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The exploitation of fruit trees genetic resources in the agroforestry

The Gene Bank of the Slovak Republic was established in 1996 and provides principal task at conservation of seed species of the plants. The Gene Bank is specific technical institution for medium-term and long-term storage of the seeds in vital state. This institute in compliance with aims and needs of National Programme on Conservation of Plant Genetic Resources for Food and Agriculture for years 2015–2019 ensures monitoring, accumulation, evaluation, study, identification and long-term conservation of gene pools of the all agriculture crops. It storages 18 832 accessions at the active collection, 3 944 accessions at base collection and 3 932 accessions of seed at safety collection in Czech Republic.

The Gene Bank is situated in town Piešťany, in a west part of Slovakia, where the collections of fruit trees are also planted. Field fruit trees collection was planted in years 2005–2007 and is being revised continuously. This orchard consists of 106 peaches genotypes and varieties (*Prunus persica*) and 117 apricots genotypes and varieties (*Prunus armeniaca*). In years 2014–2016 researchers from Gene bank monitored 13 traditional localities in Slovakia where the cherries (*Prunus avium*) have been grown in the past. They characterized 277 cherry trees all together. The results gained during the research project were used for extending the Gene Bank field collection of fruit trees upon 34 cherry trees of local genotypes and other varieties. Each genotype is represented by three or two trees. It means more than 740 fruit trees can be found in the orchard at this time. These fruit trees genetic resources are available for using by other researches for their scientific projects and also for saving and sustainable use of plant genetic resources in systems on-farm.

Old fruit trees genotypes are suitable for growing in agroforestry systems, where are planted on seedling rootstocks in wider row spacing distances and are deliberately used on the same land-management units as agricultural crops or animals, in some form of

spatial arrangement or temporal sequence. Such fruit trees with a longer lifetime are an important part of landscape. The importance of agroforestry as one of the best tools available to mitigate and adapt to climate change is also discussed in different research projects all over the world. Biodiversity preservation and enhancement through locally adapted agroforestry practices is also known as well as water and soil quality and health. Our institute NPPC — Výskumný ústav rastlinnej výroby (Research Institute of Plant Production — RIPP) and the Gene Bank have participated in a few projects focused on saving of fruit trees genetic resources and their exploitation in the agroforestry. These activities are described in a poster.

Key words: agroforestry, fruit trees, genetic resources