

## Interactions between soil scarification and Norway spruce seedling types

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**Abstract** Interactions between scarification treatments and seedling types of Norway spruce were examined at two different locations in southern Sweden. The scarification treatments were not scarified control, mounding and soil inversion and the seedling types were a 10 week-old containerized seedling (mini seedling), a 2 year-old containerized seedling and a 2 year-old hybrid seedling, grown as a containerized seedling the first year and as a bare-root seedling the second year. Site preparation intensity had a greater effect on the mini seedlings. The results indicated that mini seedlings established faster in the soil inversion treatment compared to the larger seedling types. At the same seedling age, the mini seedlings had faster or similar growth rate as the containerized and the hybrid seedlings regardless of scarification treatment. Although mini seedlings grew as well as or even better than larger seedlings if they were successfully established, they were more sensitive to their planting environment and proper handling was critical. Problems with frost heaving and competing vegetation have to be taken into consideration when choosing site preparation method and seedling type.

**Keywords** Containerized seedling • Establishment *Picea abies* • Regeneration  
• Site preparation

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