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# «METHODS OF ACCOUNTING FOR PESTS AND DISEASES» (МЕТОДИ ОБЛІКУ ШКІДНИКІВ ТА ХВОРОБ)

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Дана стаття присвячена вивченню методів обліку шкідників та хвороб сільськогоспододарських культур.

*Ключові слова:* шкідники, хвороба рослин, методи обліку, економічний поріг шкідливості.

This article is devoted to the study of methods of accounting for pests and diseases of agricultural crops.

Key words: pests, plant disease, accounting methods, economic threshold of harmfulness.

Existing methods of detection and accounting of pests and diseases can be divided into visual and instrumental. Visual methods are based on direct examination and calculations of pests and plant organs affected by them, the intensity of their disease. Technically, they can be route or detailed, depending on which plant organs are damaged by the pest or disease.

Route surveys are mainly used to visually identify the population of a field by a pest, the disease of plants or to establish their territorial or stationary location. At the same time, the number of pests and diseased plants is not always counted in the field or other land, but only their presence is noted. Route surveys are carried out on at least 10% of the area, where the density of pests and the incidence of plant diseases are determined.

Specialists of signaling and forecasting points carry out detailed records on the trial areas of the fields selected for this purpose systematically during the vegetation of plants at least every 10 days. They monitor the phenology of pests, seasonal dynamics of their density, the degree of disease damage to plants and determine the timing of harmful phases and give signals to farms about the feasibility of surveys and protective measures on industrial crops.

During the detailed accounting, the density of the pest and the degree of damage to plants, the number of plants affected by the disease, and the intensity of its development, the feasibility and methods of certain protection measures are determined.

The method of soil excavations also determines pests that overwinter in the soil and damage the root system of perennial crops (hop gardens, orchards, vineyards). In orchards, the number of wintering caterpillars of fruit eaters, sawfly cocoons, pupae pupae, etc. is determined in the soil. Accounting plots (1 sq. M) are placed near tree trunks, the soil is viewed to a depth of 20 cm, and sometimes deeper.

The economic threshold of harmfulness is such density of a wrecker or damage of plants at which losses of a crop can make 3-5%, and application of chemical means of protection raises profitability of production of culture and prime cost of a crop.

On plants, pests and diseases are detected by inspection of a certain number of plants in samples or on accounting plots.

On row crops (corn, sunflower, beets, potatoes, vegetables, etc.) in a field of up to 100 hectares inspect 100 plants - 5 in 20 places or in two adjacent rows in 10 places. With a larger area for every next 100 hectares, an additional 50 plants are inspected, and with a low density of pests or weak damage to plants - up to 200 plants in 20 places.

On crops of ordinary row sowing (cereals, fodder grasses, etc.) pests are counted on equidistant plots of 0.25 sq. M. m (50x50 cm), placed on a 2-line, diagonals of the field, in a checkerboard pattern or on segments of 0.5 m each. In a field with an area of up to 100 ha, 16

accounting plots or segments of a row are allocated, on which the total and damaged number of plants or stems, as well as the population of pests are counted. When accounting for diseases determine the prevalence, intensity or degree of damage and development of the disease.

Modified radar equipment has been developed and can be used to determine the directions of insect migration and their density in the air. According to research conducted in England, with the help of radar, some large species of insects can be detected at a distance of 1.5 km, and their clusters - up to 72 km, and as small as aphids - at a distance of 207 m.

In recent years, methods of aerial visual surveys, aerial photography, and methods of using space imagery from artificial earth satellites have been developed to quickly detect colonization and damage to crops by pests or disease.

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Having set the amount of crop losses per individual pest, score or degree of disease, you can calculate, respectively, and the threshold density at which economic losses are possible. But this is not a criterion for the feasibility of chemical treatments, as the cost of them may exceed the cost of the stored crop (possible costs). Therefore, the threshold density of the pest is always less than the economic threshold of harmfulness.

The economic threshold of harm can be established by empirical calculations. To do this, deduct the cost of crop losses from one pest and the cost of chemical treatments per hectare of crop, as well as the rate of return on crops.

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