Cost – Quality Relationship of Norway Spruce Planting and Scots Pine Direct Seeding In Finland – Preliminary Results

V. Kankaanhuhta, T. Saksa, H. Smolander

Finnish Forest Research Institute, Suonenjoki Research Station, Juntintie 154,
FIN-77600 Suonenjoki , Finland

A new cost-effective method to make forest regeneration area inventories has been developed in Finland. The results reveal that there is significant variation both between the forest owners associations and many times also between the actors within one association. More information about this quality control system is available i.e. in the poster “Quality control system for regeneration activities in private forests in Finland” (Saksa et. al.). The aim of this study was to analyse the cost-quality relationship of the forest regeneration practices in forest owners’ associations (FOAs). Some preliminary results of Norway spruce (*Picea abies* L. Karst.) planting and Scots pine (*Pinus sylvestris* L.) direct seeding are presented.

Altogether 12 FOAs inventoried between the years 2000-2002 joined to the study. The participating FOAs were from five various forestry districts of Southern Finland (1-3 of each). The collected cost data of planted regeneration areas included soil preparation, seedlings, planting labor, supervision and other additional costs. The direct seeding chains included also costs of seeding and seeds. The recorded cost data without value added tax was imported to the database, which included the inventory data. The wholesale price index was applied to adjust the annual variation of the costs. For planting chains the criteria to pick the regeneration areas for further analysis were the availability of soil preparation, planting work and seedling cost data. For direct seeding chains the criteria were soil preparation and seed costs. Other costs of regeneration areas were also included, but they were not used as inclusion criteria because of naming practice variations in the invoices. Area weighted regeneration results and regeneration costs per hectare were calculated by municipalities.

The cost-quality relationship between FOAs’ consisting of one or more municipalities varied significantly for both regeneration chains studied. The investment on the forest regeneration may produce very different kind of results in different municipalities. As compared to the inventory results of the whole inventory data, these differences cannot be explained only by geographical or ecological differences, but mostly by differences in regeneration practices and organizational cultures. The comparison of smaller cost data set and the complete inventory data set revealed the difference in regeneration results mainly in favor for smaller cost data set. This is very logical considering the fact that the collected cost data is most complete for the areas fully carried out by the FOA and that the measures carried out by the FOA is supposed to be most consistent.

In general cost-quality relation seems to be very promising way to measure the forest regeneration processes’ performance. It opens a valuable view to the cost structure and importance of various stages in regeneration chains. Other ways to measure the regeneration processes’ performance are studied in other projects of the research group.