

POSITIONAL AND REJUVENATION EFFECTS OF MICROPROPAGATION OF MATURE FAGUS
SYLVATICA L.

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Large scale regeneration of superior genotypes of *Fagus sylvatica* L. (European beech) by conventional propagation methods is not yet feasible. On the other hand, tissue culture technology has been successfully exploited for clonal mass propagation of many other hardwood species. It was the aim of this study to determine the influence of explant position and age of stock plant on multiplication rate during the initial phase of shoot tip culture of beech.

In spring, just before budbreak, buds from one year old long-shoots were taken and surface sterilized. After removal of the bud scales, the shoot tips were cultured on Woody Plant Medium supplemented with 2 % glucose and 1 ppm BA. Shoot elongation and multiplication rate of the explants depended on the positional origin of the bud. Comparing apical and axillary buds, the former showed highest response with respect to propagation.

Additionally, the age of the stock plant played an important role as found also in other deciduous trees. In order to facilitate the establishment of mature tissues, scions of 6 mature beech genotypes were rejuvenated by grafting them on juvenile seedling rootstocks. In all cases the promoting effect of this measure could be demonstrated as buds taken from these graftings showed a much greater regenerative capacity than buds taken directly from the mother plant.

While growth and development during the initial culture period was strongly influenced by the factors investigated, this was no longer evident in the following subcultures.