

# Fighting Grasshoppers and Mormon Crickets for nearly 100 Years

Utah State University Extension coordinates control efforts across state, local, private and federal boundaries to help mitigate the impact. Extension disseminates control information through community meetings and the media and acts as a referral center for bait, pesticides and application equipment.

“To date nothing has been tried that these insects, nearly as large as grown mice, will not eat.”  
1934 – A. Kilburn, County Agent

In 2002 Matt Palmer, Utah State Extension Agent in Tooele County - one of the worst hit - was instrumental in working with private landowners, UDAF and USDA-APHIS to organize a control program to minimize the damage on more than 50,000 acres of crops and rangeland. This saved an estimated \$12,000 worth of alfalfa and \$3,500 worth of range forage on just one ranch in Skull Valley.

Year	Acres Infested
1997	1,180
1998	509,800
1999	758,000
2000	658,500
2001	1,894,500
2002	2,450,650

Mormon Crickets increase during drought years according USDA –APHIS survey.



In 2002 Extension agent Michael Pace took a proactive approach and organized meetings with representatives from UDAF, the US Forest Services, Bureau of Land Management, Farm Services Agency, County Commissioners and private suppliers. About 140 people showed up for the meeting in early March. He also worked with Millard County Commissioners to purchase and take orders for more than 11 tons of bait.

Grasshoppers are a threat to crops and rangeland across the West, but Utah always has had a special historical relationship with Mormon Crickets. *Anabrus simplex* has been known as a Mormon Cricket since 1848 when hordes of the insect started eating the early Mormon settlers’ much-needed crops. When settlers prayed for help, an equal horde of seagulls descended and ate enough of the crickets to save the crops and possibly the lives of the pioneers. Ever since, the California gull has been Utah’s state bird and the ravenous cricket has taken on a religious nickname.

Utah State University Extension acts as a coordinator and intermediary working with agencies such as the Bureau of Land Management, tribal councils, the National Forest Service, county commissioners, private landowners and USDA-APHIS.

## RISK AREAS AND CONTROL METHODS

### Rangeland

Utah has millions of acres of rangeland that are prime habitat for many species of grasshoppers. Left unchecked, grasshoppers may destroy rangeland and compete with livestock and wildlife for food. Ranchers and land managers need to first determine if there really is an infestation. The definition of an infestation, though this is not an exact science, is “eight or more grasshoppers per square yard” (your County Extension Agent can help determine the grasshopper count). If there is an infestation, a control plan needs to be devised. The best and most economical way to control infestations on rangeland is aerial spraying. Some years there are government cost share programs to help spray large acres of rangeland. Usually, the land needs to border adjacent to federal or state lands to qualify for government aid. The insecticides most commonly used on rangelands are Malathion ULV and Dimilin. Dimilin spray is proving to be the least expensive and environmentally safe alternative. It is important that spraying takes place early in the grasshoppers’ lives. The younger the grasshoppers and Mormon Crickets are the higher the kill rate. The best time to spray rangeland is usually during the first three stages of the insects’ lives.





## **Cropland**

Grasshoppers and Mormon Crickets can be devastating to Utah's most profitable crops -- alfalfa, corn, oats, wheat, rye and barley. Farmers should first determine if there is an infestation of eight or more grasshoppers per square yard. If there is, the most effective control methods are baiting for Mormon Crickets and ground spraying or aerial spraying for grasshoppers and Mormon Crickets when they occur in large numbers. Ground spraying is usually more expensive per acre, but there is less chance of killing non-target insects such as bees or other beneficial insects. Aerial spraying is quick, usually less expensive, and has a high kill rate. Usually, aerial spray applications are used when there are more acres to be sprayed. Justification for chemical control depends on the type of crop, stage of growth, additional migration and the type of damage being done to the crop. The insects, of course, do not respect farm boundaries. They hatch and migrate off bordering lands, and at times this is extremely frustrating to a grower trying to control an infestation. This is where communities pulling together to do a county-wide spray program comes into play. Also, the importance of government spraying of public lands bordering cropland cannot be stressed enough.

## **Lawns, Gardens, and Landscaping**

Many Utah valleys are experiencing rapid population growth. Homes are being built on land where grasshoppers and Mormon Crickets have been hatching and laying eggs for decades. The insects also migrate out of vacant fields and low hills into lawns and gardens. This results in thousands of dollars in damage to newly planted landscapes. Communities need to work together to control grasshopper and Mormon Cricket outbreaks. If one person is spraying and neighbors are not, the insects will just continue migrating from adjacent property. Vacant lots and fields need to be tilled in late fall to expose the eggs which are destroyed when exposed to the cold. Lawns also can be raked to expose the eggs. Flower gardens should be turned over to expose the eggs during the winter. If there is an outbreak of the insects on your landscape during the summer, start spraying early. Once you see that grasshoppers and/or Mormon Crickets have invaded, even small ones, start spraying with Malathion or liquid Sevin (carbaryl) on turf, ornamentals and vegetables. Read and follow application instructions carefully. Over application can be dangerous to you and your neighbors.

## **ASSESSING THE IMPACT**

The Extension team of Mark Nelson, Matt Palmer, Michael Pace, Jeff Banks and Jay Karren received a grant to study the Economic Impact of Mormon Crickets on Agronomic Crops and Rangeland in Western Utah. The goals are:

1. To determine the economic impact that Mormon Crickets have on alfalfa, small grains and rangeland vegetation in Beaver, Millard, Juab and Tooele Counties.
2. To develop a fact sheet outlining the economic damage caused by Mormon Crickets on the study crops.
3. To educate farmers, Extension agents and other interested agencies on the importance of looking at anticipated damage and costs when deciding what control measures to take or recommend.

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