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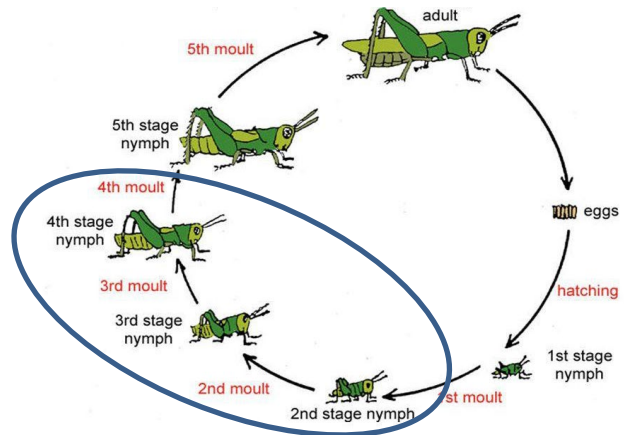
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Got Grasshoppers? I have Some Suggestions for Their Management in Rangeland and Pastures.

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Grasshoppers seem to be in an upward cycle for causing problems in Oklahoma over the past few years. They are always a difficult problem to deal with, but it is better to deal with them NOW, when they are in the second through fourth instar (see circled drawing above) vs. later, when they become nearly impossible to control. After July 4, they will be fully, or nearly fully grown, they will eat a lot, and they can fly long distances to find food. So.... this article can serve as a review of what you, as a grower, can do RIGHT NOW.

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:

1. Spot Treatments in Hatching Areas or Border Sprays: Grasshopper eggs are often deposited in concentrated egg-laying sites, pastures, ditches and untilled field margins. Grasshopper nymphs tend to remain in their hatching areas for some time after they emerge. So, spot applications with an approved insecticide in those areas can effectively reduce grasshopper numbers.
2. 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. Because Dimilin must be ingested to be effective, it has minimal impact on beneficial or non-target insects that don't consume foliage. 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 graze. 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, which reduces 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.

I have received questions about using the active ingredient in Coragen or Prevathon (chlorantraniliprole) as a RAAT treatment. We have some research data that shows that this active ingredient is very effective at controlling grasshoppers, but had little impact on grasshopper numbers in the untreated areas when applied as a strip application. Because this product works much more quickly, so we believe it kills grasshoppers before they moved into the untreated areas. The good news is that it is a bit less dependent on timing for the proper growth stage of grasshoppers compared to Dimilin. However; it is much more expensive to apply. Coregen/Prevathon is NOT LABELED for RAAT applications, only for foliar applications. In Oklahoma, you are not allowed to apply any pesticide in a manner not listed on the label, such as applying a lower than labeled rate.

3. Broadcast Applications: A producer can apply a registered insecticide as a spray or bait to control grasshoppers. One other question that I have received is regarding the use of *Nosema locusta* (Nolo Bait, Semaspore) for control. Again, it is most effective when applied to immature grasshoppers are small (about ½ inches).

Control may be justified in improved pasture where hay will be harvested as a cash crop, but for grazing purposes, CAREFULLY consider the cost of supplying hay versus spraying before making such a decision to treat.

Rates and additional information about all insecticides registered are listed in EPP-7193 [“Management of Insect Pests in Rangeland and Pasture”](#)

For more information on grasshopper control in general, check out EPP-7196, [“Grasshopper Management in Rangeland, Pastures, and Crops”](#).

For Homeowners check out EPP 7322 [“Grasshopper Control in Gardens and Landscapes”](#)

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The pesticide information presented in this publication was current with federal and state regulations at the time of printing. The user is responsible for determining that the intended use is consistent with the label of the product being used. Use pesticides safely. Read and follow label directions. The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied.

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