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DETERMINATION OF THE AMOUNT OF CHLOROPHYLL IN SOLANUM NIGRUM PLANT LEAVES INFECTED WITH POTATO Y VIRUS AT DIFFERENT LEVELS

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ANNOTATION

In this article, potato viruses, their types, Potato Y virus (KYV) strains, their biological characteristics, disease symptoms in host plants and their specific aspects, ituzum (solanum nigrum) infected with the virus to different degrees using mechanical methods are discussed. The amount of chlorophyll pigment in the leaves of the wire, the level of study, distribution and importance of these viruses are reflected.

Keywords: Strain, necrosis, potato yellow spot virus, potato X virus, potato Y virus, potato S virus, potato T virus, pigment, chlorophyll.

INTRODUCTION

(Matthew 24:14; 28:19, 20) It is well-known that the growing need for food, which has now become one of the biggest problems facing mankind around the world, shows that potatoes have a high role as food (the second bread). This prohibits a deeper study of the plant and the creation of new varieties of potatoes and a deeper study of factors that affect its yield.

LITERATURE ANALYSIS AND METHODOLOGY

The study of these viruses is considered very important for the provision of quality food to its inhabitants today, which in turn is one of the most important issues in the development of measures to study and combat the spread of the virus in our country's climate, natural preservative plant strains. This, in turn, requires extensive scientific research in this direction. Since the years of independence in our country, much attention has been paid to measures to protect plants from various diseases and pests, and a number of laws and regulations have been adopted, including the Quarantine of Plants and a number of other laws of the Republic of Uzbekistan [1].

Potato growing is an important economic crop grown on a large scale around the world. According to data from recent years, more than 50 viruses have been found to infect potato plants today, their name is derived from various Latin letters: X, S, M (K), A, Y, F (G), L, yellow purity virus of potatoes (Potato yellow dwart nucleorhabdovirus), small Andean potato mottle virus - (APMoV), T virus of potatoes – PTV, yellowing virus of potatoes (PYV), Potato leaf rotation virus (PLRV), potato Y virus - YVK (Potato virus Y, PVC), potato X virus - PVC (Potato virus X, PVC), potato S virus - SBK (Potato virus S, PVC), and so on. Each or more of these viruses infect the plant, causing a variety of characteristic disease symptoms. The prevalence of potato X, Y, S, L viruses, and later M and A viruses, as well as some of them, has been studied in the country.

Potato Y virus (KYV) is common in regions where potatoes are produced, causing diseases such as linear (poloschataya) mosaics and mosaic twisting (morshinishtaya) in the plant and mainly damaging potatoes, tomatoes, peppers, tobacco, and peppers [2].

Potato Y virus (KYV) is considered one of the most important plant viruses affecting potato cultivation. It is widely distributed around the world, usually causing serious economic damage to seed quality and productivity.

The potato Y virus was first described in the early 1930s as a causative agent of a serious disease in potatoes [3]. PVC has been studied in many parts of the world [4]. PVC is still the main virus of potatoes, as it spreads easily and lowers the yield. It is one of the most important non-stagnant viral pathogens of potatoes worldwide [3]. Depression varies depending on varieties and types [5,6].

PVC is one of the most important viral pathogens of potatoes infected around the world. This can affect the production of certified seeds, as well as crops grown for processing or the new market. The virions of viruses belonging to the potivirus category are 680-900 nm long and 11 to 13 nm wide. Molecular genome description found new strains such as KYVN-Wilga and PVC on the basis of recombination events in KYVgenoms [7,8].

(Matthew 24:14; 28:19, 20) Today, potatoes are one of the most important products in the food industry in our country and are grown as spring and autumn crops, but its yield and seed quality are negatively affected by pathogenic diseases caused by the potato Y virus.

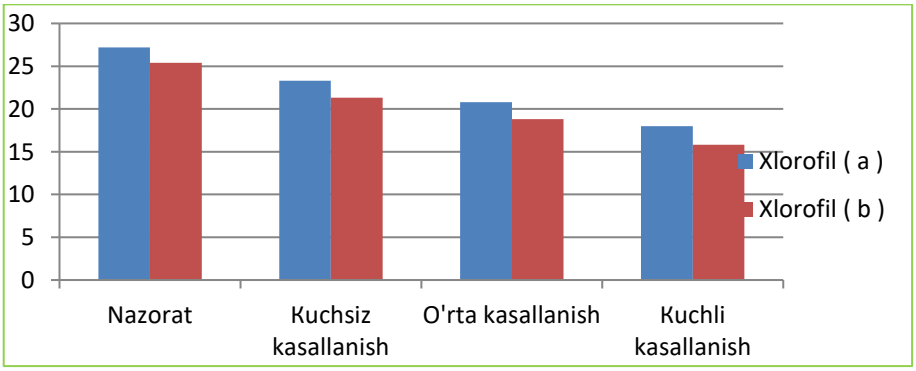
At the moment, new strains of pathogens that infect all living organisms are emerging, and we can observe that their damage is increasing day by day. One such pathogenic agent is these viruses, which have separate groups that infect all kinds of plants, causing direct and indirect major losses in the production of agricultural products by infecting plants and threatening global food stability [9].

Viruses are considered cellular parasites that cause various damage to all living organisms, in many cases leading to disruption of the physiological processes that take place in them and a decrease in productivity. Therefore, in the process of pathogenesis, studying the degree of exposure of the virus to certain physiological processes of growth, including the amount of chlorophyll that provides photosynthesis, is one of the most important issues [10].

Therefore, this research aimed to determine the amount of chlorophyll pigment in the leaf of the ituzum plant, which is infected with the virus to varying degrees.

THE RESULTS OBTAINED AND THEIR DISCUSSION

The work was carried out at The University of Chirchik State Pedagogy, where leaf samples were taken from the growth of an ituzum infected with potato Y-virus, and the amount of pigment in it was determined by the method of spectrophotometry (Agilent Cary 60 UV-Vis, Ger.) [N.K. Lichtenthaler]. The results are shown in graphic form in the photo below (pictured).



Picture. On the leaf of the S. nigrum plant, which is infected with the virus to varying degrees Xlorofill Miqdori Pigments

As the graph shows, there was a decrease in the amount of both pigments, depending on the increase in the rate of infection with the virus, The amount of chlorophyll "a" in the leaf of the weak and moderately infected S. nigrum plant was 27.02 mg/l in control, while in weakly infected plants it was found to decrease by 1.3 times, or 23.09 mg/l, compared to control. Experiments found that in a strongly infected plant leaf, it decreased by 4.3 times compared to control, or reduced to 5.0 mg/l. The amount of pigment "b" of lorophilia was strongly affected by the virus, which is evident in the diagram (pictured).

CONCLUSION. Based on the results of the experiment, it was found that the amount of pigments that react to photosynthesis in plants infected with KYV decreased by three to six times compared to control. This condition leads to a slowdown in many physiological processes that take place on the plant leaf, resulting in a decrease in plant productivity and a decrease in quality and quantity of products derived from agricultural crops.

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