



## STUDY OF CABBAGE MOTHS (*MAMESTRA BRASSICAE* L.) DAMAGE TO CABBAGE.

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**Abstract.** This article discusses the bioecology, development and entomophagy of cabbage weevil in natural conditions and their biological effectiveness in reducing the number of weevils.

**Keywords.** Cabbage, crop, damage, drug, weevil, plant, field, rodent, leaf, control, biological effectiveness.

**Аннотация.** В статье представлены результаты изучения биоэкологии капустной совки, особенностей её развития, а также состава и роли естественных энтомофагов в природных условиях. Рассмотрена их биологическая эффективность в снижении численности гусениц вредителя, а также влияние на формирование урожая капусты.

**Ключевые слова:** капуста, урожай, повреждение, препарат, капустная совка, растение, поле, грызущий вредитель, лист, мониторинг, биологическая эффективность.

**Anotatsiya.** Ushbu maqolada karam tunlami bioekologiyasi, rivojlanishi va tabiiy sharoitdagi entomofaglari va ularning tunlamlar sonini kamaytirishdagi biologik samaradorligi haqida so'z boradi.

**Kalit so'zlar.** Karam, hosil, zarar, preparat, tunlam, o'simlik, dala, kemiruvchi, barg, nazorat, biologik samaradorlik.

**Introduction.** Plant pests are organisms that damage or destroy cultivated plants. There are many insect species that feed on plants belonging to the cabbage family. These include the cabbage white butterfly, cabbage moth, cabbage fly, and others. The abundance and composition of food, weather conditions, predators, parasites, diseases, and other factors play an important role in the reproduction of plant pests. Continuously planting the same crop in one place (monoculture) creates favorable conditions for the rapid increase of pests that feed on that specific plant. [1]

**Uzbekistan's Cabbage Export Performance (January–August 2024)** In January–August 2024, Uzbekistan exported **162,000 tons of cabbage** with a total value of **USD 42.7 million**. This represents an increase of **USD 21.5 million** compared to the same period in 2023, highlighting a significant rise in both export activity and demand.

### Major Export Destinations (8 months of 2024)

Uzbekistan's largest cabbage export markets were:

- Russia – 84,800 tons
- Kazakhstan – 64,700 tons
- Kyrgyz Republic – 7,800 tons
- Republic of Belarus – 3,000 tons
- Latvia – 1,300 tons
- Tajikistan – 121 tons

Summary



The strong export performance reflects growing regional demand for Uzbekistan's agricultural products. Russia and Kazakhstan remained the dominant buyers, accounting for the majority of total cabbage export volume.[6]

The cabbage moth (*Mamestra brassicae* L.) belongs to the class Insecta, the order Lepidoptera, and the family Noctuidae. This pest is widely distributed from the western borders of our country to the Far East. The forewings of the moth are dark brown, covered with kidney-shaped white spots on the outer side, or sometimes partially white. The marginal band is yellowish-white with two outward-pointing teeth. The hind wings are gray. Its wingspan is 40–50 mm. The color of the caterpillar ranges from grayish-green to yellowish-brown, and sometimes almost black, with a pale underside. The dorsal side has dark spots. The length of the fully grown caterpillar is 35–40 mm. The pupae overwinter in the soil.

The moth begins to fly from May to June. Adult moths feed on the nectar of flowering plants. They lay their eggs in a single layer on the underside of plant leaves. Each time, they lay between 20 and 150 eggs. A female moth lays on average around 600 eggs, with a maximum of up to 2600. The egg stage lasts 4–12 days. The development of the caterpillar lasts 30–50 days in northern regions and 24–34 days in the southern regions. The caterpillar goes through six instars. They pupate at a depth of 5–10 cm in the soil. The pupal stage lasts 14–30 days. This pest produces 1 to 3 generations per year.[5]



**1-rasm. Cabbage moths (MAMESTRA BRASSICAE L.)**

The polyphagous larvae of the cabbage moth damage various cruciferous plants, including cabbage, as well as sugar beet, pea, tobacco, sunflower, sesame, soybean, potato, tomato, legumes, maize, and others. The caterpillars chew circular holes in the leaves. In cabbage plants, the older larvae penetrate into the cabbage head.

The cabbage moth is considered a harmful pest, feeding on and damaging both wild and cultivated plants belonging to various families. The crops it most commonly damages include cotton, cabbage, maize, many legumes, as well as pumpkin, peanut, and others. In addition, it can also damage flowers such as roses, chrysanthemums, and others. This pest harms the reproductive organs of plants, causing a sharp decrease in yield.[5]

**In this scientific research**, observation, experimentation, comparison, and other methods commonly used in zoology, general entomology, and agricultural entomology were applied. In



applying protective measures against pests, the methods of Sh.T. Khojayeov (2004) were used. The biological effectiveness of the preparations used against cabbage aphids was calculated based on Abbott's (1925) formula. [1].



**2-rasm. Damage caused by the cabbage moth (*Mamestra brassicae* L.).  
(Original photo dated 02/07/2025)**

**Research Results.** Ichneumonids (Ichneumonidae) are a family of parasitic insects belonging to the order Hymenoptera, and they include several entomophagous species. One of these is *Amblyteles armatorius*, an entomophagous parasitoid of the cabbage moth. In 1771, Johann Reinhold Forster discovered that this species parasitizes moth larvae.

*Amblyteles armatorius* reaches a length of approximately 9 mm. The head and thorax of the adults are black. The abdomen is yellow and, in females, more oval-shaped, with broad black bands. The legs are yellow, except for the hind legs, which are black and yellow. The female has a very short ovipositor that does not extend beyond the abdomen. Adults typically feed on flower nectar and pollen in summer. They overwinter in the imago stage. The females of this parasitic wasp lay their eggs on the caterpillars of moths. The larvae that hatch from the eggs parasitize mainly members of the families Noctuidae and Notodontidae. [1]

**Discussion and Conclusions.** The cabbage moth is considered a polyphagous pest and can damage several types of crops besides cabbage. The damage caused by this pest can be clearly observed on cabbage during the summer and autumn months. The larvae of the moth feed on cabbage leaves and cause serious harm to the yield.

In controlling moths, their natural entomophagous enemies play an important role, because protecting cabbage from pests through natural methods is directly related to the health of the people who consume it. Above, information was provided about *Amblyteles armatorius*, one of the entomophagous species of the cabbage moth, and this entomophagous insect is considered a parasitoid of moth larvae. In addition to this, the use of several chemical control methods can also give good results.

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