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COLORADO BEETLE (LEPTINOTARSA DECEMLINEATA) PEST OF POTATO

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Abstract: The main food plant is potatoes, but it can feed on eggplants, tomatoes and wild nightshade plants. Belongs to the order of beetles or beetles (Coleoptera), the family of leaf beetles (Chrysomelidae).

Keywords: Potato agrocenzen, Colorado beetle, popolate, imago, eggs, etc., larvae.

Introduction

Adult beetles are short-oval, convex in shape. Pronotum and elytra yellowish or yellowish-red. Pronotum has 12-14 black spots, of which the middle is in the form of a Roman numeral V. 5 narrow stripes run along each elytra. The base of the elytra is bordered by a narrow rim. The beetle is 7-12 mm long, 4.5-8 mm wide. The egg is oblong-oval, light orange, 1.1-1.8 mm long, 0.8 mm wide, first yellow, then orange. The larvae of the first instar are dark gray, 1.5-2.4 mm long, the second - red, 2.5-4.5 mm long, the third - reddish-orange-yellowish, 9.1-16 mm long. The head, sides of the body and legs of the larvae of all ages are black, the shape is convex, the abdomen is wider than the chest, pointed at the end; pronotum with black transverse spot; abdominal sides with two black spots on each segment.

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Fig. 1. Colorado potato beetle eggs

Beetles overwinter in the soil of the fields where it reproduced and fed, at a depth of 20-70 cm. Beetles start overwintering when the soil temperature becomes 12-160 C. Beetles come to the surface and feed on plants. after increased feeding, mating and oviposition begins, usually one month after the beetles emerge. After mating, the females lay eggs on the underside of the leaves and are arranged in heaps (25-30 pcs.). One female lays an average of 400-700 eggs, some individuals - up to 2400 eggs. After 5-17 days, larvae emerge from the eggs, which begin to greedily eat the leaves of the plants. They do the main harm to plants. The larvae begin feeding on leaves immediately after hatching. The larvae of young instars gnaw holes on the upper leaves, and the older instars eat the leaves from the edges, and later eat the petioles and stems. The caterpillar stage lasts 16-34 days and goes through 4 instars. Adult larvae go into the soil to a depth of 5-18 cm, pupate there and turn into beetles after 10-24 days. In July-August, beetles of the summer generation appear. This is the second generation of beetles, which can lay eggs again in 15-20 days. It takes 30-70 days for one generation to develop.

There are 3 generations in the conditions of Uzbekistan. Adult beetles live 12-14 months; on warm days they can fly up to 10 km. Beetles and larvae roughly eat leaves. With an average number of 20-40 larvae and beetles per bush in the field, in most plants the leaves are destroyed by half, in some places almost completely. In tomato, the larvae prefer to eat

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the stems, sometimes gnawing them so hard that the latter break off under the weight of the fruit. The larvae do not disdain fruits either.

Fig. 2. Colorado beetle (*Leptinotarsa decemlineata*)

Control measures: There are various ways to control the Colorado potato beetle. It is always important to detect pest foci in a timely manner. You can collect and destroy beetles and larvae, especially when the plants have not yet grown. Early detection and destruction of egg-laying is effective. They also use a bait method to combat adult beetles. This is done in early spring, before the seedlings are planted, when the beetles came out of wintering, spreading the skin of the tubers or small substandard tubers along the edges of the field. Beetles gather on these baits, which together with the bait are collected and destroyed. These methods of control are successful if there are few pests. Otherwise, planting nightshade crops is treated with biological and chemical preparations.

The economic threshold of harmfulness is the presence of 2-3 larvae per plant together with adults or in case of damage of 20% or more of crops. Of the chemical agents for fighting the Colorado potato beetle on nightshade vegetables, it is recommended to use the following drugs: Fosalon, Chloratraniliprol, Cypermethrin, Esfenvalerat, Lufenuron, Fipronil, Zeta-cypermethrin, Lambda-cyhalothrin and other approved drugs. The first treatment is carried

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out during the period of mass release of overwintered beetles, the second time - when larvae appear.

Conclusion

On eggplant, it is necessary to fight against overwintered beetles when no more than 1% of plants are populated. Tomato is less favorable for the nutrition and development of the Colorado potato beetle than eggplant and potatoes; larvae are fought on it. The economic threshold of harmfulness on tomato approaches 10% of the infested plants, if the number of larvae on each plant exceeds more than four individuals.

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