Slugs and Snails: Know Your Enemy

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Slugs and Snails — What are they good for?
Natives and exotics
The banana slug is a native
Forest dweller
not a garden pest

Ariolimax columbianus

Robin Rosetta
Oregon State University
The colorful European Red Slug

Comes in many colors

Note red “skirt”

Arion rufus
A cannibal - Great Gray Garden Slug

Leopard spots - tiger stripes

Limax maximus
The bad guy - Gray Garden Slug

Smallest - very destructive

D. reticulatum
Interesting - shelled slug

Testacella haliotidea
More every day! Brown Garden Snail

Cornu aspersum
(formerly Cantareus aspersus, Helix aspersa, and Cryptomphalus aspersus)
Not to be mistaken for . . .

Brown Garden Snail
Cornu aspersum

Pacific Sideband
Monadenia fidelis

Photo: Robin Rosetta

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New ones keep coming

Ghost slug (Selenochlamys ysbryda)

Triboniophorus aff. graeffei,
Your Basic Slug

- Tentacles
- Mantle
- Skirt
- Foot
- Breathing hole

Photo: Rosetta
Your Basic Snail

Shell

Foot

Tentacles

Photo: Simon Wa cc-by-2.0
**A most destructive garden pest**

- **Eating**
  - Rasping "tongue"
  - What?
  - How much?
  - Efficient
Could be mistaken for . . .

Black vine weevil

Imported cabbageworm

Photo Credit: Johnny Stark

Photo credit Michael Masiuk
Understanding Slugs and Snails

- Moisture
- Temperature
- Night vs. day
- Light
- Territorial
- Strength
- Speed
Mating efficiency makes more!

- Primarily in fall
- Hermaphrodites
Egg laying on their terms

Slug Eggs

500 eggs per season!
What if all the eggs survived!!

- Lifespan
  - 6 to 18 months; usually
  - 500 eggs per season
Can We Prevent Attack?

Slug Resistant Plants?
Limit problems with plant choices

- Slugs avoid eating
  - Astilbe
  - Bleeding Hearts
  - Candytuft (evergreen)
  - Ferns
  - Foxglove
  - Hens and chicks
  - Impatiens
  - Ivy
  - Sedum
  - Solomon’s seal
  - Sweet woodruff
  - Wintergreen (teaberry)

- Slugs love to eat
  - Daffodils
  - Hosta
  - Lettuce
  - Lilies
  - Lobelia (perennial)
  - Narcissus
  - Primroses
  - Strawberries
  - Trillium
  - Tuberous begonias
  - Wild ginger
Do you know where they are?

• Location

• Location

• Location
Options for control

- Cultural and Physical
  - Timing of watering
  - Sanitation
  - Mulch or no mulch?
  - Tilling/hoeing
  - Hand Picking
An ounce of protection

- Barriers
  - Copper strips/netting/sprays
  - Lime, ashes, diatomaceous earth
- Solarization of beds
Another ounce of protection

- Predators
  - Encourage diversity
    - Toads, salamanders, newts
    - Snakes
    - Beetles, millipedes, marsh flies
    - Foxes, porcupines, raccoons
  - Frogs
  - Birds, ducks
Divert them from your plants

- Traps
  - Pit Traps
    - Purchased/homemade
  - Boards
  - Citrus/Melon
  - Pots
Give them an alternative

Baits
- Beer
- Yeast (brewer’s)
- Lettuce
- Corn Meal
- Bran
Now that you have them . . . . . .

... what do you do with them?
- Soapy water??
- Ammonia
- Vinegar
- Out in the trash
- Into the freezer
Have them go somewhere else

• Repellent products
  - plant extracts
    • Neem
    • Garlic
    • Peppermint
    • Rosemary
    • Cinnamon oil
  - copper
But you have to hit them

Botanicals
- Dazitol
  - Capsaicin and mustard oil
- All Natural
  - Plant extracts
Okay, you can poison them

- Commercial Baits
  - Metaldehyde
    - (Deadline, Ortho, Slug Fest, etc.)
  - Iron phosphate
    - (Whitney Farms, Sluggo, Escar-Go, etc.)
  - Sodium Ferric EDTA
    - (Corry’s, Dr. T’s Slug & Snail Killer)
Okay, you can poison them

- Commercial Baits
  - Placement
    - location, location, location
  - Timing
    - Fall, Spring, Summer, if irrigating
Using the correct amount

- As the label suggests
- Not in piles

For example, Sluggo
Poor control is not always your fault

• Bait thieves
The future

Anti-feedents extracts

carrot family, beet family
artemisia (mugwort), caraway
neem plants, cinnamon

Attractants improved
The future

- Killer nematodes
  - Phasmarhabditis hermaphrodita
  - Available in the UK
  - Found in the US

- Marsh fly
  - Sciomyzidae
On the edge . . .

- Slugbot
  - Artificial intelligence?
- Modified microwave
  - Heating
- Caffeine
  - Coffee is 0.1% - 0.4% (espresso, anyone?)
Slug and Snail Control Strategy

- Reduce - not eradicate
- Combine and customize methods
  - Fall is the most effective time
    - Prevent egg-laying
  - Throughout the season
    - Barriers, baits, traps
  - Till, when appropriate
  - Sanitation always
- Extra measures for favored plants
...keep on following that slime trail!

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Trying the non-synthetic way

- Repellent products
  - plant extracts
  - cinnamon oil
  - copper

- Botanicals
  - Dazitol
    - capsaicin and mustard oil
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Can they be stopped???

Prevention
Cultural controls
Physical controls
Biological controls
Chemical controls
Least toxic first
Modified microwave

John Moore, Australian researcher