

**Help...Hungry Hoppers Have Hit Hard**  
**Rick Abrahamson**  
**July 23, 2009**

Recently, several calls have come in concerning grasshoppers in the garden. Most hoppers overwinter as eggs in the soil and emerge in May and June to start feeding on new succulent plant growth. Several species can be found in South Dakota and their food habits vary. Vegetable crops favored include lettuce, carrots, beets, sweet corn, and onions. Hoppers typically stay away from squash, peas, and tomatoes.

In the fall adult hoppers produce “egg beds” in the soil of dry soils that have not been disturbed by tillage or irrigation. After hatching in the spring tiny nymphs emerge and start feeding. The first few days of life for the young hopper are critical as weather or absence of food can cause high mortality rates. Cold, wet weather is unfavorable for hopper survival. Those hoppers that survive go through five or six molting stages before reaching adulthood. Adult hoppers can live for several months feeding, mating, and egg laying.

Grasshoppers are very difficult to control due to their mobility. Control is best achieved when measures are taken while the nymphs are very small. Baits and sprays can be used to control hoppers. Carbaryl (Sevin), acephate (Orthene), permethrin, and diflubezuron (Dimilin) are all effective for hoppers. Residual insecticides are more effective than contact insecticides. Be sure to read the entire label prior to using any chemical. A band of insecticide around the perimeter of the garden is effective if there is concern about spraying produce with chemicals.

Organic methods of control include using floating row covers over your garden, *Nosema locusta*, a disease of grasshoppers sold as NOLO bait and Semaspore, and garlic oil as a repellent. Make the garlic oil spray by combining 3 ounces of minced garlic cloves with 1 ounce of mineral oil. Let soak for 24 hours or longer and strain. Next mix 1 teaspoon of fish emulsion with 16 ounces of water and add 1 tablespoon of castile soap. Slowly combine the fish emulsion water with the garlic oil. Kept in a sealed glass container this mixture will stay viable for several months. To use: Mix 2 tablespoons of garlic oil with 1 pint of water and spray.

As always if you have questions or comments about this article or any other horticultural topic you can call me at (605) 394-2188 or email me at [ricky.abrahamson@sdstate](mailto:ricky.abrahamson@sdstate). Drop me a line and let me know what you think.