (St Lawrence County) on March 15, 2012.

As a result of attending the winter workshops each farmer received the supplies needed to for application of nematodes to a subset of fields on their farm in the summer of 2012.

In the summer of 2012 farms that attended the winter workshop as well as farms that discovered new infestations in the spring of 2012 applied nematodes to their fields through a coordinated effort of working locally with CCE educators and the Shield's Lab at Cornell to obtain supplies and make the applications throughout the growing season.

Additionally a grower meeting was held in Lewis County at the farm of Gary Sullivan on July 10, 2012 to further encourage the initiative. This field meeting was attended by 7 farmers and two local agri-service professionals.

Results:

Total attendance was 23 for the three workshops representing an estimated 10,000 acres of cropland across Northern NY. In addition to farm attendants several agri-service professionals attended which will result in a greater dissemination of the information as they will be able to share the information with a larger number of their farm clients.

In the summer of 2012 twenty three (23) new fields had nematodes applied for the first time.

Conclusions/Outcomes/Impacts:

New farms became engaged in the efforts to control ASB with nematodes as a biological control and new acres of land were treated around NNY furthering the effort to make farmers aware of the threat ASB causes and the opportunity to treat. The staffing situation for CCE field crops in Eastern NY hindered the ability to get the word out about the project and implement the program on more farms in that area of NNY.

Outreach:

Cornell Cooperative Extension educators continue to promote the use of nematodes as a biological control for Alfalfa Snout Beetle to farmers through a variety of mechanisms, including farm visits, newsletter articles and demonstrations.

Additionally CCE educators continue to work with Cornell Staff to promote these methods including through the release of electronic communication resources such as the new Alfalfa Snout Beetle website which was developed with support from the Northern NY Agricultural Development Program.

Publicist Kara Lynn Dunn has continued to provide press release information on the topic.

Example Press Release from Kara Lynn Dunn:

PRESS RELEASE for IMMEDIATE USE: August 27, 2012

Now is the Time to Apply Alfalfa Snout Beetle-Busting Nematodes

For farmers who grow alfalfa to feed their dairy cows and other livestock and to sell as a cash crop, now is the time to apply the native nematodes that Northern New York Agricultural Development Program (NNYADP)–funded research has shown to help control the highly-destructive alfalfa snout beetle (ASB).

Some farmers in the region have followed the inexpensive farmer-friendly nematode-rearing protocol developed by Cornell University entomologist Elson Shields and his Shields lab research team. The treatment employs two types of Northern New York-native nematodes that work in the shallower and deeper soil levels. The step-by-step manual is online at www.nnyagdev.org.

The Cornell researchers believe that an initial treatment to establish a population of the nematodes should lead to long-term control of ASB. Many growers who are rearing and applying the nematodes are treating multiple and entire fields for widespread response.

The cost of the nematode application per acre is approximately 25 percent of the cost of losing of losing an alfalfa stand to ASB.

A new economic study requested by Shields and conducted by agronomist Everett Thomas estimates ASB crop damage can result in the loss of as much as \$175 to \$230 per acre for the destruction of a second-year stand of the valuable feed and cash crop.

More than 500,000 acres of New York agricultural land is known to be infested with insect pest that can destroy entire fields in one year. Two decades of research, funded by the NNYADP, has developed the nematode biocontrol solution and is continuing to advance the breeding of ASB-resistant alfalfa varieties. Donald R. Viands and Julie L. Hanson at Cornell lead the plant breeding research work in cooperation with Shields' lab personnel.

ASB is known to exist in Clinton, Essex, Franklin, Jefferson, Lewis and St. Lawrence Counties in Northern New York; in Oswego, Cayuga and Wayne Counties along Lake Ontario; and in southeastern Ontario, Canada.

The New York Farm Viability Institute and Cornell University Agricultural Experiment Station have also provided funding in support of development of ASB control. Learn more online at www.nnyagdev.org. #

Next steps if results suggest continued work is needed in the areas of research, demonstration and/or education.

While many farms choose to apply the nematodes their self we continue to hear from many farms that they would prefer to hire the application done. We have a few successful examples of farms hiring a local agri-business to make the applications and this model could be explored further.

Cooperative Extension Educators will continue to work closely with farmers in drawing attention to the damage caused by ASB and the use of nematodes as a biological control.

Cornell staff will monitor fields that have been inoculated to assure that the nematode applications are successful and persist in the fields to assure continued control of Alfalfa Snout Beetle.

Acknowledgments: We thank Northern New York Agricultural Development Program, Cornell Faculty and Staff, and Cornell Cooperative Extension educators for their collaboration and support.

For more information:

Elson Shields
Cornell University
Email: es28@cornell.edu
607-255-8428

Mike Hunter
CCE Jefferson County
Email: meh27@cornell.edu
315-788-8450

Gary & Kristy Sullivan
Sullivan's Heifer Hotel Farm
Carthage, NY 13619
(315) 493-7943

Wilfred Schrag
Dairy Farm
Lowville, NY 13367
315-376-3270

Doug Shelmidine
Sheland Farm, Adams, NY 13605
Email: dshel@frontiernet.net