ID	PhD_F_17_54
Principal Investigator's name and surname	Development of quarantine disease potato wart in Georgia and screening of wart resistant varieties
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Abstract

Potato crops first appeared in Tbilisi in the 1820s. The Georgians began growing potato crops from the second half of the 19th century. The diverse natural conditions of Georgia and the adaptability of potato crops make it possible to obtain the early and late season potatoes. An important part of potato-growing areas is located at an elevation of 1000-2500 meters above sea level. Growing of potato does not almost rely on local selective breeding and seed production in Georgia. In the 1990s, several foreign organizations working in Georgia brought the German and Dutch potato planting material. In the last years, potato crops were planted in 25-30 thousand ha of Georgia. The import share of planting and food potatoes is about 20% in the country. The average yield of potatoes in Georgia is still low and ranges from 10 to 13 tons/ha. The number of significant diseases of potatoes is quite high, including the quarantine disease - potato wart that is distinguished by its harmfulness. Its causative agent Synchytrium endobioticum is on the A2 quarantine list of EPPO and it is also included on the list of a limited distribution quarantine objects of Georgia. Potato wart is widely distributed in 55 countries. It was detected in several villages of Khulo municipality through scientific expeditions conducted in 2012-2013 within the framework of the GNSF grant No.31/73. Its existence was confirmed in the collected samples by traditional and molecular techniques. The losses caused by Synchytrium endobioticum may amount up to 50-100 %. Control of potato warts is very difficult due to the biological characteristics of the fungus and other circumstances. Control of potato warts is very difficult due to the biological characteristics of the fungus and other circumstances. It is necessary to study it in detail within the framework of the project to prevent the spread of disease. The goals and objectives of the project are to study potato crops and plots in potato-growing areas of Western, Eastern and Southern Georgia; to determine the disease incidence and the intensity of disease development, and the areas of the spread of disease and quarantine zones; to collect samples of the disease, both during the growing season and after harvesting potato crops and storing them in the storage; to identify the causative agent from infected plant materials and soil samples; to study the biological peculiarities of the disease development; to determine the extent of soil contamination; identify the pathotypes of Synchytrium endobioticum, which spread throughout Georgia; investigate the quality of population diversity and identify resistant commercial varieties to the wart through a test of introduced potato varieties under artificial and natural infections. The project also aims to

expand the range of phytopathological studies in Georgia and lead them to the level of modern standards, which will create a solid foundation for the development of agriculture in Georgia and for the enhance the credibility of Georgia as a new member country of the EPPO, for effective cooperation with Georgian and foreigner scientists working in the same field, appropriate governmental services and farmers.