DAMAGE AND CONTROL MEASURES OF THE NUTWORM (SARROTHRIPUS MUSCULANA ERSCH)

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Annotation: The nutworm (Sarrothripus musculana Ersch.) Belongs to the family of "shuttle makers" (Cymbidae). Widely distributed in Uzbekistan and is of great negative economic importance. The damage of fruits it reaches 40-50%, and in some areas 80% or more. The nuts damaged by the first-generation caterpillars completely fall off, the second-generation caterpillars feed on the pericarp, while 2-3 caterpillars can feed on one nut. Fruits have dark spots on the pericarp. In addition, in lean years, the caterpillars feed on the core of the shoots, which leads to their drying out.

Аннотация: Ореховая плодожорка (*Sarrothripus musculana* Ersch.) относится к семейству (*Cymbidae*). Широко распространена в Узбекистане и имеет большое отрицательное хозяйственное значение. Повреждаемость плодов ею достигает 40-50%, а в отдельных районах 80% и более. Поврежденные гусеницами первого поколения орехи полностью опадают, гусеницы второго поколения питаются околоплодником. Плоды имеют тёмные пятна на околоплоднике. Для борьбы с ореховой плодожоркой использует метод очистки отставшей коры деревьев, уборка засохших ветвей.

Аннотация: Ёнғоқ мевахўри (*Sarrothripus musculana* Ersch.) *Cymbidae* оиласига мансуб. Ўзбекистонда кенг тарқалган ва катта салбий таъсир кўрсатади. Зараркунанда таъсирида ёнғоқ меваларнинг зарарланиши 40-50% ни, алоҳида туманларда 80% ни ташкил этади. Биринчи авлод қуртлари билан зарарланган ёнғоқ барглари бутунлай тўкилади. Иккинчи авлод қуртлари эса ёнғоқ мевасининг мағзи билан озиқланади. Ёнғоқ меваси мағзи атрофида тўқ доғлар пайда бўлади. Ёнғоқ мевахўрига қарши курашиш учун дарахт пўсти қолдиқларидан ва қуриган шохларидан тозалаш. усуллари мақсадга мувофиқ.

Key words: walnut, nutworm, damageability, pest, worm

Ключевые слова: Грек ёнғоғи, ёнғоқ мевахўри, зарарланиш, зараркунанда, қурт

Калит сўзлар: Грецкий орех, ореховая плодожорка, повреждаемость, вредитель, гусеница

The expansion of economic independence of the state, the further deepening of economic transformations in all sectors of the economy at the present stage prioritize the problem of forming a sustainable fruit and vegetable market, the hallmark of which is: constant updating and improving the quality of incoming products, replenishing the product mix, meeting consumer demand, and increasing competition.

A variety of insects that cause damage to trees and crops are noted as pests of nut plantations in Uzbekistan. Some live in the soil and damage the root system, others live inside the trunk and branches, on the leaves and generative organs, destroying them.

Favorable natural and climatic conditions of Uzbekistan make it possible to increase the growth rates of fruits and vegetables annually, ensuring food security for a number of fruits and vegetables and expanding the possibility of their supplies both to foreign and neighboring countries, which creates prerequisites for the growth of real incomes of agricultural producers.

The walnut *(Juglans regia* L.*)* is widespread in Uzbekistan. They can be found in the mountainous and foothill regions of Uzbekistan. Nut plantations are grown in special nurseries and give a high yield.

Since walnuts contain essential oils, they do not have very many pests. As pests of nut plantations in Uzbekistan, insects have been noted that cause damage to trees and crops. Some live in the soil and damage the root system, others live inside the trunk and branches, on the leaves and generative organs, destroying them. One of them is the nut moth *(Sarrothripus musculana* Ersch.*)* Andthenutaphid (*Chromaphis juglandicola* Kalt.).

The nut moth (Sarrothripus musculana Ersch.) Belongs to the family of “shuttle makers” (Cymbidae). Widely distributed in Uzbekistan and is of great negative economic importance. The damage of fruits it reaches 40-50%, and in some areas 80% or more. The nuts damaged by the first-generation caterpillars completely fall off, the second-generation caterpillars feed on the pericarp, while 2-3 caterpillars can feed on one nut [1, p.45-47]. Fruits have dark spots on the pericarp. In addition, in lean years, the caterpillars feed on the core of the shoots, which leads to their drying out.

Moths winters in the caterpillar stage in cocoons on the trunk of the forage tree, in cracks, hollows, often in clusters. In April, the caterpillars pupate and at the end of the month the flight of butterflies begins. In the second half of May, the eggs of the female are laid on the fruits one by one, less often two, in the places of contact of the fruits. The fecundity of the female is 250-300 eggs. After 10-12 days, the caterpillars that feed on the nut core hatch from the eggs. Caterpillars of the first generation eat 20-30 days,then they pupate in the fruit, on the trunk and branches, in the grass under the canopy of the trees. The pupal stage lasts 12–15 days, butterflies are observed in the second half of July. In mid-July, the first second-generation caterpillars emerge, which feed exclusively on the near-horn. At the end of August-September, when the nuts are ripening, the caterpillars in the mass go to wintering in the cracks and hollows, weave cocoons under the loose bark and hibernate in them. Thus, the nut moth of the year develops in two generations.

There are enotomophages of the nutworm moth in nature, but the biological control of this pest is complicated by the fact that for almost the entire period of its development it is inside the fruit or in the bark of the fruit, feeding exclusively on their pulp, that is, it does not contact with the surface. The main entomophages of the nut moth (*Sarrothripus musculana* Ersch.) Are: dragonflies, flies, praying mantises as well as braconids and ihneumonids [2, p.551]. When conducting research in the conditions of the Tashkent, Fergana and Andizhan regions in 2017-2018, it was established that the damage to the fruit of the walnut moth was between 9 and 17%.

In the fight against the nut moth, we recommend using Avaunt 15% suspension. 0.35 l/ha. When conducting research revealed effectiveness in the fight against this pest. To combat the nut mothworm, it uses the method of cleaning the backward bark of trees, cleaning dried branches. During the growing season, the first generation of the pest is exterminated, pupating in fruits that have fallen from the trees, in the grass, under the canopy of the trees by loosening the near-ground surface of the soil.

Based on the above, it can be concluded that the damage of a walnut to the attack of various pests that damage its organs and fruits. The method proposed by us makes it possible to effectively combat them.

Table №1

Damage to walnut with nut moth (2017-2018).

	Location of experiments	**Number of trees/pcs**	**Dates of research**	**Average tree damage %**
	Andijan region, Altynkulsky district	12	27.08.2018	14.3 ± 2.5
	Fergana region, Baghdad and Uchkuprik districts	23	13.092017	16.7 ± 3.3
	Tashkent region, Urtachirchik district	16	09.09.2017	8.7 ± 1.1

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