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# Slime Trails and Leaf Damage: Effective Strategies for Managing Slugs in Poinsettia Production

*Slugs can cause significant damage to poinsettias grown in greenhouse environments, particularly when plants are placed at ground level, leading to unsightly slime trails and irregular feeding damage on leaves and bracts, which can reduce the overall quality and marketability of the crop.*

Slugs can become a significant pest in poinsettia production, especially in greenhouse environments where plants are grown at ground level (Fig. 1). The moist and humid conditions, combined with the dense canopy of poinsettias, create an ideal habitat for slugs to thrive. These pests are especially problematic during the fall and winter months as cooler temperatures and higher humidity levels favor slug activity. Slugs feed on the leaves and bracts of poinsettias, leaving behind unsightly damage that can reduce the marketability of the crop. If left unmanaged, slug infestations can lead to significant economic losses for growers.



Figure 1. Poinsettias grown at ground level on wet woven ground cover, creating an environment conducive to slug infestations. Photo by: W. Garrett Owen, OSU.

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Figure 2. Silvery slime trails on poinsettia bracts, translucent to white eggs clusters on the root ball, and slugs hiding beneath a poinsettia container and around the drainage holes. Photos by: W. Garrett Owen, OSU.

## Identification and Damage

Slugs are soft-bodied, slimy mollusks that are most active at night or during periods of high humidity. They hide during the day in dark, moist areas such as under containers, benches, or debris on the greenhouse floor. The signs and symptoms caused by slugs is often easy to identify (Fig. 2):

1. **Silvery slime trails:** These trails are left behind as slugs move across plant surfaces. These trails are a clear indicator of slug presence.
2. **Translucent eggs:** Inspect root balls for translucent to white egg clusters.
3. **Irregular holes:** Slugs feed by rasping plant tissue with their mouthparts, leaving irregularly shaped holes in leaves and bracts. This damage is often concentrated on young growth.
4. **Defoliation:** In severe infestations, slugs can consume large portions of leaves or even defoliate entire plants.

The combination of feeding damage and slime trails can significantly reduce the visual appeal of poinsettias, making them unsellable in retail markets. As such, greenhouse growers can deploy several strategies to mitigate infestations and control slugs.

## Integrated Pest Management Strategies

### Cultural Control

There are several cultural practices that can be implemented to modify the greenhouse environment to make it less favorable for slugs. These practices include:

1. **Sanitation:** Remove fallen leaves and debris to minimize hiding places for slugs (Fig. 3).
2. **Gravel:** If plants are grown at ground level on woven ground cover, then consider investing and installing gravel on top of the ground cover (Fig. 4). An alternative would be to overhaul the greenhouse and pour concrete. These suggestions may not be feasible due to infrastructure, production, and logistic limitations, therefore, consider other cultural control methods.
3. **Bench systems:** Elevate plants off the ground by installing temporary bench systems (Fig. 5) or investing in permanent benching systems thereby alleviating the likelihood of slug infestation and to improve air circulation and reduce moisture levels around plants.
4. **Irrigation:** Water early in the day to allow foliage and ground surfaces to dry and avoid excessive irrigation thereby mitigating standing water (Fig. 6).
5. **Substrate selection:** Consider using a well-draining soilless substrate.
6. **Barrier methods:** Apply copper tape around bench legs to create a deterrent.



Figure 3. Remove fallen leaves and debris from the greenhouse production environment to minimize hiding places for slugs. Photo by: W. Garrett Owen, OSU.



Figure 4. (A) Installation of gravel covering the ground cloth and (B) another greenhouse production environment with a gravel floor demonstrating an effective cultural control method to deter slug activity. Photos by: W. Garrett Owen, OSU.

## Physical Control

Physical control methods are labor-intensive but can be effective when used consistently alongside other management strategies. These practices include:

- 1. Trapping:** Place flat objects like wooden or asphalt shingles on the floor near affected plants to trap slugs (Fig. 7). Check traps daily and remove any slugs found.
- 2. Hand-picking:** Inspect plants and bottom of containers particularly around drainage holes during early morning or evening hours and manually remove visible slugs (Fig. 8).

## Chemical Control

When cultural and physical methods are insufficient, chemical control may be necessary. Growers should always follow the manufacture directions and label rates before using any chemical control product for slug control. Two common chemical approaches include baits and molluscicides:

- 1. Baits:** Slug baits are formulated with active ingredients that attract slugs, which then ingest the bait and die. Baits are typically applied around the base of plants or along pathways where slugs are active. Common active ingredients in slug baits include:
  - **Iron phosphate:** A safer option for use especially if pets are around the greenhouse. Iron phosphate disrupts a slug's digestive system, leading to death.
  - **Metalddehyde:** A more traditional molluscicide that causes dehydration in slugs; however, it is more toxic to non-target organisms like pets and wildlife.

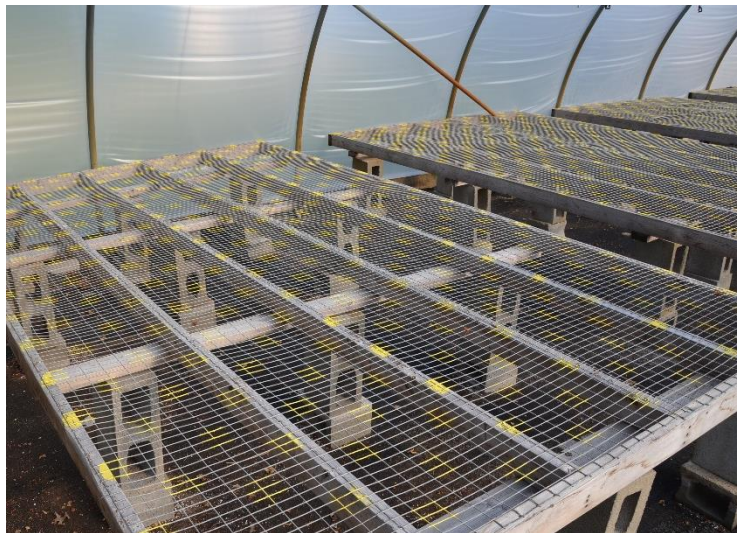


Figure 5. Temporary bench system elevating poinsettias off the ground, reducing slug access and improving air circulation. Photo by: W. Garrett Owen, OSU.



Figure 6. Implement proper irrigation practices by irrigating early in the day to allow foliage and ground surfaces to dry, helping to minimize conditions favorable for slugs. Photo by: W. Garrett Owen, OSU.



Figure 7. Wooden shingle placed on the greenhouse floor as a slug trap, showcasing a physical control method. Photo by: W. Garrett Owen, OSU.



Figure 8. Example of inspecting plants and bottom of containers around drainage holes to manually remove visible slugs.  
Photo by: W. Garrett Owen, OSU.

2. **Molluscicides:** These are chemical products specifically designed to kill slugs. They can be applied as granules or liquids. Molluscicides often contain:
  - Metaldehyde
  - Ferric sodium EDTA

### Best Practices for Slug Control During Poinsettia Production

Implementing best practices in poinsettia production is essential for maintaining plant health and reducing the risk of slug infestations. Growers can create an environment that is less conducive to slug activity, by focusing on:

1. **Cleanliness:** Regularly clean up fallen leaves and debris from the greenhouse growing environment to reduce potential slug habitats.
2. **Monitoring:** Inspect plants frequently, especially during periods of mild, damp weather when slug activity increases.
3. **Strategic baiting:** Place slug baits around the perimeter of greenhouse production areas to intercept slugs before they reach the plants.

By implementing these integrated pest management strategies, growers can effectively control slugs during poinsettia production. Regular monitoring combined with cultural, physical, and chemical methods will provide long-term results in managing these persistent pests.

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