Snail and Slug Control Technical Meeting

Nursery Issues

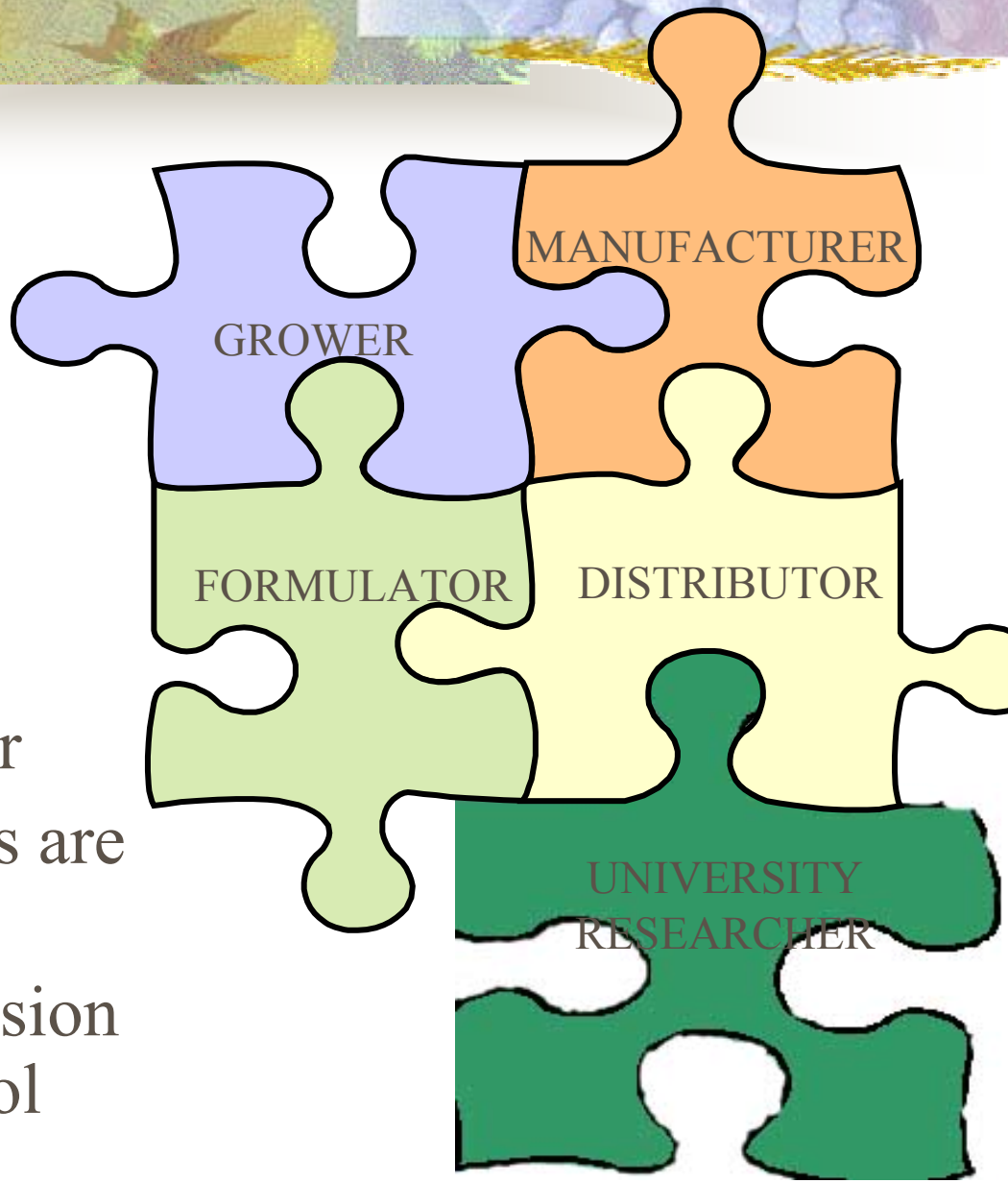
September 16, 2003

Background

- 2000 WFS asked me to compare rainfastness of Sluggo to Deadline
- 2000-2002 Conducted numerous trials
- Early 2003 Met with growers regarding problems in controlling snails
- Mid 2003 Contact by Lonza regarding facilitating a meeting

Purpose

- Get growers, manufacturers, distributors, formulators, and researchers together
- Learn why products are working or not
- Create some discussion about how to control snails and slugs



Snail Control Experiences in S. California

Cheryl Wilen

Area IPM Advisor

UC Statewide IPM Program and UCCE

Major Pest: brown garden snail (Helix aspersa)

Background

- Slugs and snails are hermaphrodites
  - all have the potential to lay eggs
- Up to six times/year, 80 eggs in soil
- Takes two years to mature

Activity

- Like cool, damp, and dark or shady environments
  - Usually feed at night or when cloudy or foggy
- During cold weather, snails hibernate in the topsoil
  - southern coastal locations, snails can be active throughout the year
- During hot, dry periods snails seal themselves off with a parchmentlike membrane and often attach themselves to tree trunks, fences, or walls (estivation).

Controls
What growers are using now

- 28 products registered
  - Metaldehyde
  - Metaldehyde+Carbaryl
  - Methiocarb (Mesurol)
  - Iron phosphate
- Decollate snails
- Rates from 1.5-7.5% metaldehyde
- Two liquid formulations
  - 25% Metaldehyde (EC)
  - 75% Methiocarb (WDG)

Issues

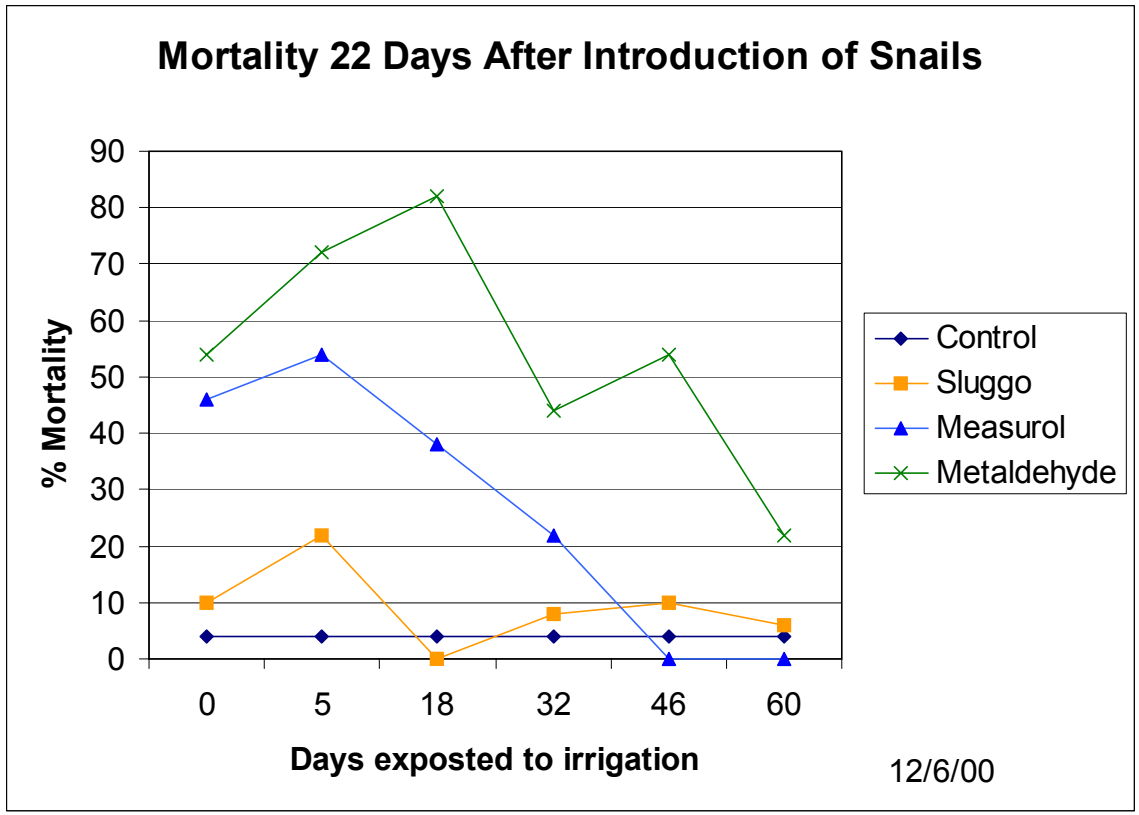
- Regulations
- Longevity/residual
- Application
- Scouting

Trials for Nurseries

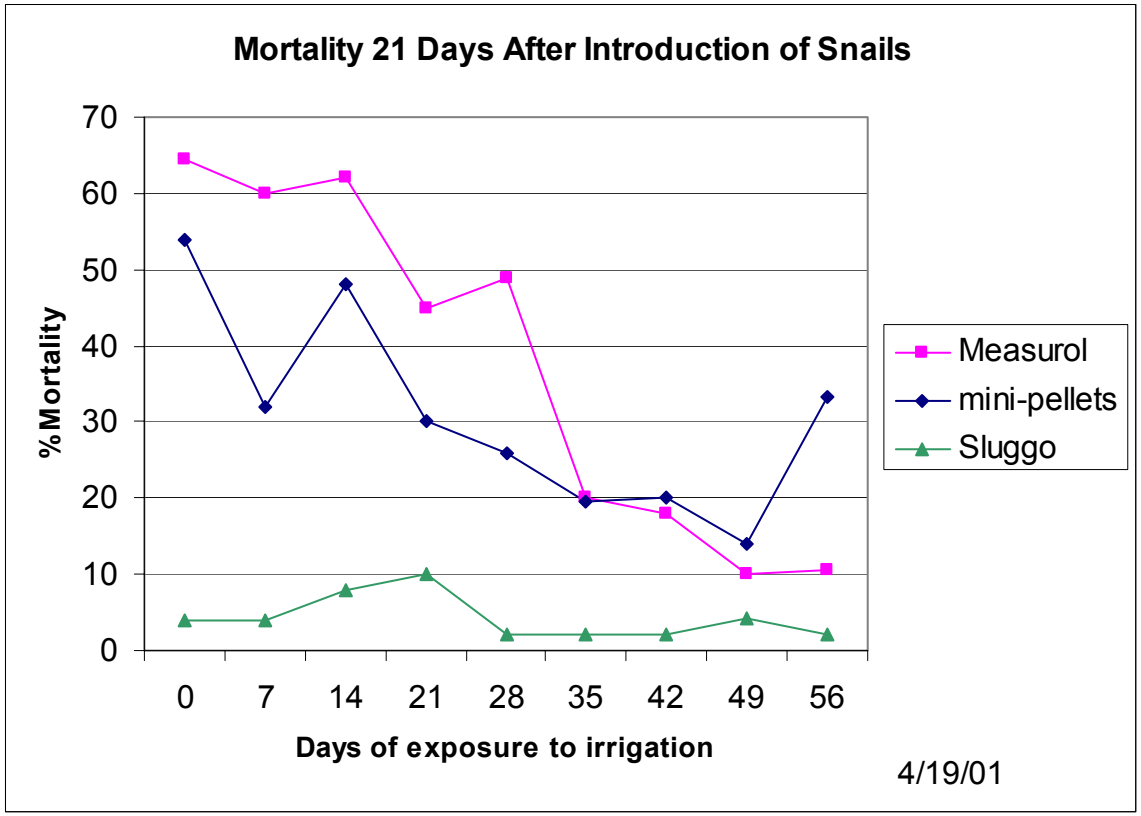
Trial 1

5 gal containers

Efficacy of molluscicides after daily exposure to irrigation

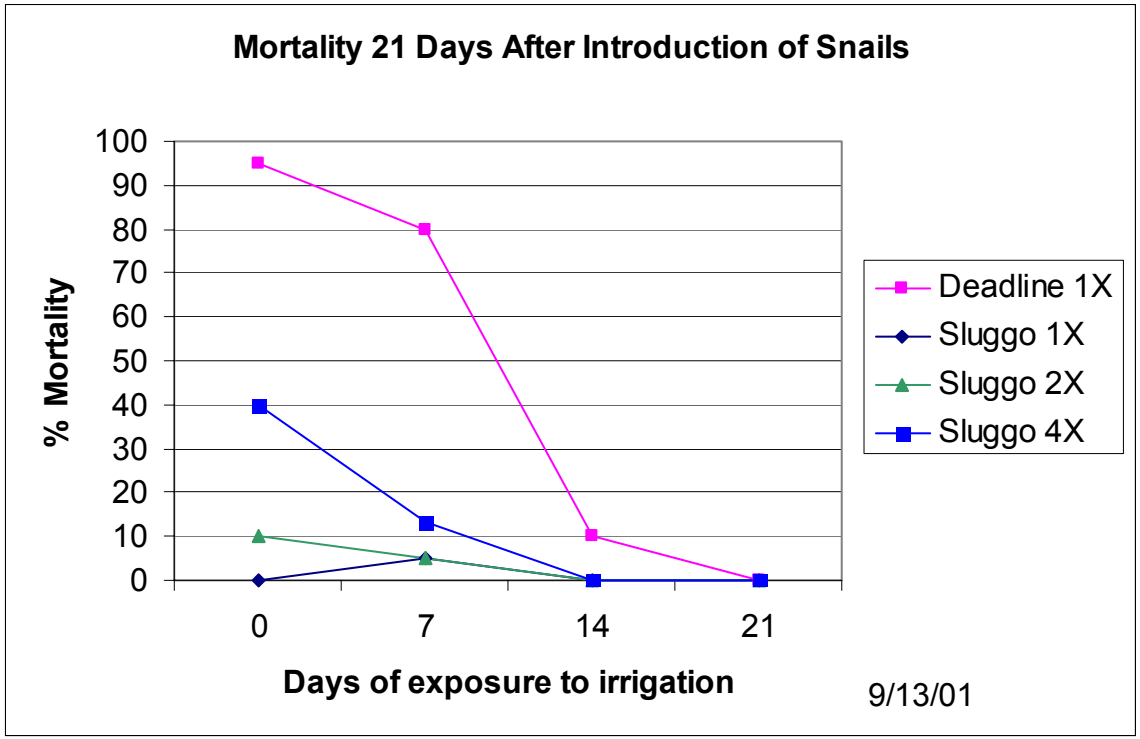


Trial 2

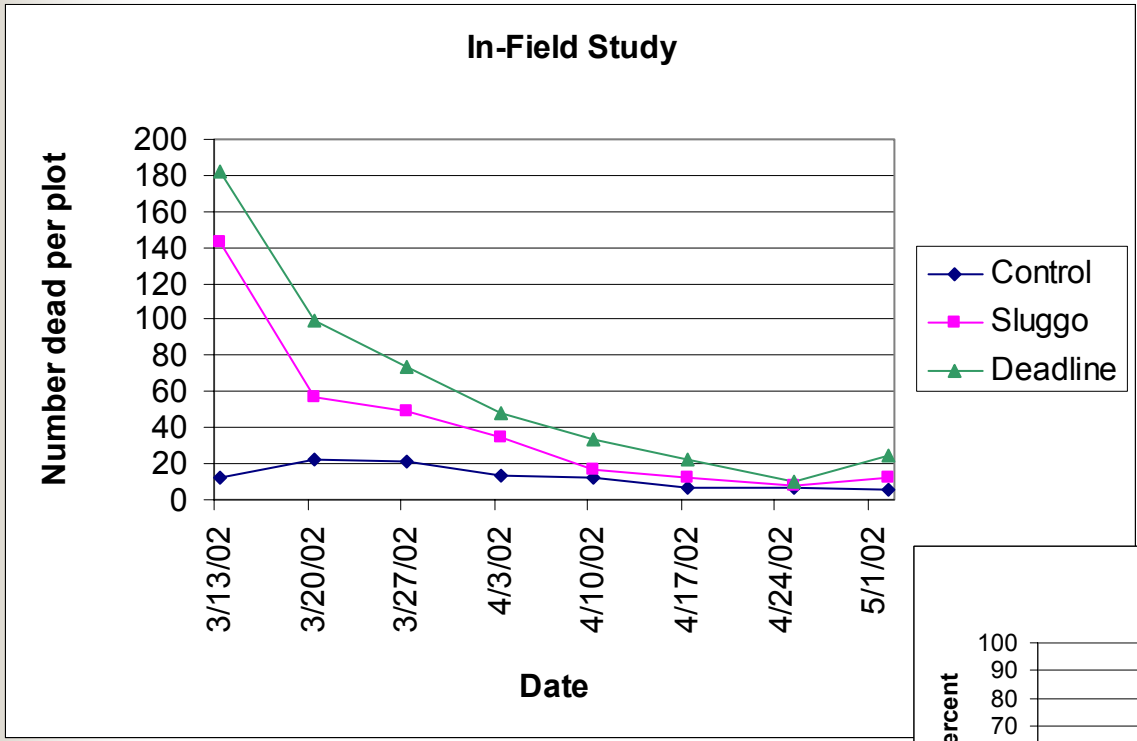

Mortality 21 Days After Introduction of Snails
% Mortality
70
60
50
40
30
20
10
0
0
7
14
21
28
35
42
49
56
Days of exposure to irrigation
Measurol
mini-pellets
Sluggo
4/19/01

Trial 3
Lath house

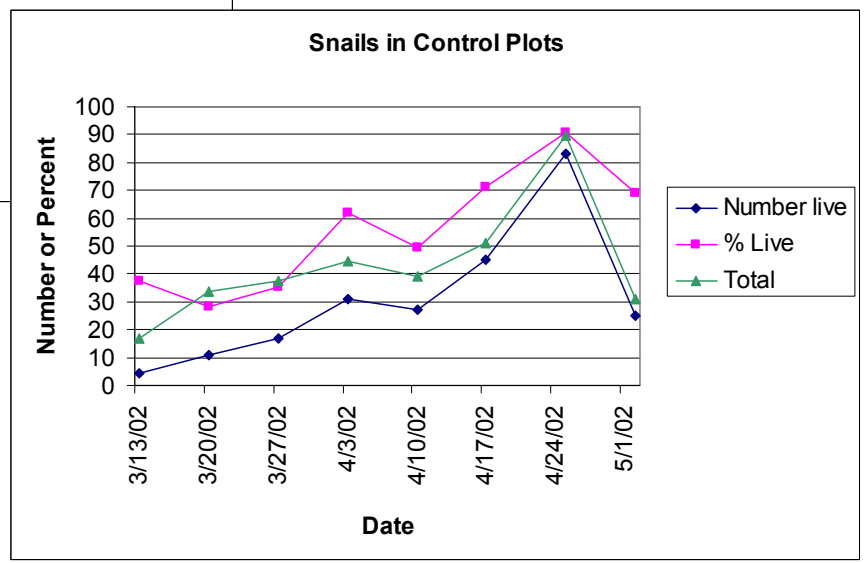
Efficacy of molluscicides after 3 times daily exposure to irrigation



Trial 4
Irrigated Citrus



- Snails not contained in arenas
- Only dead snails counted in treated plots
- Live and dead snails counted in control plots to see whether the overall population was increasing or decreasing
- Number of dead snails decreased each week in treated plots but not in control plots



Explanations: (1) loss of activity due to degradation from environmental causes (e.g. irrigation) or (2) **removal by being eaten by snails and therefore not available for consumption by snails moving into the plot subsequent to early periods of consumption.**

Rates, Timing, and Thresholds

Where snails can move into an area freely and the population is high:

Would it be better to apply a high rate of molluscicide (at least 1 pellet per snail) and follow with lower rates to kill the snails moving in?

OR

Would it be better to maintain a low rate of material but apply it more frequently?

Rainfastness is not the issue because a high population of snails will likely consume to bait before it is degraded by irrigation.