



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Effects of Seed Origin and Site on Wood Density of Sitka Spruce (*Picea sitchensis* (Bong.) Carr.) Grown in Britain

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Abstract: Since density may have a direct influence on wood properties and because density is a factor under genetic control, this study details the effects of seed origins and sites on density. In addition to seed origins, its variability both within and between trees was also examined. In this case, the variation in density was investigated in eight seed origins of Sitka spruce (Alaska-AL, British Columbia-BC, Queen Charlotte Islands-QCI, North Washington-NW, South Washington-SW, North Oregon-NO, South Oregon-SO, and California-CA) grown at two sites in Britain (Dalby: Eastern England and Rhondda: South Wales). For this purpose, the five trees of each seed origin at each site were sampled at three heights (1, 2, and 3 m above ground level). It was observed that wood density decreased with increasing height within the stem. This corresponded to a trend of increasing ring width. The trees of seed origins NW, SW and NO at both sites, and QCI and SO at Rhondda had the highest wood density, partly due to their slow rates of incremental growth. The seed origin CA had the lowest density on account of its rapid incremental growth. Therefore, it is suggested that to optimise density, QCI, NW, SW and NO should be selected for plantation use. The seed origins AL and BC should be avoided in the future plantations as they grew poorly at both sites.

Key Words: Seed Origin, Site, Wood Density, Sitka Spruce, Plantations.

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