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TO IDENTIFY THE METHOD OF SPREADING WAYS OF BEETROOP DISEASES

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Annotation
It is necessary to pay special attention to the methods of obtaining an account of the diseases of beetroot spotting, false powdery mildew, cercosporosis and phomosis. In this, the development of the disease in each plant member was taken into account, and their results are calculated based on the following formulas. Their count was taken when the development of the diseases that produced spots and dust was at its maximum. In this case, the spread and development of the disease in each plant member was calculated separately.

Keywords: Disease, plant, crop, vegetation period, formula, pathogen. level, durability, spotting, fogging, solution atmosphere.

Introduction

The percentage expression of the infected amount of beets in a certain area is called the spread of the disease, and it was found based on the following formula:

$$R = \frac{n \times 100}{N}, \quad \text{in this} \quad (1)$$

R – spread of disease, %;
N – total number of plants counted;
n – the number of diseased plants in the sample.
The distribution of the disease on the farm was determined using the following formula:

$$Py = \frac{\Sigma S \times P}{S}, \quad \text{in this} \quad (2)$$

P_y – spread of the disease on the farm, %;
$\Sigma S \times P$ – the area of the observed field is the sum of the percentages of disease prevalence in each field;
S – the total area of the observed field.

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Aim of the Research:

To identify the method of spreading ways of beetroop diseases. The degree of damage to diseased plants was determined on a 5-point scale or percentage. The development of beet diseases was found using the following formula:

$$R = \frac{\Sigma(a \times b)}{N}, \quad \text{in this} \quad (3)$$

R – average disease rate, %;

Σ(a×b) the sum of the number of plants multiplied by (a) the expression of the disease in points or percentages corresponding to them (v);

N – number of diseased plants.

In order to reduce the spread and development of the disease to a single indicator, we determined the disease index according to the following empirical formula:

$K_i = T \bullet P/100$, in this (4)

K_i – disease index;

T – spread of disease, %;

P – disease development, %.

group of resistant varieties (K_i = 0,1-2,0),

relatively resistant (K_i = 2,1-10,0),

moderately unbearable (K_i = 10,1-20,0),

unbearable (K_i = 20,1-30,0),

a group of extremely hardy varieties (K_i = >30,0).

Methods of Investigation

The method of accounting for beet spotting, powdery mildew, cercosporosis and phomeosis diseases.

Bushes from 10 plants unique to each field were examined. The development of the disease in each plant member was taken into account and their results were calculated based on formulas (1) and (3).

Their count was taken when the development of the diseases that produced spots and dust was at its maximum. In this case, the spread and development of the disease in each plant member was calculated separately.Sohta un-shudring kasalligini rivojlanishi ballar asosida quyidagi shkala bo'yicha hisoblandi:

0 – healthy plant;

1– there were very few signs of the disease in the branches;

2– ¼ of the branches are covered with the mycelium of the disease-causing fungus;

3 – 50% of the branches are covered with mycelium and spores of the disease-causing fungus;

4 – the branches are completely covered with fungal mycelium and spores, and the ends are beginning to dry.

The development of pigmentation and phamosis was taken into account in the scores based on the following scale:

0 – healthy plant;

1 – the plant is weakly infected;

2 – the plant is moderately infected, severe damage to its organs was not observed;

3 – the plant is moderately infected, some parts are severely damaged;

4 – the plant itself and its parts were severely damaged, some of them died.

The development of beet cercosporosis disease expression in points was calculated according to the following scale:

0–plant is healthy;

1–has few spots, no ulcers;

2 - there are many spots, there are no or very few ulcers;

3 – there are many large spots, in some cases they are combined, they have ulcers;

4 – the leaves are dry;

Method of isolating fungal species from the tissues of diseased plants.

For this, the examined plant parts were cleaned of microorganisms, that is, their outer part was sterilized. The examined plant part was immersed in 0.5-1% sodium hypochlorite (NaOCl) solution for 30 seconds or held for several seconds in 96% ethyl alcohol solution. It was then rinsed thoroughly in sterile water and rinsed once more in sterile water in another container. Also, 0.5% potassium permanganate solution when sterilizing a plant organ was used. The plant part was immersed in this solution for 1 minute and then thoroughly washed with sterilized water. To isolate the fungus from plant parts sterilized by the above methods, the filter paper was placed on the moisture chamber formed in the Petri dish. For this, a filter paper was placed in a Petri dish and it was sterilized in an autoclave at a temperature of 120 °C and a pressure of 1 atmosphere for 20 minutes. Petri dishes with filter paper were moistened with sterilized water in front of an alcohol lamp flame, and using a flame-heated scalpel, the plant was cut into 1-3 cm pieces and 4-6 plants were picked per dish. Petri dishes with plant parts were placed in thermostats with a temperature of 24-26 °C and they were observed from the 3rd day. Fungal mycelia or conidia formed on the surface of the plant cuttings were inoculated onto an agar nutrient medium slant in a pre-prepared test tube. After the fungi in the test tube grew well, their type was determined.

Conclusion

In conclusion, we can say that the most correct way to prevent powdery mildew disease in beets is to strictly follow the agrotechnics of planting (planting scheme, temperature and humidity regime) and crop rotation. It is also important to plant beet varieties resistant to this disease and strictly observe the planting period. It is recommended to destroy all plant residues left in the soil and deep tillage (clogging) of the land in the fall. In addition, the application of substances that control the growth and development of seeds before planting, after the appearance of buds in the soil, and before planting in the planned area is also a positive solution to the problem.

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