

Forest tree seeds stored in the Svalbard seed vault

February 26 2015

A new method for the conservation of the genetic diversity of forest trees will see its launch on 26 February 2015, as forest tree seeds are for the first time stored in the Svalbard Global Seed Vault on the Spitsbergen Island, protected by permafrost. Conserving the genetic resources of forest trees is part of the mandate of the Natural Resources Institute Finland.

In Finland, the conservation of the genetic diversity of the spruce and pine is based on gene-reserve forests, in which diversity is maintained in the living trees. Genetic makeup is known and desired to adapt as a result of natural selection when the environment changes. The Svalbard Global Seed Vault on the Spitsbergen Island provides us with a great opportunity to complement our chosen strategy, since samples exhibiting the current genetic makeup can be placed in the vault for extremely long-term storage.

The first samples of forest tree seeds to be stored in the vault are spruce and pine, which are the most important species of tree in Nordic forestry.

The objective of storage is to secure the long-term conservation of forest trees for a variety of purposes:

- Backup storage in case of unlikely threats.
- Long-term monitoring of genetic variation in natural forests.
- Monitoring of the changes in genetic diversity occurring as a side-

product of tree breeding.

Several factors influence the [genetic variation](#) of forest trees, the most important of which for the main tree species in Finland are climate change and certain forest management methods. Moreover, the fragmentation of forest stands, pests and diseases also affect genetic diversity.

Safeguarding the genetic variety of [forest trees](#) is an important part of biodiversity conservation. The possibility of monitoring these variations over a long period supports the main goals of protection.

The storage of forest tree seeds in the vault is Nordic cooperation, involving Denmark, Sweden, Finland, Iceland and Norway. At this stage, forest tree seeds from Norway and Finland will be delivered to the Svalbard Global Seed Vault. The Finnish seed lots were collected from gene-reserve forests in Lapinjärvi and Puolanka (spruce), and Vilppula and Loviisa (pine).

The Svalbard Global Seed Vault on the Spitsbergen Island is designed to store duplicates of seeds from seed collections around the globe. Ensuring that the [genetic diversity](#) of the world's crop plants is preserved for future generations is an important contribution towards the reduction of hunger and poverty in the world.

The Svalbard Global Seed Vault is funded and owned by the state of Norway. Norway offers the [seed vault](#)'s services for all operators in the sector. Vault operations are administered by the Ministry of Agriculture and Food of Norway, aided by the Global Crop Diversity Trust and the Nordic Genetic Resource Centre NordGen. Ownership of seeds deposited in the Svalbard Global Seed Vault will remain with the party making the deposit.

Provided by Natural Resources Institute Finland

Citation: Forest tree seeds stored in the Svalbard seed vault (2015, February 26) retrieved 20 September 2024 from <https://phys.org/news/2015-02-forest-tree-seeds-svalbard-seed.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.