



Photo: A. Derksen, FL Cooperative Agriculture Pest Survey Program

Snail Management

November 2011

Snails

- Snails can be found in many habitats
- In Florida there are numerous native and introduced species
- Most land snails are not pests
 - Feed on algae and fungi; few are predatory
- Snail ID is important before management



Giant African Land Snail

- Feeds on more than 500 different plants
- Human health hazard (transmits disease)
- Can be found on vegetables, flowers, and other ornamentals plants and weeds
- Also sometimes on concrete buildings or building materials



Snail Management

- Growers in south Florida (particularly Miami-Dade) should be on the outlook for the Giant African Land Snail
- Need to minimize the likelihood of an introduction into the nursery
 - Plant segregation and inspection
 - Establish a snail identification/education program for employees
 - Establish a snail monitoring program

Snail Info

- Active at night and on cloudy, rainy days
- Seek shaded, sheltered resting locations with high humidity
- Snails can be found just about anywhere
- During the dryer months, snails may seek irrigated areas
- When conditions are unfavorable, snails can become inactive and withdraw into their shell

Snail Management

- 1. Monitor**
- 2. Unfriendly snail environment**
- 3. Treatment**

1. Monitor

- At night, search for presence of the snails.
- During the day, search for snail trails and damage
- Pay particular attention to moist areas or very susceptible plants such as seedlings or more succulent plants.

1. Monitor (continued)

- Trapping - various types of traps or attractive items can be used to lure snails.
 - Banana and papaya are particularly attractive to the giant African land snail and can be used to catch them. Most traps only work for snails in the immediate vicinity.

1. Monitor (continued)

- While monitoring, handpicking snails will help. If done thoroughly and on a regular basis it can be an effective control method.
 - Gloves should always be worn when handling snails

2. Unfriendly Snail Environment

- Remove hiding places such as boards, stones, debris, weedy areas, leafy branches growing close to the ground, dense ground covers, etc.
- If possible, create a less humid environment (i.e. less irrigation; drip irrigation versus sprinkler)

2. Unfriendly Snail Environment (continued)

- Place copper foil or screening on benches or around areas for protection
- Dry, abrasive materials such as diatomaceous earth can also be used as a barrier, however, once wet it no longer works.
 - Only feasible if the material can be kept dry.

3. Treatment

- Iron Phosphate (Sluggo; Escar-Go; numerous over-the-counter products)
 - Product must be ingested; snails are sensitive to iron toxicity
 - Causes snails to stop feeding.
 - Safe for use around animals.

3. Treatment (continued)

- Metaldehyde baits (Deadline; Trails End; Slugfest; several over-the-counter products) - Probably most widely used and has been shown to be efficacious against many snail pests.
 - Toxic both by contact and ingestion
 - Breaks down rapidly in moisture and sunlight

3. Treatment (continued)

- Metaldehyde baits (continued)
 - Poisonous to pets and wildlife
 - Not restricted use; available in professional and over-the-counter products.
 - Different formulations (pellets, mini-pellets, coarse meal, and liquids); some formulations are combined with carbaryl).
 - Most effective under warm temperatures; low humidity.
 - Sometimes snails can recover after ingestion particularly if they can get to water or moist conditions

3. Treatment (continued)

- Methiocarb (Carbamate)
 - Sold as a spray and bait formulation (Mesurol 75WP, Mesurol Pro).
 - Sometimes used in combination with metaldehyde.
 - Less effective under cool, wet conditions.
 - Fast acting; stomach and contact poison
 - Restricted use pesticide.

Snail Test – Cuban Land Snail

Treatment	Cumulative Mean Dead Snails		
	2 DAT	5 DAT	7 DAT
Trails End 20 lb/ac	2.75 b	6.75 b	6.75 bc
Trails End 30 lb/ac	3.50 b	5.50 b	6.25 b
Deadline 30 lb/ac	4.25 b	7.00 b	7.50 c
Untreated control	0.00 a	0.25 a	0.50 a

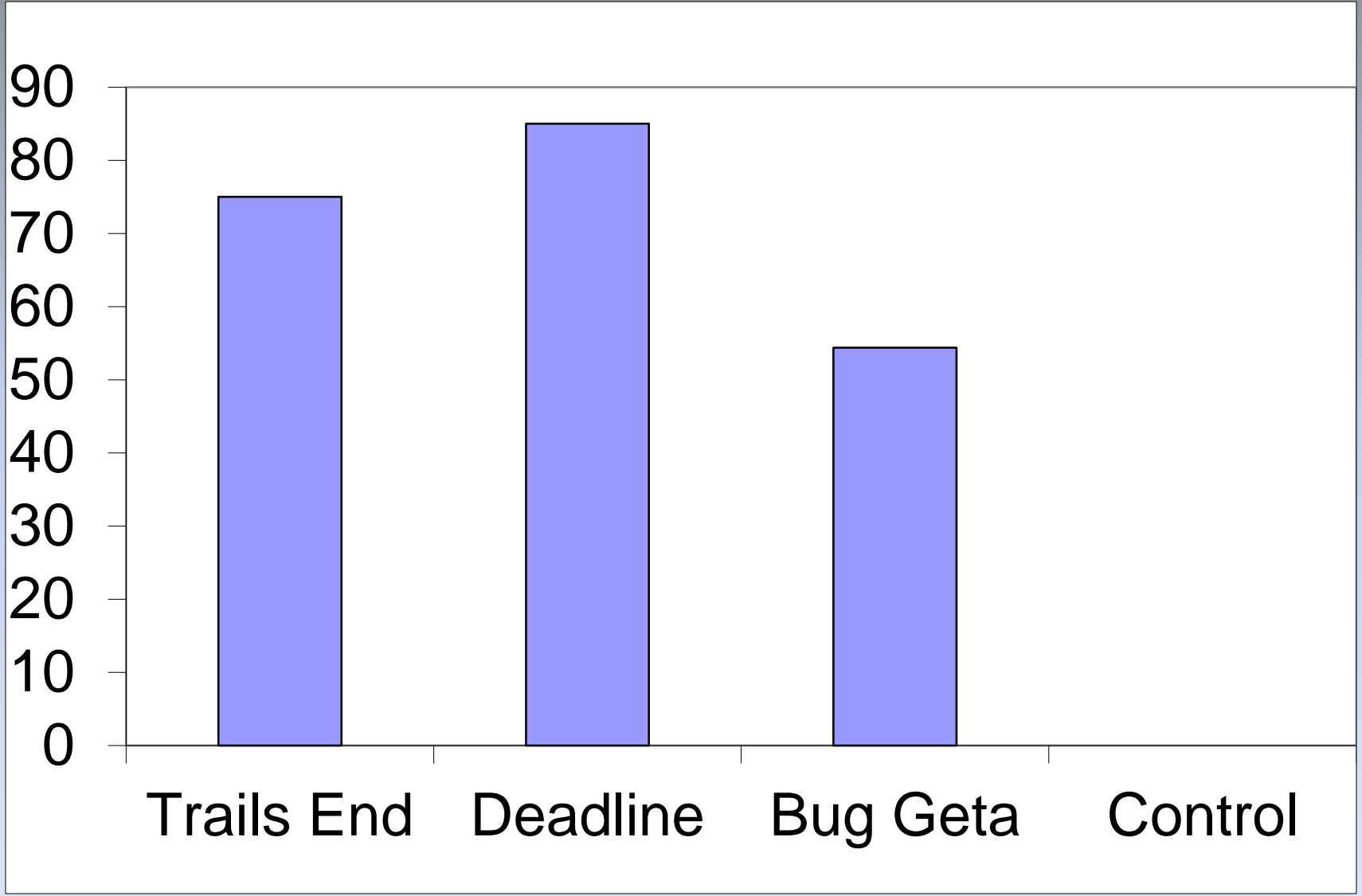
Snail Test – Cuban Land Snail

Cumulative Mean Dead

Treatment	3 DAT	5 DAT	7 DAT	11 DAT	14 DAT
Sluggo	4.5 ab	5.5 b	6.0 b	6.0 b	6.0 b
Deadline	8.0 a	9.0 a	9.3 a	9.3 a	9.3 a
Control	0.0 b	0.0 c	0.0 c	0.3 c	0.3 c
df	4, 15	4, 15	4, 15	4, 15	4, 15
F value	7.88	25.79	26.00	23.81	23.81
<i>P</i> value	0.0013	< 0.0001	< 0.0001	< 0.0001	< 0.0001

Snail Test – *Bradybaena similaris*

Percent Mortality after 10 Days



3. Treatment (continued)

- Borates – Baits containing boric acid.
 - Inhibit respiration.
 - No resistance to these products is likely to occur.
 - More effective against slugs than snails but may be effective against giant African land snail.
- Repellents
 - These products do not control the pest but help to keep them out of certain areas much the same as placing copper barriers.
 - Examples include garlic extract, cinnamon oil and Bordeaux mixture (copper sulfate and lime). Other products are being reviewed, but often these may not be feasible in a production environment.

3. Treatment (continued)

- Natural Enemies

- Numerous natural enemies that feed on snails which include ground beetles, pathogens, snakes, toads, turtles, and birds
- Most do not usually provide satisfactory control.
- There are no proven, commercially available natural enemies for snail control currently available in the U.S.
- In California, the use of a predatory snail was approved to use in citrus orchards for brown citrus snail.

Other Notes

- **NOTE:** When using baits, it is best to use after watering or irrigation, however, try to place the bait in drier areas. Do not water or irrigate after applying a bait.
- **NOTE:** Use of molluscicides should be in accordance with the label instructions. It is important that identification of the target snail is determined before application. Florida has many endangered and protected snails that could be harmed in improper use of pesticides.

Snail Management

- Approaching snail management in an integrated approach will likely be necessary
- In California, a successful snail management program for brown citrus snail included the release of a predatory snail, use of copper bands, pruning, applications of copper sulfate and iron phosphate, metaldehyde and a foliar application of phosmet which was allowed under a special exemption

Snail Management

- At this time, it is imperative to monitor for these snails as they are being found at numerous locations within Miami-Dade County and to manage any pest snail problems within your production area.

Catharine Mannion

Research and Extension Specialist

Ornamental Entomology

University of Florida, IFAS
Tropical Research and Education Center
18905 SW 280th Street
Homestead, FL 33031

305-246-7000
cmannion@ufl.edu
<http://trec.ifas.ufl.edu/mannion>

