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Pests of potatoes during storage

Author(s): Растителна защита
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Pests

Potato tuber moth – *Phthorimaea operculella Zell*

Damage

The tubers become infected in the field when larvae hatch from eggs laid on the leaves. Eggs that fall onto the soil surface very quickly reach the tubers through cracks or enter the tubers through the dried stems. The moths lay eggs directly on the tubers protruding from the soil, and in potato stores the females lay eggs on the tubers. The caterpillar bores around the eyes of the tubers and feeds on the fleshy part beneath the skin, forming tunnels of varying length and 2 to 5 mm in width, above which the tuber epidermis sinks and forms a groove. In

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some cases, the caterpillar bores into the interior of the tubers, and during feeding forms tunnels filled with brown excreta and webbing mixed with small potato particles. In heavily infested tubers there are tunnels filled with excreta, on which various microorganisms develop and completely destroy the tubers.

Development

The moth attacks potato tubers in the period from “foliage wilting” until harvest, as well as during storage in potato stores.

Control

Agronomic measures in the control of the potato tuber moth include:

Timely harvesting of the crop and destruction of plant residues.

Treating the foliage with a contact plant protection product with a short pre-harvest interval before potato haulm destruction.

Carrying out the treatment in the evening.

Immediately moving the tubers into storage facilities after harvest, without allowing them to remain in the field overnight.

Destruction of tubers with visible damage.

Maintaining the temperature in the storage facilities below 9 °C, since the moth does not lay eggs below this temperature.

Separate storage of seed potatoes from those intended for consumption.

Diseases during storage of potatoes in potato stores

Dry rot - *genus Fusarium*

Soft rot - *genus Erwinia*

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Symptoms

Dry rot of potatoes appears during their storage. The disease starts with dark, dry spots on the tuber, which enlarge until they cover it. They become sunken and the skin above them wrinkles due to the shrinking of the affected tissues. Later, a fungal mycelial growth of various colours – whitish, yellowish, light brown, pink – appears on the surface of the affected parts. If you cut an infected potato, you will see that the tissues beneath the spot are brown. The infection spreads from diseased to adjacent healthy tubers.

Soft rot of potatoes is a bacterial disease caused by bacteria of the genus *Erwinia.* The disease most often appears during potato storage and is manifested by rotting of the tubers, with the rotten part being soft and sharply demarcated from the healthy tissue. The rotting progresses rapidly, within about 10 days, turning the tuber into a slimy mass with an unpleasant odour.

Control

During storage, tubers should be periodically inspected and those affected by dry and soft rot, as well as those attacked by potato tuber moth larvae, should be removed.

Only well-matured tubers with healthy skin, without mechanical damage and injuries, free from fungal and bacterial diseases and pests, and well dried, without excess moisture, should be stored.

The storage facilities should be thoroughly cleaned in advance of old potatoes and

disinfected.

Seed potato tubers are stored for 6 to 9 months, and those for consumption and fodder until the time of their use.

Optimal storage conditions: temperature 2-4ºC and relative

humidity 90%, as well as provision of good ventilation.

Disinfection may be carried out with a solution of 1 part 40% formalin to 40 parts water or a 3% solution of copper sulphate.