

P.O. Box 278  
Emory, TX 75440  
(903)-473-5057

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To: Rains County Leader

From: Stephen Gowin  
CEA-Ag, Rains County

Re: News Article

I have received several calls on grasshoppers over the past ten days (mainly from the Point area) and have determined that they are back in fairly large numbers again this year. So you might want to start getting prepared to protect your pastures and hay meadows, lawns, shrubs and gardens. Thus far we have seen quite a few grasshoppers, but they are still fairly small. At this stage of their lives they are pretty easy to control. Get your sprayers calibrated and prepared for a busy season.

Grasshoppers are occasional pests of ornamental landscapes. The differential grasshopper and four other species (red-legged, migratory, two-striped, and Packard grasshoppers) cause most of the damage seen by homeowners and hay producers in Texas. Because grasshoppers require relatively large breeding grounds in which to build large populations, most severe outbreaks occur near farmland and other less disturbed areas, such as in rural communities, farmsteads, and urban fringe areas. Although grasshopper damage is difficult to completely prevent during outbreak years, homeowners can minimize their impact through the use of barriers, insecticides and landscape plants that are less prone to damage.

Grasshopper eggs are generally laid during the fall and late summer in rural, non-crop landscapes. They may also be laid in crop areas after harvest, within weedy fields, and in forage areas and pastureland. Eggs usually hatch the following spring, in late-May to June. The development of grasshopper nymphs to the adult stage requires 40 to 60 days or more.

Adult forms of the differential grasshopper usually appear in mid-June. The adult grasshopper is the most voracious feeder, and is able to disperse over large areas due to its strong wings. The adult grasshopper is the most likely stage to invade and damage ornamental landscapes.

Because residents of urban communities generally have little control over the surrounding countryside, management options for grasshoppers in urban landscapes are limited. Homeowners can protect valuable plants, to some extent, through the use of residual insecticides. Also, landscape plants that are less attractive to grasshoppers can be used.

Recent tests have shown that insecticides containing bifenthrin (found in some Ortho® Home Defense products) and lambda-cyhalothrin (Scimitar®) provide the fastest knockdown and longest residual control. Products containing permethrin (some Spectracide® products), cyfluthrin (Bayer® Advanced Lawn and Garden products, Tempo®), and esfenvalerate (Ortho® Bug-B-Gone) should also provide good control. Insecticides containing chlorpyrifos, diazinon and carbaryl will provide control of shorter duration.

Below are some of the recent questions that I have received or that I know I will receive before the season is over.

### **What insecticides can be used on pastures and hayfields?**

Always read and follow all label instructions on pesticide use and restrictions. Information below is provided for educational purposes only. Read current label before use.

**Prevathon.** 5% rynaxypyr. Prevathon was registered by DuPont for control of fall armyworm and other caterpillars in pasture and hay in 2012. Prevathon has a 2ee label for control of grasshoppers in pastures and hay in Texas and Oklahoma. Prevathon has a 0-day waiting period for harvest or grazing and is not a restricted use insecticide.

**Mustang Max.** 9.6% zeta-cypermethrin. Applications may be made up to 0 days for forage and hay, 7 days for straw and seed screenings. Restricted use insecticide.

**Karate Z.** 13.1% lambda cyhalothrin. Pasture and rangeland grass, grass grown for hay and silage and grass grown for seed. Pasture and rangeland grass may be used for grazing or cut for forage 0 days after application. Do not cut grass to be dried and harvested for hay until 7 days after the last application. Restricted use insecticide.

**Warrior II.** 22.8% lambda cyhalothrin. Pasture and rangeland grass, grass grown for hay and silage and grass grown for seed. Pasture and rangeland grass may be used for grazing or cut for forage 0 days after application. Do not cut grass to be dried and harvested for hay until 7 days after the last application. Restricted use insecticide.

**Lambda-Cy.** 11.4% lambda cyhalothrin. Pasture and rangeland grass, grass grown for hay and silage and grass grown for seed. Pasture and rangeland grass may be used for grazing or cut for forage 0 days after application. Do not cut grass to be dried and harvested for hay until 7 days after the last application. Restricted use insecticide.

**Baythroid XL.** 12.07% Cyfluthrin. Pasture, rangeland, grass grown for hay and seed. Zero days to grazing or harvesting hay. Restricted use insecticide.

**Tombstone Helios.** 25% Cyfluthrin. Pasture, rangeland, grass grown for hay and seed. Zero days to grazing or harvesting hay. Restricted use insecticide.

**Dimilin 2L.** 22% diflubenzuron. Dimilin is labeled for grasshopper control for pastures, including forage which is mechanically harvested, roadsides, fence rows and other noncrop areas. Wait one day until harvest. Label does not list a restriction on grazing. To be effective, Dimilin must be applied when young hoppers are about 1/4-inch long. Dimilin is not effective on adult (winged) grasshoppers. If adults are present, add a second insecticide that is effective on adults. Dimilin must be eaten by the grasshoppers to be effective. Provides residual control for several weeks as long as treated forage is not removed from field.

### **When should insecticides be applied?**

Monitor grasshopper infestations and treat threatening infestations while grasshoppers are still small and before they move into crops and landscapes. Immature grasshoppers (without wings) are more susceptible to insecticides than adults. Applications may be made anytime after eggs begin to hatch. For optimum results, applications should be made when the majority of the

nymphs have reached the 2<sup>nd</sup> and 3<sup>rd</sup> instar stage of development.

You can estimate the size of a grasshopper infestation by surveying for nymphs or adults with the "square foot method." Count the number of grasshoppers that hop or move within a square foot area. Then take 15 to 20 paces and sample another square foot area. Make 18 samples in all. Then add the numbers from each sample and divide the total by two to obtain the number of grasshoppers per square yard. If most grasshoppers you see are first to third instar (wingless and generally less than 1/2 inch long), divide the number by three to give the adult equivalent. Count fourth instar and older nymphs as adults.

Use Table 1 to determine different levels of threat posed by various population sizes.

**Table 1. Control thresholds based on numbers of adult grasshoppers per square yard.**

<b>Rating</b>	<b>Adults per square yard</b>	
	<b>Margin</b>	<b>Field<sup>a</sup></b>
Non-economic	5 to 10	0 to 2
Light	11 to 20	3 to 7
Threatening	21 to 40	8 to 14
Severe	41 to 80	15 to 28
Very severe	80	28+

- a. Field Ratings should be used for both rangelands and croplands.

I know right now many folks are gearing up to spray weeds and/or using liquid fertilizer, so it would be very economical to go ahead and also spray for the grasshoppers at the same time.