Fundamentals of container tree seedling production

Russian-Finnish cooperation
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This guidebook presents the fundamentals of the technology used for growing tree seedlings in containers in Finland and Russia. It was prepared by a group of experts in reforestation from Finnish Forest Research Institute, Forestry Development Centre Tapio, Fin Forelia Ltd. on the one side, and St. Petersburg Forestry Research Institute, Northern Research Institute of Forestry, Forestry Institute of the RAN Karelian Research Center, on the other side.

The recommendations given in the guidebook sum up the experience of growing container seedlings in nurseries of different companies in Finland and Russia: the Republic of Karelia, Arkhangelsk and Leningrad regions.

The work was done under the Protocol of Cooperation between The Federal Forestry Agency of Russia and Ministry of Agriculture and Forestry in Finland.

St. Petersburg and Suonenjoki 7.10.2011

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1. Main facilities for containerized seedling production

1.1 Nursery layout: greenhouses, outdoor fields, storages

Containerized seedlings are grown in specialized nurseries. The technological process of containerized seedling production involves the use of greenhouses and outdoor fields. In winter, containerized seedlings can be stored in outdoor fields as well as in special refrigerated storages.

Production of one million seedlings requires about 2 000 – 2 500 m² greenhouse area and about 3 000 m² of outdoor field area. It is important to make a plan of how greenhouses, outdoor fields and storages will be situated in the nursery area. Greenhouses, outdoor fields and storage / packing facilities should be located logistically clever in order to minimize transportation costs. It is also recommended to have some reserve space for future enlargements, especially concerning greenhouses and outdoor fields.

In addition to the direct production facilities, a container seedling nursery contains facilities for cleaning and filling the containers with growing media as well as a water-handling system and possible heating units for greenhouses. Usually nursery area contains also an office building with a small laboratory and social facilities, a garage and some warehouses. It is also important to locate the nursery so that connections to road network are good. Also, it is not recommendable to locate a nursery on an area where ground water is collected for drinking water.