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

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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).

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