

# Conservation of the agricultural and horticultural plants

## Ten years of the National Plant Genetic Resources Programme in Finland



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The Finnish National Plant Genetic Resources Programme was founded in 2003 to meet the goals of the international agreements. MTT Agrifood Research Finland is responsible for the coordination and conservation of the agricultural and horticultural crops. Programme is monitored by National Advisory Board for Genetic Resources appointed by the Ministry of Agriculture and Forestry. Work concentrates mainly on the vegetatively propagated plants, while seed samples are stored in the Nordic Genetic Resource Center, NordGen, in Alnarp. Decisions of the mandates and organization of the collections are made in the national working groups.



Collection of *Prunus* genetic resources in Tuorla. Photo: Tarja Hietaranta/MTT archive

**Plant inventories** have been made to find landraces and local types still available and missing from our collections. Much of this work is carried out in different projects, like recent calls for fruit trees, potato onions, hops and cereals.



Kerro meille myös kasvikokeilmastasi!  
Kerää ja kuvaile vanhoja puutarhakasveja ja puutarhoja. Lähetä kuvat ja tiedot MTT:n kasvikokeilun verkkosivustolle [www.mtt.fi/kasvikokeilumastasi](http://www.mtt.fi/kasvikokeilumastasi).  
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An example of a poster calling for old fruit trees and ornamentals in the public events. Conservation strategy for ornamental horticultural plants is under work.

National collections are located as plants in the **field genebanks** around Finland: Piikkiö, Tuorla, Laukaa, Rovaniemi, Mikkeli, Tammela, Jokioinen and soon also in Sotkamo. Collections include diverse material from various origins, well adapted to our environmental conditions.

Information of the vegetative collections is managed nationally, and the data of accessions is to be transferred to **SESTO data management system**. So far accession related information has been added to SESTO concerning 29 potato onion, 5 shallots, 8 chives, 26 horse radish, 34 rhubarb and 11 hop accessions. Also information about 245 apple and 18 strawberry cultivars is added. Information of several other species has been gathered and organized.

Cultivar details of the new Finnish apple variety 'Suvetar'.



**Diversity** of the collected material is analyzed by DNA-markers if possible, to select genetically wide material and discard duplicates. Fingerprinting is done especially in fruit and berry plants, and we are looking forward to include other plant groups as well.

As a result of the call for **potato onions** (*Allium cepa* Aggregatum –group) in cultivation in 2012, we received 41 samples. These and 29 accessions of national field collection (*ex situ*) were analyzed by marker analysis. In total, 22 different genotypes (clones) were found. 16 of them are already in the collection; about half of the accessions of the accessions are overlapping clones (duplicates). Among the cultivated samples there were 6 genotypes that do not exist in the collection. Project plans to reintroduce potato onions to commercial cultivation.

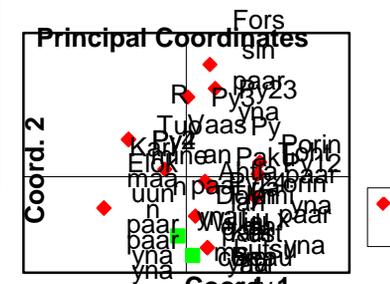
**Future challenges** includes securing stable continuation of the basic conservation work, further development of appropriate conservation techniques, evaluation of existing genetic resources, as well as improvement of their sustainable use in breeding, research, product development, and tourism.

**Safety preservation** of the healthy plant material is carried out *in vitro*, or in cryopreservation using liquid nitrogen in MTT Laukaa. Long term preservation has been ensured by these methods so far especially in berry species, such as currants and strawberry, and some ornamentals.



Micropropagation of raspberry in Laukaa.

Photo: Jaana Laamanen/MTT Archive



Comparison of unidentified bear (*Pyrus communis*) samples of old interesting trees with named clones in the Finnish National collection.



Potato onions. Photo: MTT/Archive