



# SLUGS & SNAILS

**A**mazing as it seems, the pest snails we try so hard to get rid of were originally imported from France for culinary purposes. Unfortunately, they escaped to become a major garden and agricultural problem. Snails and slugs are closely related. These two mollusks have soft, oblong bodies and produce quantities of slime to help them move around. Their most obvious difference is that snails have shells.

## Detection

Are your vegetable and flower seedlings being devoured overnight? Are you finding large, ragged holes in your prized ornamentals? Do you see slime trails across your walkways? If so, your garden is probably harboring snails and slugs.

Snails and slugs are active mostly at night and on dark, cloudy days. On sunny days they can be found in moist, shady spots. Look for their eggs in the soil (about an inch down) or under rocks, boards, or plant debris. The eggs are laid in masses of up to 100 and resemble small pearls. When you find eggs, crush them or scoop them into a plastic bag, seal it, and put the bag in the garbage.

## What You Can Do

Keeping snail and slug populations in check requires persistence. By using a combination of two or more of the following methods, you should be able to reduce the number of snails and slugs in your garden and keep their populations at acceptable levels.

### Hand-pick at Night

- To be effective, hand-picking snails and slugs must be thorough and it must be done regularly. Collect nightly until it's hard to find them, then check once a week.
- The best time for hand-picking is after 10 or 11 pm when they come out to feed. You can go out earlier, but you won't find as many.
- A flashlight and pair of gloves or tongs will make collecting these slimy creatures easier.
- Crush snails and slugs completely (otherwise they may re-cover and slide away), or drown them in a pail of soapy water (they survive in plain water). A few dead snail and slug bodies left on the soil surface will attract more snails and slugs and make your collecting easier, but large piles will breed flies. Burying crushed mollusks 3" or 4" underground will add nutrients to the soil and avoid fly problems.

### Use Barriers

- Before using barriers, hand-pick for a couple of nights. After barriers are in place, check for snails and slugs caught inside the barrier.
- Wrap a strip of copper foil around a tree trunk, flower pot, or the wooden sides of garden beds or fences. Snails and slugs are repelled by the unpleasant reaction between their bodies and the copper.
- Cover seedlings with small cages made from plastic or galvanized metal window screen. Push the cages into the soil so snails and slugs can't squeeze under.
- Cover rows of vegetables with special horticultural fabric (row cover) that lets in light and water but excludes snails and slugs and other pests.
- Use a coconut oil soap barrier to repel slugs and snails. Apply the material in a ring around individual plants.
- Snails and slugs may cross barriers such as diatomaceous earth, lime, sawdust, ashes, etc., especially when these barriers are wet. Lime, sawdust, and ashes can also be detrimental to your soil.

### Use Traps

- Snails and slugs can be trapped under upside-down flower pots, dark-colored plastic sheeting, and wooden boards. Place these traps around the garden and collect snails and slugs in early morning.
- Homemade or commercial pit traps that use beer or yeast mixtures to lure snails and slugs to a drowning death may help, but hand-picking will probably still be necessary.

### Encourage Natural Predators

Many common ground beetles kill snails and slugs. Most of these beetles are large (1" to 2"), black, tank-like creatures. They are found in the same moist habitats as their prey: under rocks, boards, leaves, etc. Avoid killing these allies.

### Use Iron Phosphate Bait

- Choose a bait product carefully. Baits containing methio-carb kill earthworms and beneficial insects.
- Baits containing iron phosphate are safer for children and pets than baits containing metaldehyde. Nevertheless, always keep this and all other pesticides out of the reach of children and pets.

- After eating iron phosphate, snails and slugs stop feeding and die within 3 to 6 days. They often crawl into secluded places, so you may not see dead bodies.
- Reapply iron phosphate baits every 2 weeks.

### Prevention

- Snails and slugs find large expanses of ivy, nasturtiums, or other succulent ground covers particularly attractive, and they love to hide in clumps of lilies, daffodils, agapanthus, or iris. If you can't remove the attractive plants, regularly search them for the pests.
- Plants with dry, hard leaves like rhododendrons, junipers, and bamboo are less attractive.
- Moisture makes an area much more inviting to snails and slugs. Avoid over watering and use drip emitters to deliver water only where it is needed. Water early in the day to allow the area to dry out before nightfall. It may be necessary to remove mulch from areas with severe problems.
- Remove any boards and flower pots that you aren't using as traps.

## Products

### Copper Barrier:

Surefire® Slug and Snail Copper Barrier Tape

### Coconut Oil Soap Barrier:

SlugStop®

### Horticultural Fabric (Row Cover):

Fast Start®, Seed Blanket

### Baits containing Iron Phosphate:

Sluggo®, Escar-Go®, Worry Free® Snail and Slug

*Note:* New products are constantly coming to the market. Brand names listed are for example only. No endorsement of specific products is intended nor is criticism implied of similar products that are not mentioned. Always use according to directions on product label.

## For More Information

If you have questions about the information in this fact sheet, contact the Marin County Department of Agriculture at 415-499-6700, or the Bio-Integral Resource Center, PO Box 7414, Berkeley, CA 94707; 510-524-2567.