**„*Ribes* ģints augu,*Cecidophyopsis* pumpurērču un upeņu reversijas vīrusa izpēte ilgtspējīgai *Ribes*ģints ogulāju rezistences selekcijai un audzēšanai”**

**1.1.1.1/18/A/026**

**Progress of the project (01.06.2019 – 31.08.2019)**

Within **Activity No.1**, Multiplex PCR amplification was performed of mite DNA and PCR products prepared for fragment length analyses (FLA) with genetic analyser to mite species. In parallel, digital microscopy and two types of non-destructive electron microscopy were tested for the mite species detection and further isolation of nucleic acids from single mite individual for mite identification with FLA and BRV detection. The non-destructive electron microscopy without freezing of mites was selected as most suitable for the species identification and nucleic acid isolation from single mite individual. Several methods for viral nucleic acid isolation from mites and BRV PCR amplification were tested and analysed.

In **Activity No.2**, adaptation and application of Ribes plant Ce and P resistance gene identification methods were performed for the *Ribes* plant material selected in the previous project phase. The reaction conditions and reagents of the molecular markers were adapted using published information. The inoculation experiment on three genotypes of *Ribes* genus (black currant cultivar ‘Mara Eglite’, red currant cultivar ‘Kodu Suur Valge’ (‘Hele’) and genotype of *Ribes alpinum*, collected in the wild) was used to collect material and given to partner institution for RNA extraction in further NGS analysis. The material was collected before possible pest infestation and after plant-pest interactions to evaluate possible changes in gene expression.

Continued inventory of local *Ribes* genetic resources collections in LatHort field collections in Dobele and Pūre as well as data collected so far to evaluate what additional observations and data tracking would be required to select genotypes for inclusion in the National Genetic Conservation Database and International Databases. The evaluation of local *Ribes* genotypes retained in germplasm collections and collected in earlier germplasm expeditions in field collections according to the RIBESCO descriptors was continued. Work was started on the development of evaluation methods. During the previous period selected *Ribes* genotypes for industrial research and conservation were propagated in-vitro.

The work was continued on summarizing previous knowledge and information on *Ribes*/*Cecidophyopsis*/BRV complex and preparation of review article.

During the reporting period (in June 25-28, 2019), we participated in the International Conference "XII International *Rubus* and *Ribes* Symposium: Innovative *Rubus* and *Ribes* Production for High Quality Berries in Changing Environments", where G. Lācis gave an oral presentation "Phenotypical variability and diversity" Within Ribes Genetic Resources Collection of Latvia", which was prepared based on the information about phenotypic characterization of Ribes genetic resources summarized in the previous project period.

*Information prepared 31.08.2019.*