

Growth rate and extractive content of old larch trees from natural stands compared to young plantation trees

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Larch wood is valued for its good mechanical properties, its appealing colour and texture, and also for the high natural durability (decay resistance) of its heartwood. The extension of larch plantations in lowland regions of Europe is motivated by advantages in silviculture, as well as by the excellent reputation of larch wood, traditionally grown in mountainous areas. In this study the growth characteristics (ring width and latewood proportion) of larch plantations were investigated in contrast to natural grown larch trees of the same origin. To explain possible changes in decay resistance the amount of extractives was analysed too. Significant differences in radial growth and heartwood extractive contents were found between the origin from the French alps (Montgenevre) and the Austrian origin (Langau). Besides, the old natural grown trees turned out to have higher amounts of extractives compared to the young plantation trees. Linear to slightly curvilinear radial trends were found for extractives in the old, natural grown trees. The acetone extractives and the phenolics increased from pith to bark between 1.2% and 2.2% per 100 rings increment, while the hot-water extractive content raised around 5% per 100 years. Increasing extractive contents account for higher decay resistance.