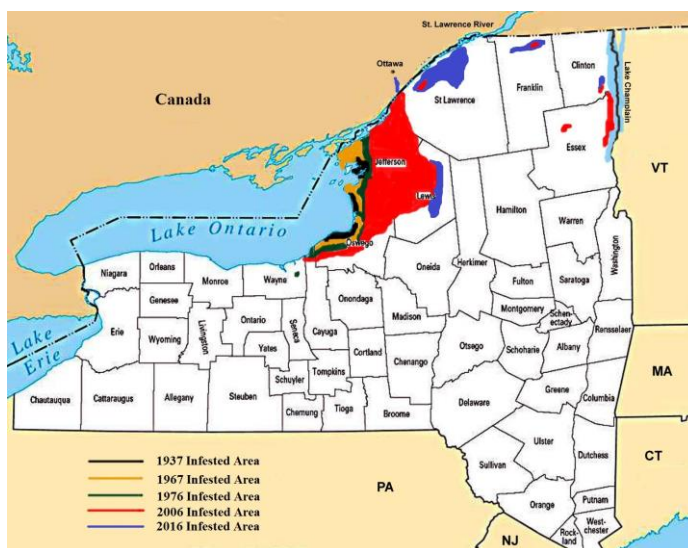




Alfalfa Snout Beetle – Hunting Season is Now Open

Calendars have turned to October and the weather has turned cooler. It's the best time of year to hunt and diagnose Alfalfa Snout Beetle (ASB) infestations in hayfields and pastures. Over the past several years, ASB has been found in 9 counties in Northern NY and in Ontario, Canada. The map below highlights known infestations as of 2016. Newly infested fields were discovered in St. Lawrence and Franklin Counties in fall of 2013. Fall is the best time to find the insect due to its 2-year subterranean life cycle.

It takes 2 years for an ASB larvae to hatch from an egg, develop, pupate and emerge from the soil as an adult beetle. Adults emerge from the soil in the spring (year 1), feed on new alfalfa shoots and begin looking for a new field to lay eggs. Adult ASB do not fly but may be seen during this very brief springtime window, walking across roads or lawns looking for a suitable host plant to lay eggs. Alfalfa is a favorite host plant, but ASB will also use red and white clover, broad-leafed dock, wild carrot, wild strawberries, blackberries, dogwood, and a few other legumes and weeds. Eggs are laid at the base of a host plant and when they hatch, new larvae begin feeding on alfalfa roots. In late fall (of year 1), hatched larvae burrow deep into the soil and remain for a full year (year 2), developing into adults. In spring of year 3, new adults emerge from the soil and begin the cycle again, by walking to a new host plant area to deposit their eggs. ASB eggs and young larvae can be transported in soil that is moved from one place to another. They can be 'imported' onto your farm with gravel or topsoil, in hay from infested fields, on shared farm equipment and in waterways.



Geospatial expansion of Alfalfa Snout Beetle through 2016. (Map from Dr. Elson Shields' www.alfalfasnoutbeetle.org.)

Fall is the easiest time of year to scout for affected alfalfa plants and to hunt for ASB larvae in a suspect field or pasture. In the spring and summer, ASB larvae live deeper in the soil profile and are therefore difficult to find. In the fall however, they move toward the soil surface and feed on alfalfa roots. To hunt for ASB, grab a spade and walk into an alfalfa or alfalfa-grass field. But before doing any digging, visually scan the field for areas with declining alfalfa plants or areas where alfalfa has disappeared. Using a spade, dig up a few plants that appear to be struggling and check the roots for signs of larval feeding. If there are patches within the field where alfalfa is gone, check a few plants at the margin of the affected area. Dig up individual plants and check the tap root for holes, channels or other signs of grub feeding. Healthy roots appear light colored



and strong. Damaged roots will be darker brown, rough and may even look like a well-used woodpecker tree. Inspect the roots, but also look for ASB larvae or grubs in the soil around the roots. ASB larvae are about ¼ to ½” long, white with a reddish-brown head and are legless. Larvae may be found in the soil near the roots or burrowed into the root or crown plant tissues. Plants with severely damaged roots will pull easily from the soil without using your spade. If in your ASB hunt you discover larvae, you need to take corrective action.

If you do find ASB larvae in your field, corrective action is needed right away to get them under control. Without control, they’ll spread to neighboring fields and pastures. To date, no chemical control is available for ASB. The only available controls for ASB are crop rotation and entomopathogenic nematodes. Rotation of alfalfa with non-host crops such as corn, small grains and soybeans, breaks the life cycle and reduces populations of ASB. Be aware however, that ASB may move into neighboring fields if alfalfa is nearby. In heavily infested fields, rotation crops should be present for 2+ years before reseeding alfalfa. ASB populations can be minimized by keeping alfalfa stands for only 3 years – seeding year plus 2 additional production years. Adding a 4th or 5th year allows the beetle population to multiply to extremely high levels.

A native biological control method is also available. Entomopathogenic nematodes have been found to be effective at dramatically reducing populations to sub-economically important levels in Cornell research trials. Professor Elson Shields at Cornell has identified nematodes, native to Northern NY, which parasitize ASB and dramatically reduce their numbers. These nematodes have been applied to alfalfa fields throughout Northern NY and have persisted though rotations at levels which provide long-term control of ASB. Dr. Shields’ lab is teaching farmers to grow and apply these nematodes to their own infested fields.



White, legless Alfalfa Snout Beetle larvae eating inside an alfalfa taproot. (Photo by K. O’Neil, St. Lawrence County, 2014)

ASB-resistant alfalfa varieties are under development at Cornell and are commercially available. It should be noted that resistant varieties alone are not enough to control ASB; nematode treatment is also needed.

Limit spread of ASB on your fields by cleaning all farm machinery thoroughly before moving it from an infested field. Store first-cut hay from infested fields for at least 2 months before moving it off-farm or onto a clean field. Only accept delivery of soil or gravel from clean sources.

Now is the best time to scout for ASB damage on your alfalfa fields. Contact a Regional Specialist for assistance or to report an infestation.



For more information about field crop and soil management, contact your local Cornell Cooperative Extension office or NNY Cornell University Cooperative Extension Regional Field Crops and Soils Specialists, Mike Hunter and Kitty O'Neil.

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Our Mission

“The North Country Regional Ag Team aims to improve the productivity and viability of agricultural industries, people and communities in Jefferson, Lewis, St. Lawrence, Franklin, Clinton and Essex Counties by promoting productive, safe, economically and environmentally sustainable management practices and by providing assistance to industry, government, and other agencies in evaluating the impact of public policies affecting the industry.”

Additional resources:

1. Dr. Shield's lab and latest ASB information. <http://www.alfalfasnoutbeetle.org/>
2. Shields, E. et al. 2009. Biological Control of Alfalfa Snout Beetle with a multi-species application of locally adapted persistent entomopathogenic nematodes: The first success. American Entomologist 55:250. (<http://www.nnyagdev.org/PDF/2010/Shields.pdf>)

For more information about field crop and soil management, contact your local Cornell Cooperative Extension office or contact Kitty O'Neil, CCE Northern New York directly at kao32@cornell.edu, 315-379- 9192 x253, 315 854 1218 or follow on Twitter @CCENNYCropSoil.

The Cornell Cooperative Extension of Northern New York website is www.ccenny.com.

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