
Results from genetic tests of *Betula pendula* and its impact on future breeding in southern Sweden

Lars-Göran STENER

The Forestry Research Institute of Sweden, Ekebo 2250, 268 90 Svalöv, Sweden

E-mail lars-goran.stener@skogforsk.se

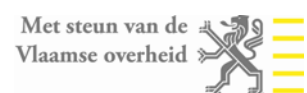
ABSTRACT

Phenotypically selected plus-trees of silver birch (*Betula pendula* Roth) were tested in progeny and clonal tests in the southern part of Sweden. The report includes genetic evaluation of survival, growth and fibre/wood traits up to 11 years of age.

Growth traits were mostly under strong genetic influence, genetic variation was substantial indicating a high potential for genetic gain. The genetic age x age correlations were strong, suggesting that short test periods could be used. No transfer effects for clones of different origin was found and GxE correlations were strongly indicating that southern Sweden can be treated as a single utilization zone.

Wood and fibre properties were under strong genetic control with broad sense heritabilities varying between 0.66 and 0.73. Their genotypic coefficients of variation were quite low (3.5 to 4.7 %). The genetic correlation between growth and wood/fibre traits were weak and not significant except between diameter and wood density showing an unfavourable, modest and significant correlation ($r_g = -0.53$).

REFERENCES



Danell, Ö. & Werner, M. 1989. Förädlingsplan för björk. Årsbok. Föreningen Skogsträdsförädling, Institutet för Skogsförbättring, Uppsala, 18 pp.

In Swedish with English summary

Erkén, T. 1972. Results of progeny trials with birch in middle and upper Norrland. Sveriges Skogsvårdsförbunds Tidsskrift 5: 435-465.

In Swedish with English summary

Johnsson, H. 1967. Avkommeprövning av björk. Föreningen Skogsträdsförädling. Årsbok 1966, p 90-135.

In Swedish

Stener, L.-G. & Hedenberg, Ö. 2003. Genetic parameters of wood, fibre, stem quality and growth traits in a clone test with *Betula pendula*. Scand. J. For. Res. 18: 103-110.

Stener, L-G & Jansson, G. 2005. Improvement of *Betula pendula* by clonal and progeny testing of phenotypically selected trees. Scand. J. For. Res. 20: 292-303.