Worm Woes
Lookout for Slithery Snakeworms

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Tri-State Greenhouse IPM Workshop, January 4-6, 2017

Getting Down & Dirty

Earthworms not native to Northern landscapes (from Europe & Asia)

- Extinction during last ice age (11,000 years ago)
- Returned to northern parts of N. Am. with settlers (1600s)

Spread to new areas via human activities

- Disposal of purchased worm bait into the landscape
- **Movement of plant stock/compost/mulch from nurseries to landscapes**

Harsh winters typically limit spread

- Climate change implications

The Canadian Crawler (*Lumbricus terrestris*) is a European worm commonly sold as bait

A "Snake in the Grass"

31 worm species in New England

- 10 are linked to greenhouses & composting facilities

European earthworms

- e.g. *Lumbricus terrestris* – Canadian Nightcrawler

Asian earthworms

- e.g. *Amynthas agrestis* - Snake/Jumping worm
  - Outcompetes European spp.
  - Spreading north as climate warms
  - Concerning forest pest
  - "Restricted" in Wisconsin

Amynthas spp. have a white ring that stretches all around the body & they flail/jump around when disturbed

Invasions of Non-native Species Causes Biodiversity Loss

Concerning for Maple industry

Worms change forest ecosystems

Disturb soil physical, chemical and biological processes & create:

- Unsuitable medium for seed germination = reduced regeneration
- Suitable habitat for additional invasive species (Barberry, Multiflora Rose, Honeysuckle, etc.)
- Species displacement that rely on duff layers (insects, salamanders, etc.), wildflowers, ferns, etc.

Forest Structure Change

Amynthas can make leaf litter disappear within a few months, leaving bare soil with little to no understory plants

Not invaded

Invaded

Digging Up Dirt

Little is known about the distribution of *Amynthas* worms, or their impact on Northeastern forests

Assessing worm impact on sugarbushes: understory coverage (maple regeneration), earthworm diversity, abundance & damage

Several site across 3 coldhardiness zones (4-6) across 5 states

Damage was assessed using the **Invasive Earthworm Rapid Assessment Tool (IERAT)**
1-no disturbance; 5-significant disturbance

Year	States	Sites	*Amynthas*	*Lumbricus*	IERAT (with/without)
2015	NH, NY, VT	18	11%	39%	5/2
2016	CT, MA, NH, NY, VT	39	26%	26%	4/3

Take Home Message

The Ironic Truth: Earthworms Good for Gardens, Bad for Forests

Effective management options limited

What can the Horticultural Industry do?

Consider Common Sense **Best Management Practices (BMPs)** to PREVENT spread

Monitor/Inspect incoming stock for worms & their signs (castings)

Sell or purchase compost heated to right temperatures (avoid municipal mulch)

Proper Disposal - do not compost nursery debris into forest edges

Additional Information

Please visit our worm webpage

https://www.uvm.edu/~entlab/Forest%20IPM/Worms/InvasiveWorms.html

Worm ID Resources

The Crazy Snake Worm:
http://blog.uvm.edu/jgorres/amynthas/

Great Lakes Worm Watch:
http://www.nrri.umn.edu/worms/

Jumping Worm Info Brochure:
http://dnr.wi.gov/topic/forestmanagement/documents/pub/FR-550.pdf

Funding was received from the North American Maple Syrup Council, Chittenden County Sugarmakers Assoc., & Univ. of Vermont College of Agriculture & Life Sciences.