Common Name: Pink bollworm

Latin Name: *Pectinophora gossypiella*

Category: Terrestrial Animal

Place of Origin: Southern Asia

Place of Introduction: Hearn, Texas. Now found in Oklahoma, Texas, New Mexico, Arizona, and Nevada and parts of Arkansas, California, and Louisiana. Pink bollworm is also found on wild cotton in southern Florida (http://www.ceris.purdue.edu/napis/pests/pbw/facts.txt).

Date of Introduction: 1917

Life History: "The pink bollworm has four stages of development: egg, larva, pupa, and adult. In early June, female moths lay 100 to 200 eggs on young cotton bolls. The eggs hatch in about 5 days and develop into larvae the life stage that damages cotton.

The larvae bore into the cotton bolls and feed from 10 to 14 days on the seed. One larva eats a whole seed or parts of several seeds. When larvae finish feeding, they either drop to the ground or remain in the seed to pupate. Pupation can also take place under ground trash.

Pupae emerge as moths in 8 to 10 days. The female moths mate and start laying eggs 1 to 3 days later. Adults are active only at night and live about 10 days. The bollworm completes 3 to 5 life cycles per year depending on the cotton producing area of the country it is in.

In warmer areas, most of the larvae overwinter in cotton or okra pods left in the field after harvest. In colder climates, larvae may form cocoons in the soil for overwintering. Larvae can also stay in cotton seed after the cotton is ginned, and if the seed is not fumigated, some of the larvae can emerge from the stored seed the next spring (http://www.ceris.purdue.edu/napis/pests/pbw/facts.txt)."

Growth/Size: Larvae are 7-10 mm. Adults also about 7-10 mm long, with a wingspan of 15-20 mm (http://www.ceris.purdue.edu/napis/pests/pbw/facts.txt).

Feeding Habits/Diet: "Pink bollworm larvae feed inside the growing cotton boll, destroying the cotton. It prefers cotton, but will feed on okra, kenaf, and hibiscus (http://www.ceris.purdue.edu/napis/pests/pbw/facts.txt)."

Habitat: Mostly agriculture: cotton fields, okra fields, kenaf, hibiscus.

Physical Description: "Pink bollworm larvae are 7 to 10 mm long (1/4 to 3/8 inch). Their bodies are ivory with pink bands, and their heads are dark. Adult moths are grayish brown and about the same length. Their wingspan is 15 to 20 mm (5/8 to 7/8 inch) (http://www.ceris.purdue.edu/napis/pests/pbw/facts.txt)."

Management Recommendations / Control Strategies: include references for existing site-specific strategies

"APHIS, in cooperation with California cotton growers and the California Department of Food and Agriculture (CDFA), is preventing the pink bollworm from infesting the San Joaquin Valley. The program involves releasing sterile bollworm moths to prevent the pest from establishing itself there during seasonal movement from infested areas to the south (http://www.ceris.purdue.edu/napis/pests/pbw/facts.txt).

Regulatory Activity

   APHIS' Plant Protection and Quarantine (PPQ) program requires a certificate or permit for the following articles to be moved from a quarantine zone:
1. Cotton and wild cotton, including all parts of such plants.
2. Seed cotton.
3. Cottonseed.
4. Cotton lint from American~Egyptian varieties with the following exceptions: Baled cotton lint and lint cleaner waste, if compressed to at least 22 lb/ft~. Baled cotton lint moving from infested areas, where there are no eradication efforts, to suppressive areas, where there are eradication efforts, for ginning. The lint must be from seed cotton produced in a suppressive area. The identity of the lint must be maintained. Samples of cotton lint of the usual trade size. The samples may be assembled in a single package for shipment.
5. Cotton linters from American-Egyptian varieties, with the following exceptions: Linters compressed to at least 22 lb/ft~. Samples of cotton linters of the usual trade size. Samples may be assembled in a single package for shipment.

6. Cotton waste produced at cotton gins and cottonseed oil mills.
7. Cotton gin trash.
8. Used bagging and other used wrappers for cotton.
9. Used cotton harvesting, cotton ginning, and cotton oil mill equipment.
10. Okra and kenaf, including all parts of such plants except: Canned or frozen okra. Edible okra, if moved interstate between December 1 and May 15. Okra consigned to California, if moved interstate between January 1 and March 15.
11. Any bollworm in any stage of life being used for scientific research.
12. Any other products, articles, or means of conveyance that are determined by APHIS to present a hazard of spreading the pest.

Pink Bollworm Suppression

   A sterile release program in the San Joaquin Valley in California protects more than 1 million acres of prime cotton. Although pink bollworm infests areas to the south, the valley is free of the pest, and APHIS is assisting California to keep it that way.
   Should pink bollworm moths invade the valley, a large population of sterile moths will already be in place to mate with fertile moths, breeding the pest out of existence.
   Millions of moths are raised and sterilized at a special facility in Phoenix, AZ. The moths are then shipped to California for release from small airplanes over cotton fields. Sterile release occurs from May to mid-October, when pink bollworms are most active in cotton.
   For the sterile release method to work, a ratio of 60 sterile moths to 1 wild moth is needed. This high ratio of sterile to fertile moths makes sterile releases impractical in heavily infested areas (http://www.ceris.purdue.edu/napis/pests/pbw/facts.txt)."

References (includes journals, agency/university reports, and internet links):

1. http://www.ceris.purdue.edu/napis/pests/pbw/index.html

2. U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) 1993. Pink Bollworm. FACTS Sheet FACTS-06 PPQ (made available through the) CAPS program MARCH 19.
http://www.ceris.purdue.edu/napis/pests/pbw/facts.txt

Available Mapping Information:

http://www.ceris.purdue.edu/napis/pests/pbw/index.html