

## Got Grasshoppers? Get After Them NOW

With several zip bags worth of grasshoppers coming in to the office recently, I felt like this information from state Extension Entomologist, Tom Royer, might be timely.

Grasshoppers are in an upward cycle for causing problems in Oklahoma. We have endured 3 years of severe drought which has let them increase in numbers. Grasshoppers have been hatching for several weeks now, and are about ¼ inches in size. Even though they are small and don't seem to be causing much damage, now is the best time to control them because when they get big, they are difficult to control and will cause severe damage.

Scouting for grasshoppers takes some practice, but here is the way to get an estimate of populations. Go out and start by getting a "practiced eye" for looking at a 1/square yard area. Look at least 10 feet in front of you and begin walking to that square yard spot. Count the number of grasshoppers that jump out of the spot (don't count ones that jump in). Take several counts in your pasture to get an average number of grasshoppers per square yard.

Grasshopper control in rangeland is probably never justified until numbers exceed 12 per square yard. We suggest that a threshold of 24 or more SMALL grasshoppers (less than ½ inches long) per square yard is a starting point for deciding whether to spray or not. The threshold for larger grasshoppers (greater than ½ inch long) is from 12-40 per square yard. Sprays are most effective if timely and practiced over large areas. The best time to control them is from mid-May through about July 1, while they are wingless. Once grasshoppers sprout wings, they can fly for miles in search of food. There are three options that a producer might consider:

**Spot Treatments in Hatching Areas or Border Sprays:** Grasshopper eggs are often deposited in concentrated egg-laying sites, in pastures, ditches and untilled field margins. Grasshopper nymphs tend to remain in their hatching areas for some time after they emerge. So, spot applications of an approved insecticide in those areas can effectively reduce grasshopper numbers.

**RAAT Treatments with Diflubenzuron:** Diflubenzuron (Dimilin) was registered for use in rangeland and pastures to control grasshoppers. It disrupts the molting process of grasshoppers and must be ingested to be effective. Because of its specific activity on the invertebrate molting process, it is very non-toxic to vertebrate wildlife but should not be applied to ponds or streams. It must be ingested to be effective, so it has minimal impact on beneficial or non-target insects. Finally, it is inexpensive compared to other registered products.

Dimilin can be used in an IPM approach called a Reduced Agent and Area Treatment (RAAT). With this strategy, the rate of the chemical is lowered, and applied in alternating treated and untreated strips. It takes advantage of the grasshopper's natural tendency to move as they feed. As they move from untreated to treated areas and eat foliage treated with diflubenzuron, they are killed when they try to molt. An additional benefit of a RAAT application is that it covers less pasture with a pesticide application, thus reducing the impact of the spray on beneficial and non-target organisms. RAAT applications can be made with an aerial or ground application, but diflubenzuron is the only insecticide that specifically allows a RAAT application. A RAAT treatment can reduce application costs by 50-60% and 65-70% less insecticide is applied compared to conventional broadcast treatments. Please feel free to stop by or contact me if I can be of assistance.

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