

**STUDYING THE EFFECTIVENESS OF THE DRUG MATRIN BIO 0.5% V.R. IN THE
FIGHT AGAINST ONION FLY AND THRIPS ON ONIONS**

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Abstract: The dangerous pest Matrin Bio 0.5% w.r. proved to be an effective remedy in the fight against onion fly and thrips at a rate of 1.0-1.5 l/ha on onions. At the specified rate of consumption, the preparation Matrin Bio 0.5% w.r. does not have a toxic effect on the growth and development of plants.

INTRODUCTION

At the current stage of development of agricultural production in the Republic of Uzbekistan, increasing the yield of agricultural crops, including onions , is very important.

However, onions , like many agricultural crops, are susceptible to infestation by many harmful insects, the most dangerous of which are the onion fly and thrips , etc.

Several methods of control are used against them. But it should be noted that the most effective is the chemical method, although it has a number of disadvantages. In order to minimize its negative consequences, a competent approach is necessary. One way to solve this problem is to select the most effective, less toxic and fast-acting drugs. One of such important factors is the fight against harmful insects of agricultural crops. Pests common in cabbage crops cause great damage to plant development and, as a result, lead to a decrease in the onion yield .

In the fight against this pest , chemical plant protection products continue to be used in conjunction with agronomic and biological means, but the known shortcomings of these insecticides force local specialists and scientists to continue developing, selecting and introducing new highly effective products that best meet modern environmental requirements.

The expansion of the range of insecticides is also dictated by the need to overcome resistance developing in specific pest populations with long-term use of the same preparations, as well as to reduce the costs of treating onion crops .

The aim of this work in accordance with the work program was to assess preparation Matrine Bio 0.5% w.r. against onion fly and thrips on onions .

To achieve the set goal, the biological effectiveness of this preparation in the fight against the specified pests on onion crops in the conditions of the Tashkent region was studied in a large-plot experiment.

LITERATURE REVIEW

Onion fly (*Delia antiqua*) – a type of flower fly, a widespread agricultural pest: it damages onions, garlic and bulbous flower crops.

Body length is 5-7 mm, according to other sources - up to 8 mm. Coloration is ash-gray or yellowish-gray , back with a greenish tint; legs are black, wings are transparent . Larvae are white, smooth, worm-like, up to 10 mm long .

Imagoes appear in May-June . Adults are active mainly at dusk and dawn . The female lays eggs (up to 60, according to other sources up to 200) on onion feathers, bulbs and the soil near the plants . The eggs are white, oblong, with a longitudinal groove . After 3-8 days, larvae appear, which gnaw into the flesh of the bulb (usually from the bottom). The larva pupates in the soil and overwinters in a false cocoon, at a depth of 5-20 cm . Depending on the conditions, there can be from one to three generations per year .

It is widely distributed in Europe, Asia and North America . In Russia it is found everywhere where onions are grown . In Central Asia it can rise to a height of 3600 m .

In nature, onion flies feed on various species of liliaceae and irises. In culture, they damage onions, garlic, lettuce, tulips, and lilies. Damaged bulbs become soft, rot, and emit an unpleasant odor; lettuce leaves turn yellow and wither.

As preventive and control measures, it is recommended to plant onions early, mulch the soil with peat, use repellents and pesticides, destroy infected plants, and dig up the beds in the fall to destroy the pupae .

Thrips (*Thrips tabaci*) - A significant sucking pest of onions is the tobacco thrips (*Thrips tabaci*) intensively developing on plants growing in dry places. Onion thrips cause harm in the spring, thereby causing great harm to young plants (Alimukhamedov R.A., Khodjaev Sh.T., 1991).

The adult tobacco thrips overwinter on the surface of the earth under fallen leaves and plant debris. In March, the thrips develop on weeds, then move on to cotton. The lifespan of the female is about one month; during this period, it lays 100 eggs in plant tissue.

In three to four days, a larva emerges from the eggs and begins to feed, mainly along the veins. After molting four times, the larva becomes an adult. In a season, in the conditions of our Republic, thrips produces 7-10 generations.

Larvae and adult thrips suck the juice from the leaves, also damage the petals, forming ovaries. They greatly reduce the chlorophyll content in the leaves, double the evaporation of moisture from the plant, causing a large deficit of it. With a high number, its leaf simply dries up. Most of the thrips are on the formed leaves, single specimens on young and aging ones.

According to V.V. Yakhontov (1963), damage by thrips on cotton is especially noticeable in the late period, when yields are noticeably reduced.

An integrated approach to combating it, the use of promising chemical preparations, is also important .

TEST RESULTS

Experiments on testing the drug Matrin Bio 0.5% w.r. conducted f/h. im. " Toshmatov ", Pakhtaobod region, Andijan region in early July 2025 during the onion growing season. Results of studies on the biological effectiveness of the drug Matrin Bio 0.5% w.r. against onion fly and thrips at a consumption rate of 1.0-1.5 l/ha are given in the table. From which it is clear that at a consumption rate of 1.0-1.5 l/ha on the 14th day after treatment, the biological efficiency

- against onion fly on onions was 86.8-89.4%. Which was higher than the reference (90.5 %) option (Table 1);

- against thrips on onions was 85.2-88.8%. Which was higher than the reference (92.0 %) option (Table 2);

Under control, the number of pests steadily increased.

Thus, the results of the study show that the drug Matrin Bio 0.5% v.r. at a rate of 1.0-1.5 l/ha against onion fly and thrips can be used on onions.

CONCLUSIONS AND FINDINGS

Matrin Bio 0.5% w.r. proved to be an effective remedy in the fight against onion fly and thrips at a rate of 1.0-1.5 l/ha on onions.

At the specified consumption rate, the drug Matrin Bio 0.5% w.r. does not have a toxic effect on the growth and development of plants.

Based on the results of the production field test, we believe that it is necessary to include 0.5% w.r. of the Matrin Bio preparation against onion fly and thrips at a rate of 1.0-1.5 l/ha on onions.

Table -1

Biological efficiency of the drug Matrin Bio 0.5% w.r. against onion fly on onions.
(Andijan region, Pakhtaobod district, farm named after “ Toshmatov ”, large-scale experiment,
Motor, sprayer, working fluid consumption 300 l/ha, 07.05.2025)

No .	Options	Consumption rates of preparations, kg. l/ha	Average number of pests per plant.				Efficiency, % per days				
			Before processing	After processing days				3	7	14	21
				3	7	14	21				
1	Matrine Bio 0.5% w.r.	1.0	2.5	1,8	1,2	0,6	1.5	46,9	64,6	86,8	72.4
2	Matrine Bio 0.5% w.r.	1.5	2.6	1,6	1,1	0.5	1,2	54,6	73,6	89.4	74.6
3	IM-LA-TIAM Super 27.5% with . p . (reference)	0.25	2.9	1.7	0.9	0.5	1,1	56.8	80.6	90.5	82.5
4	Control (without processing)	-	2.8	3.8	4.5	5,1	6,1	-	-	-	-

Table - 2

Biological efficiency of the drug Matrin Bio 0.5% w.r. against thrips on onions.
(Andijan region, Pakhtaobod district, farm named after “ Toshmatov ”, large-scale experiment,
Motor, sprayer, working fluid consumption 300 l/ha, 07.05.2025)

No .	Options	Consumption rates of preparations, kg. l/ha	Average number of pests per plant.					Efficiency, % per days			
			Before processing	After processing days				3	7	14	21
				3	7	14	21				
1	Matrine Bio 0.5% w.r.	1.0	18.2	9.1	7.3	4.6	7.5	56.7	66.2	85.2	77.9
2	Matrine Bio 0.5% w.r.	1.5	17.8	8.4	6.3	3.4	6.3	59.1	70.2	88.8	81.0
3	Movento Energy 24% hp (reference)	0.6	21.4	7.3	5.4	2.9	6.2	70.4	78.7	92.0	84.4
4	Control (without processing)	-	20.6	23.8	24.5	35.2	38.5	-	-	-	-

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