

The Virology Laboratory at the Institute of Agriculture in Kyustendil – a valuable resource for the region

Author(s): Растителна защита
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A laboratory for molecular diagnostics of viral diseases in pome and stone fruit species, which is part of the Institute of Agriculture in Kyustendil under the Agricultural Academy, has been opened. The new equipment enables the implementation of high-quality research and the making of informed decisions for pest control, as well as for the selection of cultivars and rootstock–cultivar combinations that are resistant to viral and other important diseases. Last but not least is the production of virus-free certified material.

At the beginning of November, a newly equipped laboratory for the diagnosis of viral diseases in pome and stone fruit species was opened in Kyustendil. The new state-of-the-art equipment, consisting of a PCR device, a refrigerated centrifuge, a water bath, gel electrophoresis and a photo-documentation system, has been in operation since the summer of 2022, when the first molecular experiments with proven results were carried out. On the day of the opening, Assoc. Prof. Aneliya Borisova, PhD, gave a brief demonstration of the experiments for the identification of the M and D strains of PPV.

Up to now, the diagnostics of viruses in fruit species has been based on serological methods, therefore the advantages of the *polymerase chain reaction* PCR method over the ELISA method are significant, especially in a region where fruit growing is traditionally a priority.

The new method, based on *polymerase chain reaction* PCR, is much more sensitive and allows rapid and efficient diagnostics of viruses even at low concentrations and at an early stage of tree infection. In addition, for many viruses of economic importance, antibodies have not yet been developed, which is extremely important for the production of certified planting material.

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The protocols for molecular diagnostics of important viruses in fruit species have been developed by research teams of the Agricultural Academy and are applied through the supplied new equipment under the National Scientific Programme “Healthy Foods for a Strong Bioeconomy and Quality of Life” (NNP-FOODS) of the Ministry of Education and Science.

At the opening on 8 November 2022, participants included the team of the Institute of Agriculture – Kyustendil under the Agricultural Academy, Prof. Elena Todorovska, PhD – Chief Scientific Secretary of the Agricultural Academy and Operational Coordinator of Component 1 of NNP-FOODS, Ms. Yanka Mihaylova, Directorate of Financial Management and Human Resources of the Agricultural Academy, Ms. Maria Yunakova, Head of the “Science, Education and Innovation” Department, Prof. Ivan Atanasov, DSc, Director of the AgroBioInstitute of the Agricultural Academy, Assoc. Prof. Iliyana Krishkova, PhD, Director of the Institute of Agriculture – Kyustendil, as well as participants in the National Scientific Programme.

Photos: Agricultural Academy