

# VEGETABLE CROPS

## INSECTS OF CORN Fall Armyworm

Cooperative Extension New York State Cornell University

Page: 790.00  
Date: 6-1983

### fall armyworm

*Spodoptera frugiperda* (Smith)

#### Introduction

The fall armyworm is a resident of the southern United States, the tropics of Central, and South America, and some of the islands of the West Indies. It survives the winter only in the warm Gulf Coast areas of the southern United States and in the Tropics. The adults migrate northward annually arriving in the northeastern United States anytime from early to late July. There is one and a partial second generation in the northeastern states depending on the time of arrival and temperatures in late summer and early fall. While the fall

armyworm is known mainly as a pest of corn in the Northeast, it also feeds on such other crops as alfalfa, cotton, peanuts, and grasses farther south. This insect is a member of the same family (Noctuidae) as the true armyworm, cutworms, and corn earworm.

#### Adults

The adult moth is similar in appearance to many of the cutworm moths. The wingspan is about 1 1/2 inches (36 mm); the hind wings are grayish white and the first pair are dark gray mottled with lighter and darker patches and a noticeable whitish spot near the extreme tips (fig. 1). The moths are active mainly at night. They fly long distances in large swarms as they migrate northward. When they settle

Actual Size

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Egg

Larva

Pupa

Adult



down they lay eggs on corn in all growth stages from whorl to silk. A single female may lay up to 1,000 eggs in batches of approximately 150 per mass.

### **Eggs**

Eggs are laid at night on corn plants and hatch in about 5 days. The egg masses are attached directly to the host plant and are covered with hairs from the body of the female moth (fig. 2).

### **Larvae**

The young larvae (caterpillars) feed in concealed locations on the corn plant such as within the whorl (fig. 3). Unlike the true armyworm and cutworms which leave the plant to hide in the soil in the daytime, fall armyworm larvae do not leave the plant. Larvae become full grown (about 1 1/2 inches or 30 mm) in approximately 20 days. They vary in color from light tan or green to nearly black. Fall armyworm larvae are similar to the true armyworm in appearance but can be distinguished by the more prominent white inverted Y on the front of the head. It can also be distinguished from the true armyworm by its feeding on cotton, tobacco, legumes, and many vegetables, as well as grasses, while the armyworm feeds chiefly on grains and grasses.

On the major host plant in the Northeast the fall armyworm feeds in the center of the whorl of corn leaving ragged leaves and much frass in the whorl. Later in the season it feeds on the corn ears entering either through the silk channel or the side of the ear. During years of heavy infestation, this insect may infest a high percentage of the ears.

### **Pupae**

When the larvae are full grown they leave the host plant and enter the soil for pupation.

In about two weeks moths emerge to lay eggs for a second generation of larvae in September and early October.

### **Damage**

The first waves of migrating moths lay their eggs on young corn resulting in substantial damage to the whorl and tassel by the feeding larvae (fig. 4). The plant is deformed and growth is retarded. The larvae, during years of heavy infestation, infest a high percentage of the ears through direct feeding (fig. 5). Some larvae enter the ear through the silk channel much like an earworm, others bore directly through the husk on the side of the ears then eat out the kernels in a circular pattern elsewhere on the ear.

### **Control**

Natural organisms exist in the field which help to control this pest. Because of its migratory habits, however, large populations often develop in a short period of time with successive waves of moth flights on warm, humid, summer nights.

To obtain commercially acceptable sweet corn, this pest must be controlled with insecticides.

Consult your local extension recommendations to determine which pest management practices are effective in your area.

### **Evaluating Populations**

Black light traps are useful in determining when the first moths arrive in the North. After these early arrivals are trapped, field scouting of corn in the whorl stage is useful to determine population levels. A population level of 15 percent of damaged plants in the whorl stage is considered an action threshold.

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#### **Quantity Discount Available**

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Written by A. A. Muka  
7/83 FLP 5M 8214