



Challenges in Beech (*Fagus sylvatica*) seedling propagation

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Introduction

The range of European beech is very wide and it covers most of the European continent from the south of the Iberian Peninsula to the south of the British Isles and the Scandinavian Peninsula. The range of the species tends to expand towards the north. There is no natural population of beech in Latvia, however, it grows perfectly in historically established parks, plantations and greenery. The fact that the beech is feeling good in Latvia is evidenced not only by the productive and healthy plantations around Talsi and elsewhere, but also by the fact that it has started to spread naturally, forming a growth not only under the mother trees, but also spreading further through birds and forest animals

Targeted initiation of beech cultivation would significantly accelerate the adaptation of this species in our forests.



Methodology

The magnificent beech forests of Šķēde are a challenge to grow them in other places as well. Simulated conditions for seed dispersal in a forest stand, when successful beech stand formation occurs, and stands regenerate.

Seedling yield was evaluated by choosing differently stored/stratified seeds of several origins. The seeding time and the volume and depth of the konteiner cell were varied - the number of seedlings per unit area was simultaneously varied, which was accordingly related to the amount of light available to each seedling; some plants will be provided with additional lighting. All seedlings had the same growing temperature.



Results

Stratification in field conditions, in sand, gravel and organic soil compared to stratification in wet gravel or a paper bag shows a very different result. The seeds stratified in the paper bag did not germinate this year, as did the unstratified ones. In field conditions, seeds placed in organic soil with gravel addition germinate better.

The germination of the seeds purchased from other countries is unsatisfactory, a small number of seedlings are available for characterizing the development and size of the stratified seed stock material at different intervals.



Main conclusions:

The best results were obtained by sowing seeds collected in Latvia, stored in wet gravel, stratified at a temperature of +4 - +6 degrees Celsius January – April. Seedlings are best grown in deeper containers.