



VEGETABLE PEST ADVISORY

USU Extension, Integrated Pest Management Program, June 3, 2022

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Advisory Key



Current status and risk of pest within Utah. This is based off site surveying, grower reports, and degree-day modeling.



Identifying characteristics of the pest along with their life cycle in Utah.



Identification of signs and symptoms caused by the arthropod pests or disease on host plants.



Monitoring, prevention, and control strategies using integrated pest management.

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INSECTS

Grasshoppers



Early nymph instars of various species are **emerging now** around many parts of the state.



Grasshoppers belong in the order Orthoptera and family Acrididae, and are most closely related to crickets and katydids. The acridid grasshoppers include some of the most injurious species in Orthoptera. Utah has three major groups of grasshoppers: the slant-faced grasshoppers, the band-winged grasshoppers, and the spur-throated grasshoppers. The slant-faces, as their name implies, generally have angled faces and long, thin bodies that enable them to blend into the grassy vegetation. The bandedwings are the conspicuous hoppers with often brightly colored hindwings that snap and crackle as they fly short distances. The banded-wings are especially common in open desert and scrub; they blend in well with their brown surroundings. The spur-throats include the most injurious species. Their name derives from the tubercle projecting between their front legs.



Grasshoppers have chewing mouthparts that tear away plant tissue. Grasshopper injury is most often associated with rangeland, corn, small grains, and vegetable crops. However, during heavy infestations almost any type of plant may be attacked, including trees, shrubs, ornamentals, flowers, and turfgrass. Grasshoppers are commonly thought of as foliage feeders, but will also feed on flowers, fruits, seed heads, stems, and essentially all above ground plant parts. Often fence rows and roadsides adjacent to crops serve as the major sources of grasshoppers; as the vegetation dries up in such areas, grasshoppers that hatched and matured there move into adjacent crops.



Early instar grasshopper nymph



Adult grasshopper feeding on brassica foliage



Vegetable farmers or home gardeners, inundated with grasshoppers, are likely to have only temporary success when acting alone to reduce grasshopper populations. Unless treating a local "hot spot" before the grasshopper infestation has spread over large areas, grasshoppers will continually migrate to new foliage

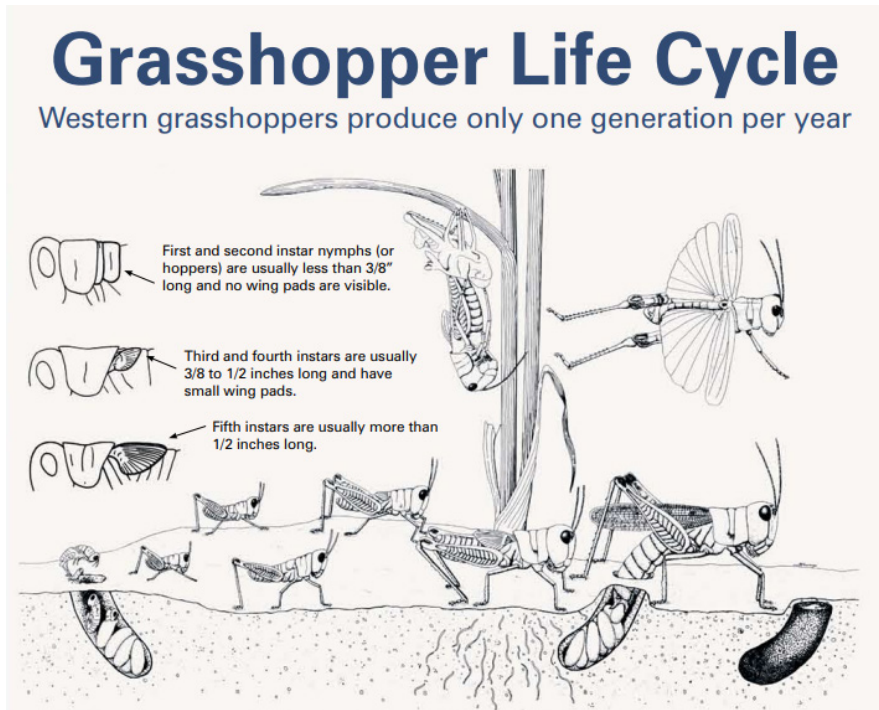
Chemical Control

- Given the great mobility of grasshoppers, area-wide treatments may only reduce populations that year. Ranchers are encouraged to scout for grasshopper "hot spots," that is, local areas in which grasshoppers concentrate egg-laying and outbreaks first occur. All too often, huge populations of grasshoppers grow and spread before control measures are taken, thus greatly increasing both the costs and difficulties of control attempts.
- Malathion and carbaryl are relatively non-toxic to humans, and may be sprayed to kill grasshoppers along roadsides and fence rows by following label directions. Other products registered for grasshopper control in Utah include acephate, beta-cyfluthrin, bifenthrin, chlorpyrifos, dimethoate, and lambda-cyhalothrin. These sprays will be most effective when used against nymphs rather than against adults.

Biological Control

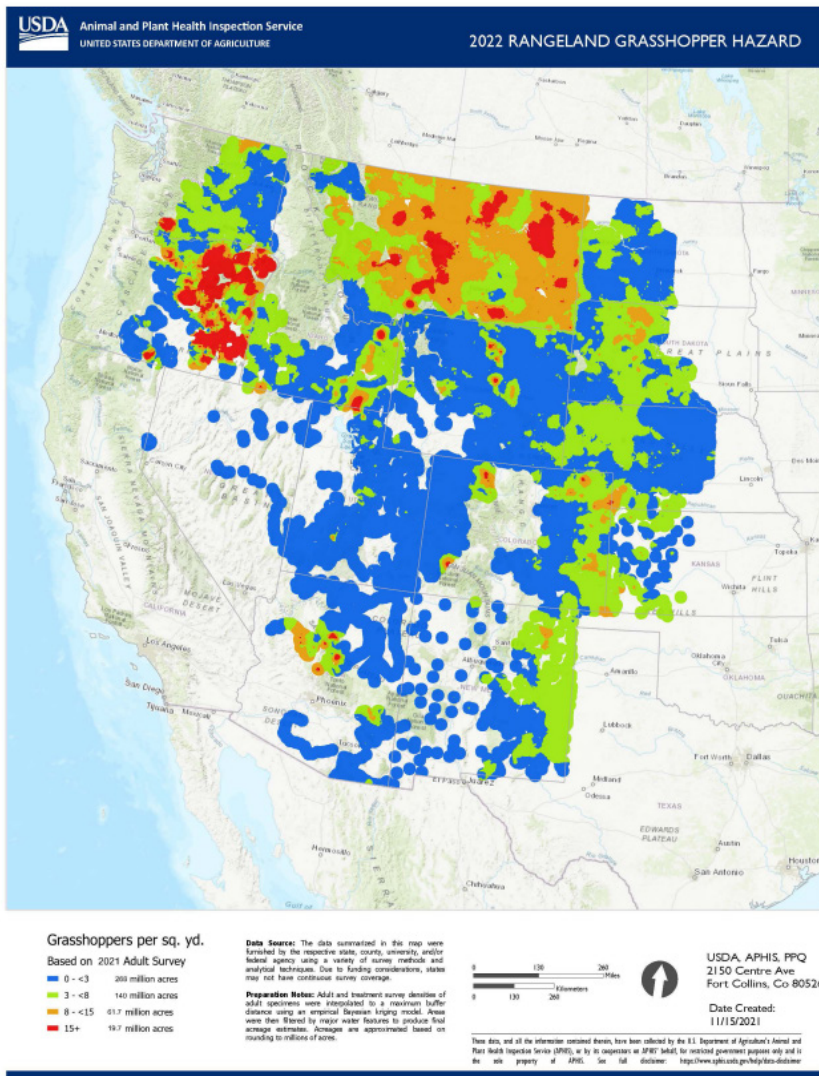
- Several reduced risk products for grasshopper control are also available in Utah. *Nosema locustae*, sold as Nolo Bait, is a microsporidian protozoa that infects grasshoppers through baiting. Under ideal conditions coinciding with peak nymphal emergence, *N. locustae* will kill 50-70% of the population and 35-50% of the surviving grasshoppers will be infected. Infected grasshoppers are weakened, feed less, and produce fewer eggs.
- Natural predators can also contribute to grasshopper population control. This can include birds, mammals, reptiles, and sometimes other arthropod pests.

*The content for this advisory was pulled from the USU Extension Grasshoppers fact sheet written by **Dr. Ted Evens** and **Dr. Erin Hodgson**



*This graphic and text was pulled from the 'Pest Grasshoppers of the West' poster designed and written by **Alexandre Latchinsky** and **Scott Schell** from the University of Wyoming CES/AAAI.

1. Hatching usually occurs mid-May to late June. A few species hatch in the summer and overwinter as nymphs.
2. Grasshoppers have to shed their hard exoskeleton to grow bigger through each nymphal phase (instar) to adulthood. They often hang upside down on grass stems to molt. It takes five to seven days to complete an instar.
3. Most species have five nymphal instars.
4. The last molt results in an adult with functional wings that allow low, evasive flights. Some species have very short wings as adults.
5. Only mature adults can reproduce, so egg laying is prevented if nymphs are treated. Adult females require up to 2 weeks to reach reproductive maturity, after which they produce 20 to 100 eggs in several clusters or pods deposited in the soil.
6. Eggs are resistant to cold and desiccation, but they are vulnerable to parasites (tiny wasps, flies, and blister beetles). Birds and other predators feed on nymphs and adults and also help keep grasshopper densities in check.



2022 Grasshopper Outlook Prediction Model from USDA-APHIS

[Click Here to View Full Map](#)

Integrated Pest Management Tip

Place yellow sticky traps in your garden or farm to monitor for various pests over a long period of time. Yellow sticky cards can be purchased online or local garden supply stores.



Additional References and Resources

- Grasshopper Research and Management (USDA)
- Grasshoppers (Utah State University Extension)
- Community-Wide Grasshopper Control (Utah State University Extension)
- Pest Grasshoppers of the West (University of Wyoming)

Precautionary Statement: Utah State University Extension and its employees are not responsible for the use, misuse, or damage caused by application or misapplication of products or information mentioned in this document. All pesticides are labeled with ingredients, instructions, and risks. The pesticide applicator is legally responsible for proper use. USU makes no endorsement of the products listed herein.