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## Study of cloudberry *Rubus chamaemorus* L. genetic diversity in Latvia and Belarus based on different molecular marker systems

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Cloudberry (*Rubus chamaemorus* L.) is a perennial plant species from the genus Rosaceae with subarctic and boreal circumpolar distribution mainly in the Northern Hemisphere. In Europe, *R. chamaemorus* is widespread in Fennoscandia and Baltic countries (Thiem, 2003). In Central European countries *R. chamaemorus* occurs in small, isolated populations, and can be observed as a glacial relict (Ehrich *et al.*, 2008). In Belarus, *R. chamaemorus* occurs only in the northern part of the country, and it is considered a critically endangered species with high protection level (Kachanovsky, 2015).

In this study, iPBS (inter-primer binding site) retrotransposon-based molecular markers marker system described by Kalendar *et al.* (2010) in combination with RChL-Ch1 and RChR-Ch1 primers designed for amplification and sequencing 5.8S ribosomal RNA coding fragment was used to assess the genetic diversity and population genetic structure of Latvian and Belarus natural populations of *R. chamaemorus*. In total 276 samples from 12 populations, eight from Latvia and four from Belarus were analysed mainly by comparison iPBS polymorphism results.

Based on molecular data analysis genetic differentiation of cloudberry populations was evaluated by calculating the following parameters: percentage of polymorphic bands (P), effective numbers of alleles (Ne), the average number of (Na), Shannon's Information Index (I), Nei's genetic diversity (He), total genetic diversity (Ht), the mean within-population genetic diversity (Hs), genetic differentiation among different populations (Gst), and gene flow (Nm).

Although the DNA sequencing of ITS 1, 5.8S ribosomal DNA fragment revealed the absence of point mutations among Latvian cloudberry samples some minor differences among Belarusian cloudberry populations were found.

From iPBS gained results we can conclude that despite low gene flow across studied samples, the genetic differentiation process among cloudberry populations from Belarus is more clearly expressed in comparison to Latvian populations.

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