

Apple genetic resources in Latvia — history, current situation and perspectives

Laila Ikase, Gunārs Lācis

*Institute of Horticulture, Latvia University of Agriculture
Graudu iela 1, Ceriņi, Krimūnu pag., Dobeles nov., LV-3701, Latvia,
email: laila.ikase@llu.lv*

Apple genetic resources in Latvia historically originate in the crossroads of Germany; Poland, Lithuania and Belarus (Rzeczpospolita); Sweden; Russia. Some introduced cultivars have survived; others gave seeds for origin of landraces. Winter-hardiness and disease tolerance are important demands in Latvian climate.

The native species *Malus sylvestris* is found sporadically in whole Latvia and is thought to be endangered by cross-hybridization with *Malus ×domestica*. However, it yet waits for genetic study in Latvia.

The first *Malus ×domestica* cultivars supposedly were introduced in 14th century and planted at castles and manors. Orchards at farms are documented since 17th century. First local cultivars were described in 19th century by German and Russian pomologists. Propagation by seed at some farms continued in 20th century, even after start of controlled breeding. In 1950s an expedition collected and described such seedlings, some were named and planted in orchards. Expeditions in 21st century aimed to collect the dwindling diversity in a situation of rapid social changes and loss of memory. Samples of accessions from these expeditions will be presented.

Genetic resource characterization was done by morphological descriptors and molecular markers. Scab research project in 2013–2016 allowed deeper genetic analysis of local genetic resources, and will help their wider involvement in breeding.

Keywords: cultivars, disease tolerance, *Malus ×domestica*, molecular markers, winter hardiness