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### Journal of Forest Science

**Analysis of cambial activity and formation of wood in *Quercus robur* L. under conditions of a floodplain forest**

P. Horáček, J. Šlezingerová, L. Gandelová

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The analyses of the activity of cambium and the study of the increment of wood during one growing season of pedunculate oak (*Quercus robur* L.) under conditions of a floodplain forest is provided. The following parameters were studied: the beginning and end of the cambial activity, differentiation of wood fibres (libriform) and vessels and analysis of the total increment of wood during vegetation in dominant (D), co-dominant (CD) and subdominant (SD) trees in relation to ecological factors of the environment. The course of wood formation corresponds to typical growth curves which are modified by factors of the environment (mean daily temperature, precipitation, soil water supply). The rate of growth is limited by factors of the environment and under the lack of some of them it is reduced resulting in the decrease in the total production of cells. Oak is a species sensitively responding to the period of drought which is particularly manifested in wood increment in subdominant trees. Sufficient supplies of

water during spring months accelerate the formation of early wood including differentiation of spring vessels as corroborated by the results. The total formation of wood is dependent not only on the characteristics of the respective growing season but particularly on the social position of trees in the stand.

### **Keywords:**

wood formation; effect of environment; cell differentiation; radial growth; *Quercus robur* L.

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