Insecticides Labeled for Grasshopper Control in Pastures and Hayfields. 2013.

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 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 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 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, rangeleand, 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% difulbenzuron. Dimilin is labeled for grasshopper control for pastures, including forage which is mechanically harvested, roadsides, fence rows and other non-crop 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 ¼- 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.

Sevin 4F, Sevin XLR, Sevin 80S, Generic Carbaryl. Carbaryl is the active ingredient. When applied to pastures, there is a 14 day waiting period before grazing or harvesting.

Malathion 57% and Malathion ULV. Zero days to harvest or grazing**.**

For more information, see: Extension bulletin E-209 *Grasshoppers and Their Control*
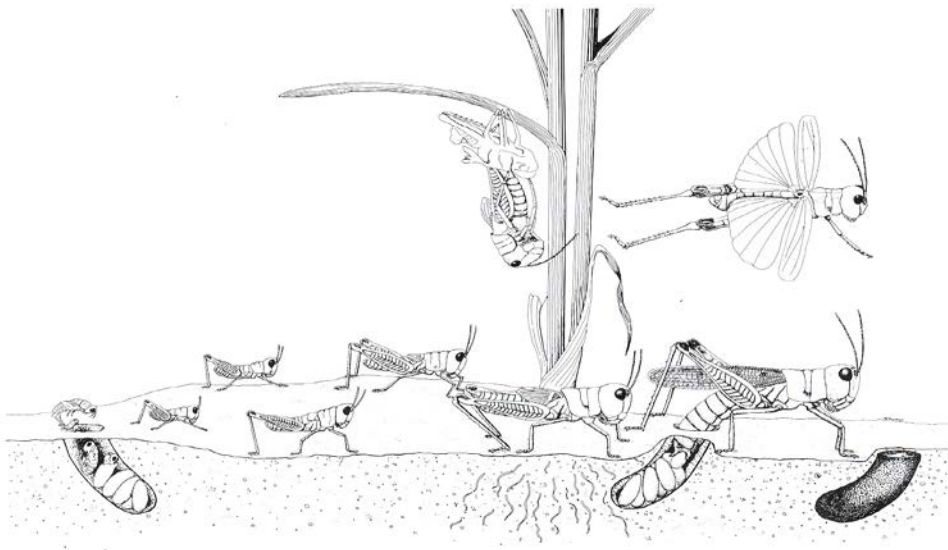
Grasshopper eggs are deposited in clusters ½ -2 inches deep in the soil in the fall. The eggs overwinter. Young grasshoppers emerge the following spring and summer. As they grow, they molt which is the process of shedding their old skins and generating a new, larger skin. Each period between molting is called an instar and 5-6 instars are completed before the final molt to the adult stage. The adult stage has fully developed wings.

Grasshoppers: Frequently Asked Questions. 2013.

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Why are grasshoppers so bad this year, again?

Consecutive years of hot, dry summers and warm, dry autumns favor grasshopper survival and reproduction. Warm, dry fall weather allows grasshoppers more time to feed and lay eggs. Also, rains in the spring when eggs are hatching drown young hoppers and encourage fungal diseases which kill hoppers. Thus, dry weather in the spring favors their survival. During hot, dry summers, weedy hosts dry up and grasshoppers fly in search of green plants. The search for food can result in large numbers of grasshoppers concentrating in orchards, crops and irrigated landscapes.

From where do grasshoppers come?

Grasshopper eggs are deposited in the soil ½-2 inches deep in weedy areas, fence rows, ditches and hay fields. The eggs hatch in the spring and early summer. Eggs of different grasshopper species hatch out at different times, so young grasshoppers can be seen throughout the spring and early summer.

Young grasshoppers, called nymphs, feed for about six weeks. Once nymphs reach the adult stage, they can fly. As weedy plants are consumed or dry in the summer heat, adult grasshopper can fly from weedy areas and pastures to more succulent crops and landscapes.

When will grasshopper numbers decrease this season ?

Although grasshoppers complete only one generation a year, eggs hatch over a long period of time. Development from egg to adult requires about 40-60 days. Also, eggs of different species hatch at different times so small grasshoppers can be found throughout the growing season. Grasshopper can persist until late fall when adults begin to die or when a killing frost occurs.

What can be done to reduce their number ?

Weed control. Eliminating weeds will starve young hoppers and later discourage adults from laying eggs in the area. However, destroying weeds infested with large numbers of grasshoppers can force the hungry grasshoppers to move to nearby crops or landscapes. Control the grasshoppers in the weedy area first with insecticides or be ready to protect nearby crops if they become infested. Grasshoppers deposit their eggs in undisturbed soil, as in fallow fields, road banks, and fence rows.. Shallow tillage of the soil in late summer may be of some benefit in discouraging egg lay.

Are insecticides effective?

Grasshoppers are susceptible to many insecticides. However, insecticides typically do not persist more than a few days and grasshoppers may soon re-invade the treated area. The length of control will depend on the use rate and residual activity of the insecticides and the frequency of retreatment. Controlling grasshoppers over a large area will reduce the numbers present which can re-infest a treated area.

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.

Some insecticides for controlling grasshoppers in the home landscape and / or gardens. Refer to label for where product can be used (landscape, vegetables, fruit trees, etc.).

Cyfluthrin, bifenthrin, permethrin, cyhalothrin and carbaryl are some of the active ingredients that control grasshoppers and that are formulated and packaged for homeowner use. Look for one of these insecticides listed in the active ingredients on the product label. Read the label carefully to determine if the site you wish to treat (vegetable garden, fruit trees, etc.) is listed on the label as an approved site.

Are biological control products such as Nolo Bait, Grasshopper Attack, and others effective?

These products contain spores of a protozoan called *Nosema locustae,* formulated on a food bait. Grasshoppers consuming the bait become infected by the *Nosema* organism. Once infected with this parasite, some immature grasshoppers die. Adult grasshoppers often survive but females lay fewer eggs. Nosema baits act too slowly and kill too few grasshoppers to be much value when the need for control is immediate. These products have been most effective when applied over very large acreages of rangeland.

What other non-pesticide controls can be used?

Floating row covers can protect vegetables, flower gardens, small fruit trees and other small areas from grasshoppers. These lightweight fabrics let sunlight in while protecting plants from insects and cold. However, under heavy attack, grasshoppers may chew through the fabric to get to plants.