

Appendix A

Gene banks and cultivation safeguard biodiversity of indigenous plants

Many uses of old plant varieties

Indigenous crop varieties are not only the basis of Finnish food safety, but they also tell the story of our cultural heritage. Finnish native plant varieties have been selected for cultivation due to their culinary, aesthetic, and cultivation qualities.

It is possible to find new uses for native plants and they can, for example, help in improving the health of modern plant varieties. Productizing can ensure the conservation of native plants.

Many ways of conserving native plants

The most important purpose of conserving indigenous plant varieties is making a varied crop selection also available in the future. A gene bank maintains samples as safely and securely as possible and exactly as they were at the time of their arrival.

However, plant material that is safeguarded through cultivation on farms or in its original habitat is susceptible to the conditions of its cultivation site and, at the same time, produces plant specimens better suited to changing conditions. In the future, these specimens can incur a new and unexpected use value for the old variety.



Seeds stored in the joint Nordic gene bank

Finnish plant varieties conserved as seeds are stored in the seed collections of the Nordic Genetic Resource Center (NordGen), which are located in Alnarp, Sweden. Additionally, duplicates of all seed samples are stored in a security vault built in the permafrost on Svalbard (Svalbard Global Seed Vault).

Beautiful, delicious, and sustainable traditional varieties thrive in field collections

Most fruit trees, berry bushes, and flowering plants lose their special combination of qualities if new specimens are grown from their seeds. Such plants are reproduced vegetatively; that is, new plants are grown from root shoots, runners, or grafted branches of a mother plant. For example, the qualities of potato, multiplier onion, and rhubarb are also maintained when they are reproduced in the form of sets, tubers, and rootstocks.

These plants are conserved in field collections where individual plants are carefully indicated both at their site and on a site map such that the information on the plant is safely secured.

The material in the field collections is susceptible to weather conditions, diseases, and pests. Therefore, plants are also stored in laboratory conditions, sheltered from, e.g., airborne pathogens. The laboratory storage has begun with fruit and berry plants.



Continuous plant adaptation and cultivation tradition on farms and in gardens

Old economically important plants and their old cultivated populations constitute an important Finnish biological cultural heritage, which is in danger of disappearing from cultivation use. In order to support and promote the continuity of their cultivation, it is important to have a comprehensive idea about the current situation, i.e., where these plants are still cultivated.

Conservation herds and gene banks ensure future for indigenous breeds



Natives breeds have valuable traits

Native animal breeds have important traits, such as their good nature and fertility and the quality of the raw material they produce. Furthermore, they are able to manage in humble conditions and on a meagre diet.

Even though the productivity of many native breeds is lower than that of the main breeds, their special traits can become a more important factor than their production intensity if conditions or market possibilities change. The decisions of the Convention on Biological Diversity also oblige us to conserve our indigenous breeds.

Guaranteeing genetic diversity

The conservation of native animal breeds is important for maintaining genetic diversity. The extinction of breeds and decrease in genetic diversity reduce the hereditary variation of animal breeds required for breeding and for adaptation to changing environmental conditions.

Delicious milk and beef ecologically from native cattle

The indigenous Finnish cattle breeds, Western Finncattle, Eastern Finncattle, and Northern Finncattle, have been bred for milk production. These native breeds are often more efficient milk producers than the main breeds, the Ayrshires and the Holstein Friesians.

The genes of native breeds could be important for agriculture in the future. Their extinction would limit the hereditary diversity of domestic animal breeds and the possibilities of animal breeding. Indigenous breeds also have scientific, cultural, and even gastronomic value.

The protein content in the milk of native breeds is high. In particular, the Eastern Finncattle and the Northern Finncattle have hereditary tendencies towards being particularly good producers of milk for cheese. The beef of the Finncattle is considered fine-textured and extremely delicious.



Conserving animals on farms

Native animal breeds can be conserved on farms in their natural habitat. Farms can apply for support for rearing local breeds.

Endangered Finnish cattle breeds are also conserved on teaching and prison farms. At the moment, the herds of native cattle breeds are located on the Seppälä school farm at Kainuu Vocational College (Eastern Finncattle), at the Ahlman Institute in Tampere (Eastern Finncattle and Western Finncattle) and at the Pelso Prison in Vaala (Northern Finncattle). The sheep barn at the Pelso Prison is a living gene bank of the Finnsheep. Various colors of the Finnsheep and the Kainuu Grey are bred there.

Genes stored frozen

The genes of native animals are also stored separately from production in sub-zero storages. This is how the long-term conservation of gene resources is secured for unexpected situations. Semen and embryos of Finnish cattle breeds have been frozen in long-term storages. Additionally, semen of the Finnsheep and the Finnish Horse have been frozen.