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COTTON INSECTS

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Abstract: This article discusses the biological characteristics, development cycle, and impact of the main sucking pests of cotton - thrips, aphids, mites , and other insects - on cotton yields. It also discusses effective methods of combating these pests, including the role and importance of agrotechnical, biological , and chemical measures. The article emphasizes the relevance of monitoring cotton fields, controlling pest populations , and applying integrated pest control measures.
Key phrases: Cotton sucking pests, Thrips (Thrips tabaci), Cotton aphids (Aphis gossypii), Mites (Tetranychus urticae), Pest biology, Integrated pest management methods, Biological control agents, Monitoring and forecasting, Environmentally safe protection, Negative impact on productivity.

Several types of sucking pests damage potatoes: spider mites, plant sap suckers, aphids, and thrips. The spider mite is a common and persistent pest of potatoes and other crops. It is an omnivorous pest that sucks sap from potatoes, vegetables and cereals, legumes, and other crops, causing great damage to them.
In addition, cotton is damaged by several types of pests. The most important of their operations are tobacco processing, cotton processing, and sugarcane processing. The dynamics of the development and damage of these pests in the Kew Gardens have changed dramatically. In general, each type of trier has its own time to cause damage. For this reason, it is necessary to fight them in a timely manner .[2]

1. Species – Spider mite – (Tetranushus urtisae Kosh.) (Family – Mites – Acaridae. (Family – Mites – Acarina.)
The male spider mite is 0.2-0.3 mm long, the female is 0.4-0.6 mm long. It is reddish in early spring and blue-yellow in summer. The development of the spider mite consists of egg, larva, nymph , and adult stages.
The caterpillar has three pairs of legs, the nymph and adult have four pairs of legs. The spider has 26 hairs in 7 rows on its back.
Spider mites, larvae, nymphs , and adults, suck plant sap and damage plants. They often settle in large numbers on the back of the leaf, causing damage (Figure 1).

The body length of the red female is ~0.5 mm.

Two-spotted spider mite

Figure 1 . Spider mite. [3]

Spider mite accent plant remains and soil in the cracks It hibernates . It emerges from hibernation when the average temperature reaches + 7 ° C, that is, in March. The overall development period lasts from 8 to 30 days, depending on weather conditions.

In Central Asia, the spider mite produces 12-20 generations.

2. Species - Tobacco thrips - (Thrips tabaci Lind.) (Family - Thripidae. Order – Thrips – Thysanoptera.)

The tobacco thrips are 0.8-0.9 mm long. The body is oblong, the female is longer than the male, and has two pairs of narrow wings. The mouthparts are adapted to a piercing-sucking type.

Tobacco thrips develop through larval and adult stages. Tobacco thrips overwinter under plant debris. From March, thrips begin to develop in weeds, and later move to cotton. Each female lays up to 100 eggs in plant tissue. Tobacco thrips produce 7-8 generations in Uzbekistan (Figure 2).

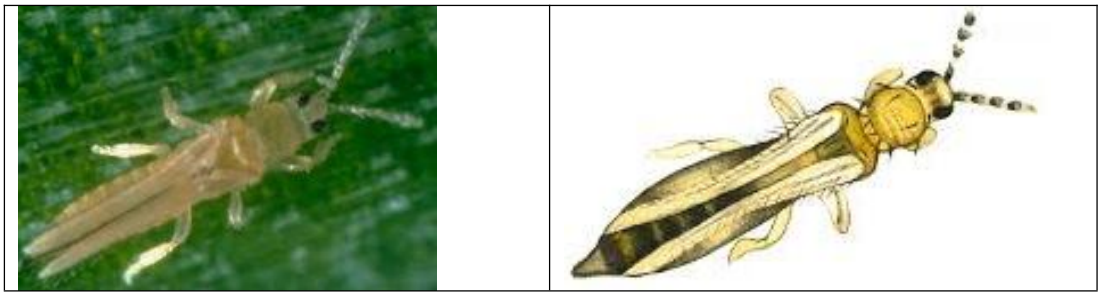

Figure 2. Life cycle of tobacco thrips (Trips tabaci) .[4]

3. Species – Large cotton aphid – (Acyrthosiphon gossypii Mordy.) (Family – Aphids – Aphididae. Order – Hemiptera.)

The cotton aphid is a winged or wingless insect of the aphid family. Its body length is 3.5-4.0 mm. The winged and wingless live-bearing females are light green or yellow in color, with red eyes. The aphid-excreting tubes and tail are thin, about half the body length. The egg-laying female is yellow-brown in color. During the year , it produces several parthenogenetic (unfertilized) and one sexual generation (fertilized). Its eggs overwinter in cotton buds and in the buds (Figure 3).

Figure 3. The body length of an adult cotton bollworm (Acyrthosiphon gossypii) is 2.5 -3.8 mm[5].

It attacks cotton seedlings with the appearance of the second leaf. In July and early August, the number of large cotton bollworms per bush reaches 100-200, then decreases slightly, and by autumn their number increases again. Large cotton bollworms are the most dangerous pest of cotton. They spread not only on the leaves, but also occupy the stem and pre-flowering part; this causes the shedding of the fruiting organs. In autumn, the technological quality of cotton fibers contaminated with louse feces is impaired.

Control methods: When the number of insects reaches 150-250 per 100 plants, spray organophosphorus preparations that act internally.

4. Type – Acacia louse – (Aphis craccivora Koch.) (Family – Aphididae. Order – Hemiptera.)

The female acacia aphid, which gives birth to live young, is 1.3-2.2 mm long. The body is black. The male differs from the female in that it has wings. This aphid (like the alfalfa aphid) overwinters as an egg on alfalfa or acacia. It emerges from hibernation in March. This aphid also damages cotton by sucking the sap. Originally from the Palearctic, it is now a cosmopolitan species.

The female has a dark brown body, a shiny tail-like growth , and brown or yellow legs. The male, unlike the female, is winged (Figure 4).

			
Urg‘ ochisi .	A live-bearing female .	The man.	They are causing damage by sucking the sap from the cotton.

Figure 4. Acacia lice[6] .

Description. The acacia aphid is a small species of aphid. The female has a shiny black or dark brown body, a shiny tail and brown or yellow legs. The antennae have six joints, which, along with the leg segments and the end of the body, are black. Adults have no wax on their body surface, but nymphs are lightly dusted with wax. Winged females are up to 2.2 mm long and have transverse barbs on their abdomen. Wingless females are slightly smaller.

Distribution. The acacia aphid is of Palearctic origin, but its range has expanded, so it is approaching cosmopolitan. In recent years, its range has extended north into Siberia and Canada, and south into Chile and Argentina. It is abundant in the Mediterranean and subtropics, and is one of the most common aphid species in the tropics. It infests peas in India, the Philippines, Thailand, the southern United States, tropical Africa , and Latin America. **Hosts.** The acacia aphid is polyphagous, meaning it feeds on a wide variety of plants, but it prefers members of the legume family. Crops attacked by this aphid include cabbage, beets, peanuts, cotton, and peas.

Life cycle. In the Commonwealth, the Acacia aphid overwinters as eggs, often under young alfalfa plants, but also in acacia, camellia, and perennial weeds. The larvae emerge in early spring and initially feed on alfalfa. All of these aphids are female and reproduce by parthenogenesis, producing four nymphs over a period of 8–12 days . By late April, the winged females migrate to other host plants, most often acacia, and later to cotton, where this pest causes the most damage. Later in the year , they may migrate back to alfalfa. The female aphid lives for 9 to 25 days and may give birth to 25 to 125 live births during her lifetime. Up to 20 generations may be produced during the year. By November, winged forms develop and eggs are laid before winter sets in.

In warm climates, parthenogenetic reproduction occurs year-round. Winged male insects are rare. Aphids are found on the growing points of plants, on young leaves, buds, flowers , and developing shoots. They are often fed by ants, which feed on the secretions they produce and deter predators.

Damage. The acacia aphid directly damages plants by stunting and damaging growth . The honeydew produced accumulates on the plants and promotes the growth of a mold that limits photosynthesis. Aphids are vectors of a number of plant viruses, including peanut rosette virus, peanut mosaic virus, peanut stunt virus, subterranean alfalfa stunt virus, bean common mosaic virus, cucumber mosaic virus, and alfalfa mosaic viruses.

Methods of controlling cotton sucking pests :

In March-April:

1. To organize the laying of 500 4-day-old goldfish eggs per hectare against sucking pests (spider mites, thrips, aphids) and eggs and young larvae of thrips on weeds on the edges of fields,

2. To organize the placement of 1000-1500 goldfish, depending on the number of pests, against sucking pests (spider mites, thrips, aphids) on cotton seedlings;

In May:

1. Dusting of sulfur powder at a rate of 25-30 kg per hectare or using 0.5-1.0 grade OOQ (ISO) on field edges and cotton fields where spider mites are considered to be a constant source of infestation;

2. To increase cotton's resistance to sucking pests, treat cotton seedlings with a 1.5 percent urea solution when they have 2-3 leaflets;

3. Depending on the development of sucking pests in cotton, spread 4-day-old goldfish eggs over the field every 10 days at a rate of 1,000-1,500 per hectare;

In June:

1. In areas where spider mites are present, dusting with sulfur powder at a rate of 25-30 kg per hectare or treating with 0.5-1.0 grade OOQ (ISO) is recommended to prevent them;

2. Treatment of spider mite-infested areas with special acaricides using a hand-held device;

July in the month of:

1. Identify areas of cotton fields affected by spider mites and organize treatment with special acaricides if there is a risk of economic damage;

Conclusion

have a negative impact on cotton yield at all stages of development . Their proliferation slows down plant growth and leads to deformations of leaves and stems. As analyzed in the article, in order to effectively combat these pests, it is necessary to use not only chemical agents, but also biological and agrotechnical methods in a comprehensive manner. In particular, the protection of beneficial entomofauna, constant monitoring and the development of optimal protection strategies are relevant today. On this basis, it is possible to achieve sustainable yields by effectively protecting cotton from sucking pests.

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