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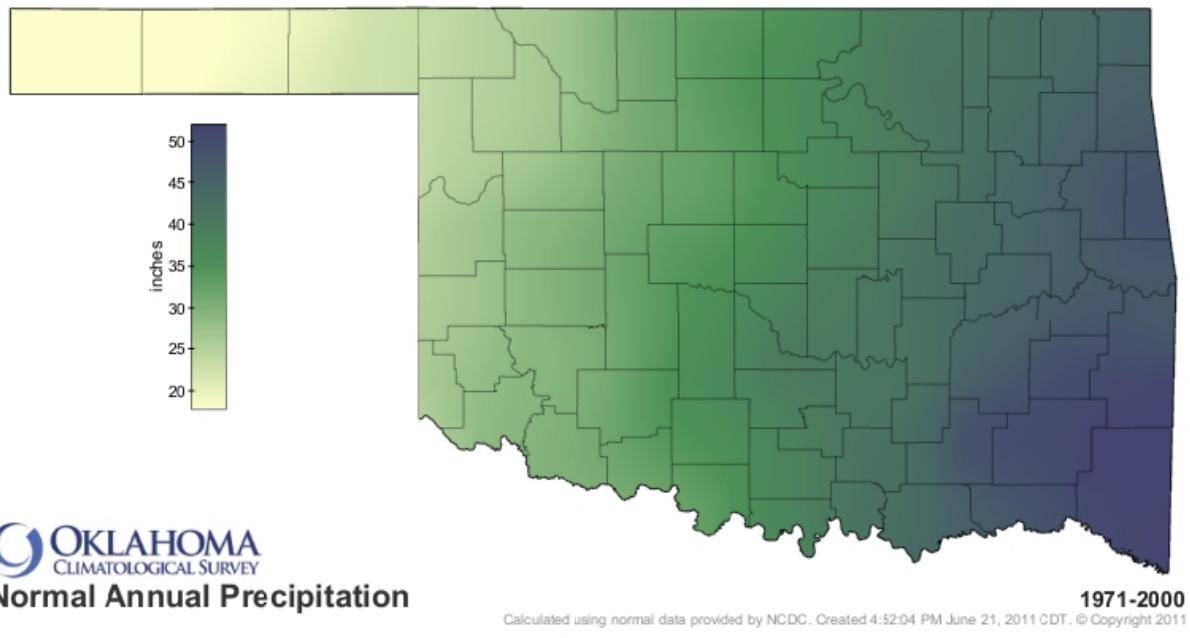
Grasshopper Management in Rangeland, Pastures and Crops

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Grasshoppers are emerging in some eastern Oklahoma pastures. I saw levels reaching 30-45 per square yard two weeks ago. We typically see grasshoppers become a threat in areas that receive less than 30 inches of annual rainfall, which includes the Panhandle and western quarter of Oklahoma. However, last year, Oklahoma underwent a severe drought and the timing of rainfall was not favorable for killing eggs and nymphs in many areas.





Grasshopper control in rangeland is probably never justified until numbers exceed 12 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, such as 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: Two recent developments offer an economical and environmentally responsible way to manage grasshoppers in rangeland or pasture. The first development occurred when diflubenzuron (Dimilin) was registered for use in rangeland and pastures to control grasshoppers. Diflubenzuron has several appealing qualities from a human and environmental safety standpoint. 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.

The second development is 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 does not cover the whole landscape 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.

Broadcast Applications: A producer can apply a registered insecticide as a spray or bait to control grasshoppers. However, broadcast applications should be economically justified beforehand. It may be justified in improved pasture where hay will be harvested as a cash crop, but for grazing purposes, a producer should consider the cost of supplying hay versus spraying before making such a decision to treat.

Grasshoppers can seriously damage row crops and alfalfa as well. For more information, check out EPP-7196, "[Grasshopper Management in Rangeland, Pastures, and Crops](#)" and EPP-7193 "[Management of Insect Pests in Rangeland and Pasture](#)"

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