



BUG BIZ

Pest Management and Insect Identification Series



Spodoptera frugiperda, Fall armyworm (Lepidoptera: Noctuidae)

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Description

The fall armyworm is an important agricultural pest native to the Americas. However, it has recently been discovered in Africa and Asia, becoming an important agricultural threat worldwide. Members of this species cause significant damage to cotton, maize, rice, sorghum, sugarcane and vegetable crops.

Fall armyworm moths have a wingspan of 1½ to 1¾ inches (32 to 40 mm), with mottled gray or brown wings. Male and female moths differ in appearance and considerable variation in color and pattern can exist within populations. Male moths possess a white spot at the end of each wing, while female moths are less boldly patterned and lack the white spot. Larvae are light green to dark brown as they mature. During the final larval stage, larvae can reach 34 to 46 mm. Mature larvae are marked with a white inverted “Y” on their heads. Pupae are reddish-brown and can be found in the soil at a depth of 1 to 3 inches (2 to 8 cm). Eggs are tiny, white and are typically deposited in masses on the undersides of leaves.

Fall armyworm adults and larvae are similar to a number of other members of the moth family Noctuidae, making positive identifications problematic for nonspecialists. At least four other members of the genus *Spodoptera* occur in Louisiana.



Larva of fall armyworm (Frank Peairs, Colorado State University, Bugwood.org).



Fall armyworm life stages (University of Georgia, Bugwood.org).



Male fall armyworm moth (Lyle Buss, University of Florida, Bugwood.org).

Life Cycle

The life cycle of fall armyworms is completed in about 30 days during the summer and 80 to 90 days during the winter with intermediate durations that are weather dependent. In Louisiana, the fall armyworm may complete four generations and only one generation in northern U.S. Depending on weather and diet, larval development requires 14 to 21 days and pupal development requires nine to 13 days. Adults have an average lifespan of 12 to 14 days.

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Corn damage caused by fall armyworm (University of Georgia, Bugwood.org).

Ecological Significance and Pest Management

Fall armyworm occurs in two strains: a “rice strain,” which preferentially feeds on rice and various grasses, and a “corn strain” that feeds on maize, cotton and sorghum. These genetic differences are independent of the host plant. Individuals of the two strains do not differ in appearance and can only be distinguished by molecular techniques.

The fall armyworm is an agricultural pest worldwide, causing over 6 billion dollars in damage in the United States annually. The species has a broad host range (polyphagy), feeding on leaves and stems of approximately 353 plant species. The broad host range makes the species difficult to control as a pest. Major damage occurs in economically important cultivated grasses, such as field corn, sweet corn, rice, sugarcane and sorghum. Larvae cause damage by consuming leaves, stems and reproductive parts of plants. Damage to corn can affect corn whorls, tassels and silks. Left unmanaged, the fall armyworm can cause significant yield loss.

Control

The most effective cultural control practices are the use of early planting and early maturing varieties. This allows the crop to mature before insect pest levels increase later in the season. Soil fertility management, crop rotation and maintaining diverse field margins also mitigate insect pest pressure. Planting resistant varieties can decrease susceptibility to crop damage.

Parasitoids in the order Hymenoptera may provide biological control. Although there are several pathogens that provide control against the fall armyworm, *Bacillus thuringiensis* is most effective. Please contact your LSU AgCenter agent for the availability of biological options in your area.

Chemical control is one of the most effective strategies for fall armyworm management. Because of the feeding behavior of this pest, management relies mostly on foliar insecticide applications. However, fall armyworms are better controlled when the larvae are small (under $\frac{1}{15}$ to $\frac{1}{7}$ of an inch; 1.7 to 3.5 mm long). Controlling larger larvae is more difficult because they are often covered by a protective coating of feces (frass). Therefore, scouting and application timing play an important role for management of this pest. Applicators must follow label instructions. Insecticide applications are effective when they follow a routine application schedule. Please see the current Louisiana Pest Management Guide (Publication No. 1838) for currently approved insecticides.

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Contact Us: For advice about arthropod identification or diagnosis, contact the LSU AgCenter Department of Entomology. Reach the department through the Contact Us webpage: <https://bit.ly/36c4awm>.



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