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GROWING OF PEA PLANT AND FIGHTING ITS DISEASES IN THE CONDITIONS OF KASHKADARYA REGION

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Abstract
Pea is considered one of the most important crops in world agriculture among leguminous crops and is planted annually on an area of millions of hectares. Of this, the area planted with legumes is 20-25%. In terms of cultivated area, soybeans, chickpeas, green peas and lentils are being planted in the main large areas.

Keywords. Legume, fusarium, askachitosis, powdery mildew, nematode, releft, fungus, petri, pea, grain, hay, mycelium, food, thermostat.

Introduction

Pea plant - Cicer ariyetinum L., is one of the most widespread ancient crops in the world. Peas were cultivated in India in the century before Christ, and in the Middle East they were used for food preparation 7500 years ago [2,6,8]. Among leguminous grain crops, peas have the most diseases and cause significant damage to productivity [9]. Pea is an annual plant and belongs to the family of legumes (Fabaceae) and belongs to the genus Sicer. Currently, there are 27 species of chickpea, and only one, Cicer arietinum L., is cultivated as a cultivated crop. Pea grain contains 19-30% protein, 4-7% oil, 47-60% nitrogen-free extractives, 2.4-12.8% fiber, 0.2-4.0% ash, and also vitamin B, as well as minerals. there are salts (Otaboyeva et al., 2000) Peas are widely distributed mainly in India, Turkey, Canada, Pakistan, Australia, Spain, Mexico and other countries[9,11]. According to the results of the research conducted in the period of 1964-1981, the yield of peas was 7-9 s/ha in severe drought years, and the planting rate was set at 50-70 kg per hectare. The cultivated jaidari pea belongs to the Cicer L. family and includes 27 species. Of these, only one type, cultivated jaydari pea (Cicer ariyetinum L.), is the most widespread. All varieties of the species are divided into 2 groups according to their use: khoraki varieties, the grains of which are light-yellow in color, are used for food: Hashaki varieties, the grains of which are dark in color, and are mainly used for livestock fodder.

RESEARCH METHODS

In order to determine the fusarium infection of seedlings grown from seeds, healthy seedlings, diseased and withered seedlings were counted separately in 1 m2. Such sites made up 10% of the studied fields.To determine the types of diseases occurring in pea plants, the method of Khokhryakov, Polozova and Vakhrusheva (1984) was used in laboratory conditions by taking samples from infected plants from the growing period until harvesting. Samples were selected from the upper, lower and middle parts of the plant during flowering, pod bearing and ripening. Microscopes were used to isolate fungi that cause disease in plants, identify their types, study their

structure and development. Temporary or permanent preparations were prepared from the studied fungi and microphotographs were taken using a simple method of taking pictures under a microscope. A x 3 eyepiece, x 10 objective was used to accurately draw the large and small conidia of the Fusarium fungus, their shape, flexibility, formation of tip cell and foot, and x 10 or 15 eyepiece, x 20 or 40 objective was used to draw small conidia. In mycological studies, various dyes were used: methyl blue, methyl violet, and Lugol's solution to improve the appearance of fungal mycelium, conidia, cells, septa, and chlamydspores. The method of Khasanov et al., 1995 was used to isolate fungi from infected plants taken for phytopathological examination. For this purpose, the samples taken from the plant part under examination were washed for 30 seconds in sterilized water and kept for 30 seconds in the solution of surfactant tween. After that, these samples were kept in 0.5% NaCl solution to clean them from external mycoflora, and then they were washed in sterilized water for 1 minute. were discarded, and in order to isolate the fungi from them, they were planted in potato glucose agar nutrient medium, and the release of fungi was monitored from 48 hours. The emerging fungi were planted in the nutrient medium in a test tube, and monospored cultures were obtained to determine their systematic position. To isolate the fungi from the plant root, the plant root with disease symptoms was dug up and washed several times in sterilized water. It was cut into 0.5-1 cm long pieces with a sharp razor and placed in a moist chamber made of a Petri dish.

RESULTS

Diluted nutrient media or synthetic Chapek nutrient medium were used to perform the experiments. The ability of fungi to produce phytotoxins was determined and monitored after 10-15 days of cultivation in liquid nutrient medium. Before identifying the toxic substances formed in the nutrient medium where the fungus grew, they were isolated from conidia and mycelium by filtration. Biological, chemical and physical methods were used to study phytotoxins. Using chemical methods, it is possible to isolate some toxic substances and study their individual effects. However, when many toxic substances interact in nature, their biological significance is fully revealed. Therefore, the use of biological methods in the study of phytotoxins gives the correct result. In recent years, many diseases seriously damage the pea plant, as well as most other plants. This requires further improvement of plant protection measures, proper identification of disease-causing fungi, development of scientific control measures by studying their distribution, development and bioecology.

CONCLUSION

Therefore, in order to isolate pathogens, plants with symptoms of fusarium disease were selected in 2023, and fungi were isolated in laboratory conditions. For this purpose, 3-5 cm long fragments were cut from the stem with spots and washed in plain water. Then, the upper part of the fragments was sterilized in 70% ethyl alcohol solution, washed 3 times in sterile distilled water, dried in sterile filter paper, and then inoculated on potato-dextrose agar (KDA) nutrient medium supplemented with 300 mg/l streptomycin. Fungal cultures were grown at 20-24°C for 2 weeks. According to the monitoring results, it was observed that there were few diseases in the pea plant this year. This was caused by a number of factors, including the high temperature due to the lack of precipitation in April. As a result, the development of disease-causing fungi was negatively affected. There were almost no powdery mildew and ascochytosis diseases in the monitored areas.

However, in Yakkabog District, Pakhtakor MFY, on 10 hectares belonging to "Farangiz-Marjona Fruits" LLC, the Yulduz variety of peas has 7.5% root rot disease and 2.0% fusarium wilt. spread was observed. In Hisar MFY of this district, "Mukhammadiyev Gofur Bobo" f/x (10 ha) and "Begimkul Sher" LLC (12 ha), and in the Istiklal variety of chickpea, root rot disease spread up to 5.5% and fusarium 15.2% were noted. Also, in the fields of "Kamal Jaloliddin" f/x (8 ha) and "Akmal Adkham oglu" f/x (13 ha) located in J.Turdiyev MFY, Kitab district, root rot disease in Yulduz variety of peas is 6.3% to 7.8 % was observed, and fusarium was up to 14.5%.

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