

Using biological and cultural control tactics for managing pests of sweet potatoes



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Wireworms: A pest of roots and root crops



PEST IDENTIFICATION

Adults (Click Beetles)

- Variable depending on species but most are shades of black and brown, sometimes marbled.
- About 1/2" – 1" long
- Make a "clicking" sound when joint between their head (pronotum) and thorax is articulated.

Larvae (Wireworms)

- Thin "wire-like" larvae with color varying from yellow to orange. Larvae exhibit a segmented external cuticle that is tougher than many other larval pests.

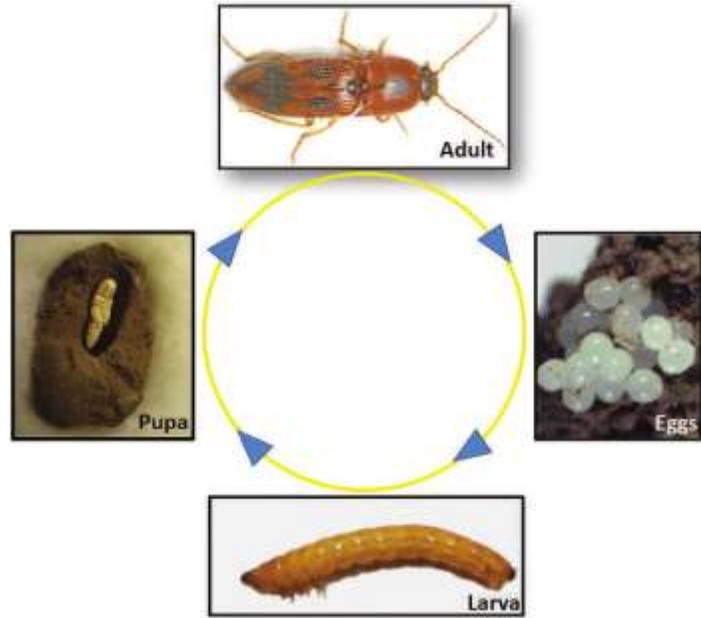
Pupae

- Cream-colored pupae found in the soil

Eggs

- Small white/translucent eggs

Pest Information



Primary life stage and location:

- **Adults** spend a significant time in the soil but emerge to mate and lay eggs
- **Eggs** are laid in the root zone of grass hosts
- **Larvae** feed on roots during the duration of their development (3-6 years)
- **Pupation** occurs in the soil

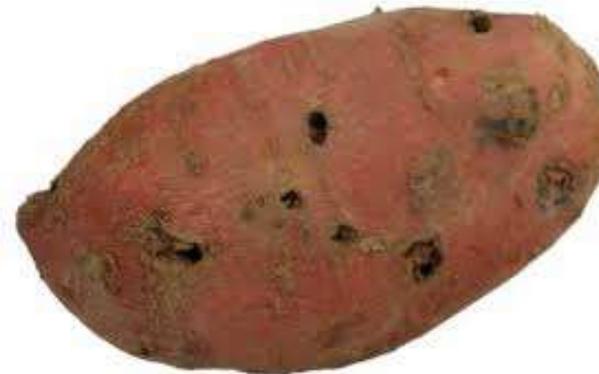
Damage/Susceptible hosts

Primary hosts:

- Feed upon a vast array of crops.
- Prefer grass-based crops including: wheat, rye, corn, oat, sod.
- Also feed readily on many root crops: potato, carrots, sweet potato, turnips, etc.



Wireworm feeding galleries in carrot



Wireworm feeding galleries in sweet potato



Wireworm feeding galleries in potato

Strategies for control

Organic Management Tactics

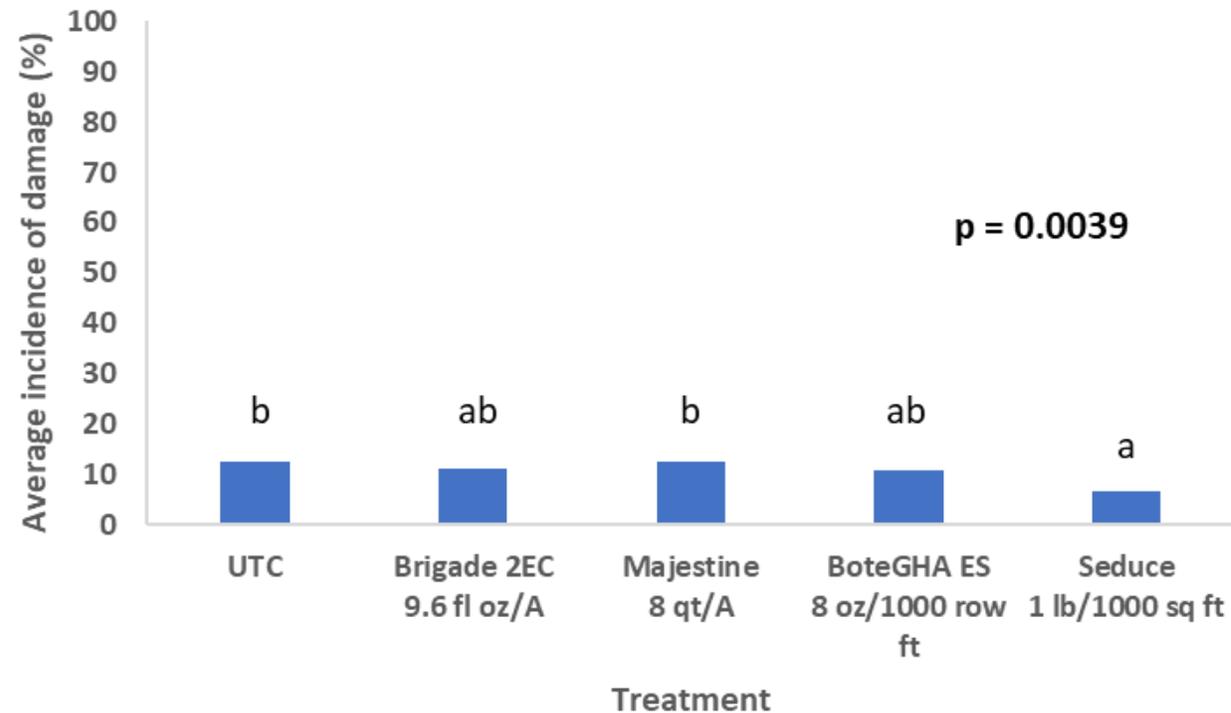
- Rotate out of sod for at least two years and minimize grasses
- Avoid known infested fields
- Soil drenches of pyrethrin insecticides have been shown to provide limited control

Strategies Being Tested

1. **High-Glucosinolate Mustards**
2. **Selecting less-preferred cover crops**
3. **Biopesticides**
 - *Entomopathogenic Fungi*
 - *Beauveria bassiana* - BoteGHA
 - *Metarhizium anisopliae*
 - *Soil Bacterium – Burkholderia*
 - *Insect Bait with Spinosad*
 - *Entomopathogenic nematodes*



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Questions?
Comments?
Thoughts?



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