



Identification of Insect Pest of Cotton Crop and their Management

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Abstract

Cotton, a natural fiber, has been a cornerstone of human civilization for thousands of years. From ancient Egyptian linens to modern-day clothing, cotton has played a significant role in shaping our daily lives. This article delves into the history, uses, and impact of cotton, exploring its:

- History: From ancient civilizations to modern-day production
- Uses: Clothing, bedding, medical applications, and industrial purposes
- Impact: Economic, environmental, and social implications

Cotton's versatility, durability, and comfort have made it a staple in our daily lives. However, the industry faces challenges such as water pollution, soil degradation, and labor practices. As we move forward, sustainable and ethical production methods are crucial to ensure a bright future for this vital crop.

Keyword : Cotton, history, uses, impact, sustainability, ethics.

Introduction

Cotton, a soft, fluffy staple fiber, has been a cornerstone of human civilization for thousands of years. From ancient Egyptian linens to modern-day clothing, cotton has played a significant role in shaping our daily lives. In this article, we'll delve into the fascinating history of cotton, its various uses, and its impact on the world.

History of Cotton

Cotton has its roots in ancient civilizations, with evidence of cotton production dating back to around 5000 BCE in the Indus Valley Civilization. The crop spread to Egypt, China, and the Americas, becoming a valuable commodity in global trade. The Industrial Revolution further boosted cotton production, making it one of the most widely produced and consumed fibers globally.

Fruit borer: *Helicoverpa armigera*

Damages Symptoms: Bolls showing regular, circular bore holes. Larvae seen feeding on the boll by thrusting their heads alone inside and leaving the rest of the body outside. Presence of granular faecal pellets outside the bore hole. A single larva can damage 30-40 bolls.

Identification of the Pest

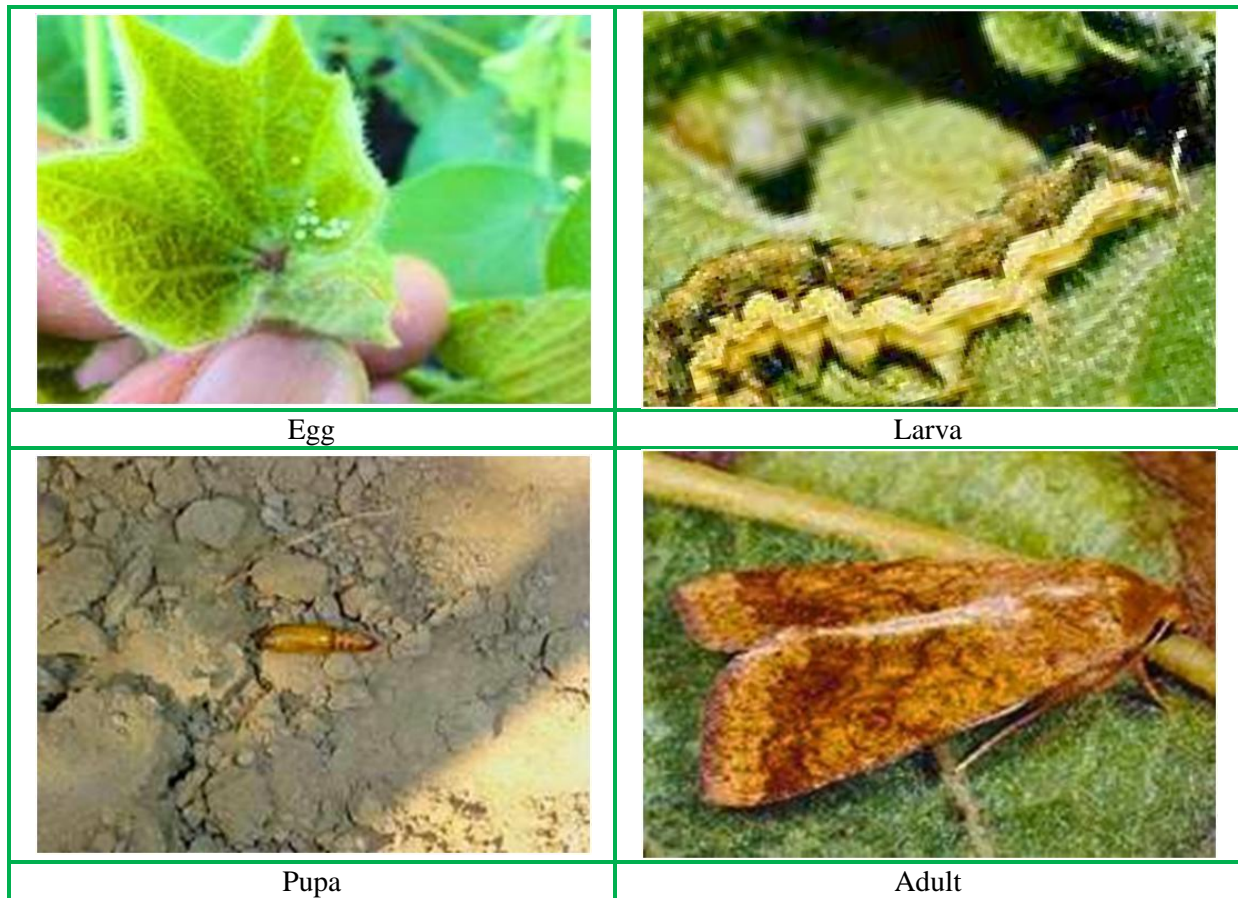
Eggs - Spherical in shape and creamy white in colour, present singly.

Larva - Shows colour variation from greenish to brown. It has dark brown grey lines on the body with lateral white lines and also has dark and pale bands.

Pupa - Brown in colour, occurs in soil, leaf, pod and crop debris



Adult - Light pale brownish yellow stout moth. Forewings are olive green to pale brown in colour with a dark brown circular spot in the centre. Hind wings are pale smoky white with a broad blackish outer margin.



Management

Monitoring: Pest monitoring through light traps, pheromone traps and in situ assessments by roving and fixed plot surveys has to be intensified at farm, village, block, regional and State levels. For management, an action threshold of one egg per plant or 1 larva/ plant may be adopted.

Pink bollworm: *Pectinophora gossypiella*

Damages Symptoms

Rosetted flowers: The holes of entry plugged by excreta of larvae which are feeding inside the seed kernels. They cut window holes (interlocular burrowing) in the two adjoining seeds thereby forming "double seeds". The attacked buds and immature bolls drop off. Discolored lint and burrowed seeds.



Identification of the Pest

Larva: Shows colour variation young larva white and late instar almost black, brown or green to pale or pink. several dark and light alternating bands running the entire length.

Adult: Small moth. Forewings are brown or dull yellow olive grey with dark spots on the forewing. Hind wings margins are deeply fringed.



Management: ETL: 10% infested fruiting parts. Use pheromone trap to monitor the adult moth activity. Three weekly releases of egg parasitoid

Trichogrammatoidea bactrae @ 1,00,000/ha per release. Coinciding the incidence of the pest. Dust carbaryl 5%D 20 kg/ha. Spraying any one of the following insecticides: Phosalone 35%EC 2000 ml/ha, Triazophos 40EC 2.5l/ha

Leaf roller: *Sylepta derogata*

Damages Symptoms: Leaves rolled in the form of trumpets fastened by silken threads. Marginal portion of leaves eaten away. Plants defoliated in severe attack.

Identification of the Pest

Larva - Bright green (glistening) with dark head and prothoracic shield.

Adult - Moth with yellow wings having brown wavy markings.

Management

Collection and destruction of shedded plant parts. Hand picking and destruction of grown up caterpillars. Spray any one of the following insecticides: chlorpyrifos 20 EC 2.0 l/ha, dichlorvos 76 WSC 1 lit/ha, fenitrothion 50 EC @ 625 ml.



Tobacco Cutworm: *Spodoptera litura*

Damages Symptoms : Scrapping the epidermal layer, leaving the skeleton of veins of leaf. During severe attack, only the stem and side shoots will be standing in the field without any leaf or bolls. Larvae feed the leaves by making small holes.

Identification of the Pest

Egg - Laid in masses which appear golden brown.

Larva - Pale greenish with dark markings. Gregarious in the early stages

Adult: Forewings – brown colour with wavy white marking, Hindwings- white colour with a brown patch along the margin.

Management

ETL: 8 egg masses/100 m row. Use of light trap to monitor and kill the attracted adult moths. Set up the sex pheromone trap at 12/ha to monitor the activity of the pest and to synchronise the pesticide. Application, if need be, at the maximum activity stage. Growing castor along border and irrigation bunds. Removal and destruction of egg masses in castor and cotton crops



Conclusion

Cotton, a humble fiber, has woven its way into the fabric of human history, shaping our daily lives in countless ways. As we move forward, it's essential to acknowledge the environmental and social implications of cotton production, striving for sustainable and ethical practices that benefit both people and the planet.

References

1. The Biology of *Gossypium hirsutum* L. and *Gossypium barbadense* L. (cotton). ogtr.gov.au
2. The Evolution of Cotton". Learn.Genetics. Retrieved 22 March 2023.
3. "Natural fibres: Cotton". 2009 International Year of Natural Fibres. Archived from the original on 3 September 2011