

„Studies on *Ribes* plants, *Cecidophyopsis* mites and Blackcurrant Reversion virus for sustainable resistance breeding and cultivation of *Ribes*”

1.1.1.1/18/A/026

Progress of the project (01.09.2021. – 30.11.2021.)

Within **Activity No.1**, The assembly and quality control of obtained *TEF-1- α* and *HSP70* sequences was continued and completed. Sequencing optimization for *TEF-1- α* and *HSP70* PCR products was performed at BMC and repeated sequencing was done for the samples with insufficient quality. The final data analysis of the obtained data was continued and manuscript preparation of scientific publications started.

Within the framework of **Activity No.2**, work was continued on the analysis of genotyping data of chloroplast molecular markers (cpSSR) of *Ribes* plant material, performing identification of amplification fragments, quality analysis of results and definition of chloroplast haplotypes. For the purpose of analysis of molecular markers, the origin of the involved *Ribes* genotypes and its relation to the defined haplotypes were clarified.

The work on the analysis and processing of NGS data was continued. The work is ongoing on the preparation of NGS libraries for *Ribes* infested and control samples.

The article “First report of black currant-associated rhabdovirus in blackcurrants in Latvia” has been accepted for publication in “Plant Disease”. The published results were presented as the e-poster in ICPV 2021: 15. International Conference on Plant Virology, which took place in a remote format on 11-12 November in Tokyo, Japan, report “Blackcurrant-associated rhabdovirus new pathogen for blackcurrants in the Baltic Sea region” (authors: Gunta Resevica, Nikita Zrelavs, Ivars Silamikelis, Ieva Kalnciema, Helvijs Niedra, Gunārs Lācis, Toms Bartulsons, Inga Moročko-Bičevska, Arturs Stalažs, Kristīne Drevinska, Andris Zeltins, Ina Balke).

The practical development and testing of diagnostic method for differentiating *Cecidophyopsis* species on *Ribes* plants was continued by using the sequence information of several genes and developed primers within the Activity No.1.

The evaluation of *Ribes* genetic resources collections in the field was completed in the given period, performing the description according to the RIBESCO descriptors. The obtained data have been digitized. Fruit biochemical analyzes were performed for the most productive genotypes. A total of 13 samples of blackcurrants, 10 currants and 19 gooseberries were analyzed. Blackcurrant genotypes GEN 233A and 30B1, red currants GEN 733 and GEN DRUDZE, and gooseberry GEN 1125 characterised by the most valuable biochemical content in this year. The description of Latvian *Ribes* genetic resources according to RIBESCO descriptors has been continued. The list of Latvia's *Ribes* genetic resources, included in the Nordic and Baltic genetic resources database GeNBIS (<https://www.nordic-baltic-genebanks.org/gringlobal/search.aspx>), has been revised and clarified. The necessary corrections have been submitted to the Latvian National Contact Point. In the Tissue Culture Laboratory, 14 genotypes previously selected are maintained at present *in vitro* for the development of a recovered Germplasm Core Collection and 16 genotypes are preserved for plant resistance research.