

The Fall Armyworm - Pest of Pasture and Hay. 2014

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Two species of armyworms are common pests of forage and field crops in north Texas. The fall armyworm, *Spodoptera frugiperda*, is most abundant during mid-summer through early November in north Texas and feeds primarily on bermudagrass, wheat and rye grass, although it attacks many other crops. The true armyworm, *Mythimna (Pseudaletia) unipuncta*, is most common during April and May when it attacks wheat, rye grass, winter pastures, and seedling corn and sorghum. Both caterpillars can occur in very large numbers, can consume a crop almost overnight, and will move in large masses or armies to adjacent fields in search of food.

The fall armyworm apparently does not overwinter in north Texas, but does survive the winter in south Texas. Fall armyworm moths fly and are carried by winds into north Texas beginning in the early summer. Outbreaks often occur in mid-summer and fall and follow periods of rain which apparently create favorable conditions for eggs and small larvae to survive in large numbers.

Life Stages of the Fall Armyworm.

Development from egg to adult or moth stage requires about 3-4 weeks during the summer and is longer during cool weather. There are several generations a year. Development ends with cold weather in November.

Eggs. Eggs are laid in masses of up to 50 eggs on the grass leaves low in the plant canopy and are very difficult to find. Eggs are covered with the grey scales from the moth's body, giving the mass a fuzzy appearance. Eggs hatch in 2-3 days.

Caterpillar. Fall armyworms are green, brown or black. A distinct white line between the eyes forms an inverted "Y" pattern on the face. Four black spots aligned in a square on the top of the segment near the back end of the caterpillar are also characteristic of fall armyworm. Armyworms are very small (1/8 inch) at first, cause little plant damage and as a result infestations often go unnoticed. Larvae feed for 2-3 weeks and full grown larvae are about 1 to 1 1/2 inches long. Armyworms consume 80% of their total food intake during the last few days of development. Given their immense appetite, great numbers, and marching ability, armyworms can damage entire fields or pastures in a few days. Once the armyworm

completes feeding, it tunnels into the soil to a depth of about an inch and enters the pupal stage.

Pupa. The pupal stage is inactive and does not feed, but internally the caterpillar transforms into the moth. In about 10 days, the moth emerges from the pupa and repeats the life cycle.

Moth. The fall armyworm moth has a wingspan of about 1 1/2 inches. The front pair of wings is dark gray with an irregular pattern of light and dark areas. Moths are active at night when they feed on nectar and deposit egg masses. A single female can deposit up to 2000 eggs.

Management.

Fall armyworm infestations often develop after rains occur in an area. Hay fields with a dense canopy and vigorous plant growth are often more susceptible to armyworm infestations than less intensely fertilized and managed fields. Irrigated fields are also susceptible to fall armyworm infestations, especially during drought conditions.

Look for fall armyworm larvae feeding in the crop canopy during the late evening and early morning and during cool, cloudy weather. During the day, look for armyworms on the soil surface where they hide under loose soil and fallen leaves. When fields are wet with dew, armyworms can stick on rubber boots worn while walking through the field. The presence of chewed leaves can indicate armyworms are present. Small larvae chew the green layer from the leaves and leave a clearing or “window pane” effect and later notch the edges of leaves.

The key to managing fall armyworms is frequent inspection of fields to detect fall armyworm infestations before they have caused economic damage. Once larvae are greater than 3/4 inch, the quantity of leaves they eat increases dramatically. During the final 2-3 days of feeding, armyworms consume 80% of the total foliage consumed during their entire development. For this reason, extensive feeding damage can occur in a few days. Also, smaller larvae, about 1/2 inch long, are more susceptible to insecticides than larger caterpillars.

The density of armyworms sufficient to justify insecticide treatment depends on the stage of crop growth and value of the crop. Seedling plants can tolerate fewer armyworms than established plants. Infestations of 2-3 armyworms per square foot may justify treatment.

Insect parasites such as wasps and flies, ground beetles, and other predators help suppress armyworm numbers. Diseases such as insect viruses and fungi can also be important. However, these natural enemies can be overwhelmed when large numbers of migrating moths move into an area and weather conditions favor high survival of eggs and larvae.

Fall armyworms often infest fields of volunteer wheat and weedy grasses in ditches and around field margins. Destruction of volunteer wheat and weedy grasses can eliminate these sources of armyworms.

If practical, apply insecticides early in the morning or late in the evening when armyworm larvae are most active and therefore most likely to come into contact with the insecticide spray.

Insecticides Labeled for Armyworm Control in 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.

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

Dimilin 2L. 22% diflubenzuron. Fall armyworm and immature grasshoppers. Dimilin must be applied before armyworm larvae reach ½ inch or larger. Provides residual control for up to 2-3 weeks, as long as forage is not removed from the field. Label does not list a restriction on grazing.

Intrepid 2F. Fall armyworm (not grasshoppers). Begin applications when first signs of armyworm feedings appear. Use higher rates for heavier infestations. Do not harvest hay within 7 days of application. No pre-harvest interval for forage. 0 days to grazing.

Karate Z. 13.1% lambda cyhalothrin. Fall armyworm and grasshoppers. 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. Fall armyworm and grasshoppers. 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.

Malathion_57% and Malathion ULV. Fall armyworm and grasshoppers. Zero days to harvest or grazing.

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

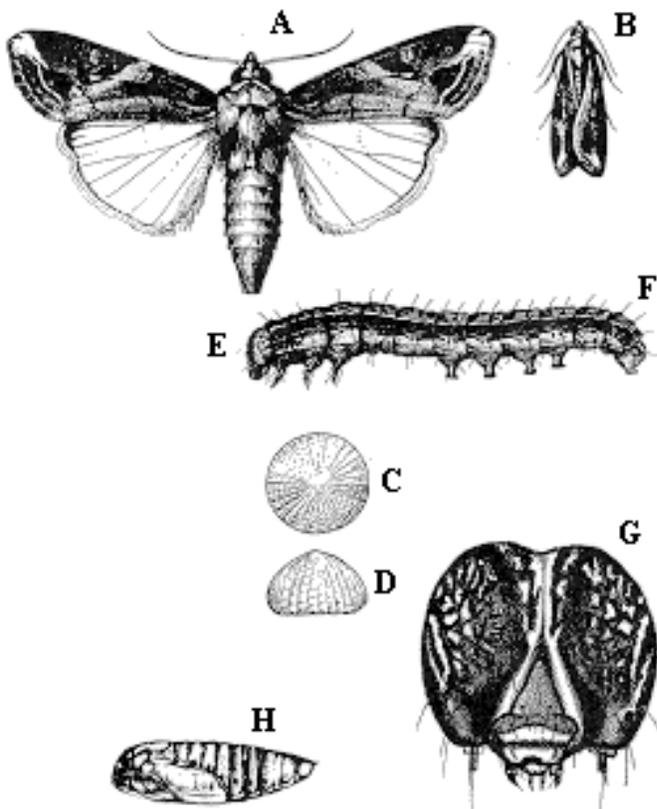
Prevathon. 5% rynaxypyr. Fall armyworm and grasshoppers. Prevathon has a 0 day waiting period for harvest or grazing and is not a restricted use insecticide.

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

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

Tracer. Treat when armyworm eggs hatch or when larvae are small. Use higher rates for larger larvae. Do not graze until spray is dry. Do not harvest hay or fodder for 3 days after treatment. Do not allow cattle to graze until spray has dried.

Warrior II. 22.8% lambda cyhalothrin. Fall armyworm and grasshoppers. 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.



Fall armyworm. A & B, Adults. C- E, Eggs (enlarged) and egg mass. F & G, Larva with front view of head. H, Pupa.