

## COLORADO BEETLE (*LEPTINOTARSA DECEMLINEATA* SAY.) AND MEASURES TO CONTROL IT

Omonova Sevara Akramjonovna

Fergana State University

**Annotation:** Potato is a crop used for various purposes. It ranks alongside the main agricultural crops in world agriculture. Potato is an agricultural crop of food, fodder and technical importance. Due to the high nutritional qualities of potato, it has become the most consumed food product in many countries after bread. That is why potatoes are called "second bread".

**Keywords:** Greenhouses, especially, Colorado beetle.

Potatoes are a plant with endless possibilities in terms of productivity. One bush can collect 1-2 kg and more. In some countries, its average yield is 35-40 tons. Some of our farmers in Uzbek farms are harvesting up to 40-45 tons of potatoes per hectare

Taking this into account, vegetable growers are struggling to get high-quality products. The construction of many greenhouses, especially around large cities, increases the possibility of providing the growing population with vitamin-rich wet vegetables even in winter.

However, despite the fact that many constructions of greenhouses are aimed at growing wet vegetable crops, favorable conditions are created for the reproduction and wintering of many pests and diseases in these greenhouses. As a result, these pests and diseases spread to vegetable, potato and potato crops around the greenhouse in early spring, causing a 30-35% decrease in productivity. Diseases and pests reduce the total yield of potatoes by 30-35%, which is more than 100 million tons worldwide. Humanity loses 23.8 million people every year due to pests alone. tons - as the potato yield is low.

Protection from pests, diseases and weeds is one of the main factors in obtaining good yields from agricultural crops and maintaining the crops grown.

One of the main problems of the seed industry in the cultivation of a plentiful harvest of potatoes in Uzbekistan is the development of measures against viral diseases of the crop. Because viral diseases reduce productivity by an average of 30% or more. In addition, the vegetative reproduction of potatoes (with tubers) creates an opportunity for the transmission of viral diseases from generation to generation, and their damage increases year by year.

The Colorado potato beetle (*Leptinotarsa decemlineata* Say.) is the most dangerous pest of potatoes.

can kill up to 50% of crops. Its homeland is the US state of Colorado in North America. Since the beginning of the 20th century, it has spread in European countries (found in France in 1922), and later in Eastern Europe, Ukraine, and Belarus. It first came to Uzbekistan from Belarus with seed potatoes to Bostanliq and Sokh districts (1972). In the conditions of our country, the Colorado beetle reproduces 3-4 times, depending on weather conditions, until late autumn.

The Colorado beetle is an insect belonging to the beetle family of the family of leaf-eaters, a very dangerous plant pest. His body is his own. 9 - 12 mm, shoulder and upper wing yellow or yellowish red, with 12-14 black spots on the front shoulder, 5 black lines passing over the wing. The size of the egg is 1.2-1.8 mm, the worm is long. 15-16 mm, pinkish-red, cone 10-12 mm. K.q. hibernates in the soil (20-50 cm deep) during the beetle period, emerges from hibernation in April

and feeds on plants. Female beetles lay eggs in groups of 12-80 on the back of plant leaves, on plant debris. One female beetle lays 500-800, sometimes up to 2400 eggs. The development of eggs takes 3-5 days, and that of the tuber takes 6-9 days. Hatched worms feed on plant leaves for about 20 days and pupate in the soil. After 1-2 weeks, young beetles appear, feed on leaves and lay eggs again.

The Colorado potato beetle damages potatoes, tomatoes, eggplants, tobacco, peppers, young poplars, and various vine-like plants. On average, 20-40 worms and beetles in one bush of potatoes eat half of the leaves of the plant and reduce the yield by 2-3 times. The yield of plants whose leaves are completely eaten can decrease up to 10 times. Currently, if it is not prevented and effective control is not carried out, it causes great damage to potato crops.

The following control measures are effective against the Colorado potato beetle:

1. Agrotechnical control: crop rotation, tillage, watering in winter and planting potatoes on time, taking good care of the crop, as much as possible, picking and destroying Colorado beetles and eggs laid on the back of potato leaves in potato plants growing day or night.

2. Biological method: use of padizus and perillus and golden eyes (against eggs and young larvae). In the territory of our country, in recent years, with the widespread spread of the Colorado potato beetle, which was previously considered a dangerous quarantine pest, its natural enemies, predators and scavengers are also increasing. In particular, the beetles belonging to the coccinellidae family are widespread in our conditions, and the beetle mainly feeds on the eggs of the Colorado beetle. Especially the seven-point khan girl is more effective.

In our conditions, the common goldeneye and its larvae live among the eggs and 1-2-year-old larvae of the Colorado beetle, and the adult larvae of the goldeneye feed on the larvae of the Colorado beetle. In addition to these, many carnivorous beetles also feed on the eggs laid by the Colorado beetle, especially the black orius, which is a highly efficient entomophagus.

Perillus is the most effective of the entomophages currently used against the Colorado beetle. It hibernates in the hollows of trees under spilled beds, under the remains of potato stalks, and as soon as the potatoes germinate, it leaves the village and fertilizes. One female perillus lays up to 150 eggs on average. the colorado beetle lays eggs in the scattered places. Perilus larvae feed on eggs and 1-2-year-old larvae of the Colorado beetle.

In our conditions, the podizus kandal, which is widespread, lives by eating the larvae of the Colorado beetle. Podizus can give 5 - 6 generations in our conditions.

Chemical method: Regent, 4% em.k-0.25 l/ha, karate, 5% em.k-0.1 l/ha, mospilan 20% n.k-0.02-0.025l/ha, adonis, 4 Spraying at the rate of % em.k-0.25 l/ha, 2.5% Detsis-0.15 l/ha, 5% confidor - 0.05 l/ha gives a good effect.

Seed potatoes are planted in June-July - late and mid-ripening varieties are planted earlier, and early varieties are planted later. When the soil is ripe, seed potatoes are planted to a depth of 10-12 cm. It is advisable to plant the seeds on the side of the garden where the sun does not fall. Potato care agrotechnical measures should be aimed at reducing soil temperature. All of this will be a good basis for growing an abundant and high-quality harvest. It is important to prevent the spread of various pests and diseases in order to get a good harvest from potato crops.

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