

The Study of Correlations between the Analyzed Features of Beech (*Fagus sylvatica* L.) Resources in Comparative Cultures Aleşd-Poiana Florilor, Bihor, Romania

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ABSTRACT

The biological material consisted of 31 genotypes of beech (*Fagus sylvatica* L.) with different origins has been analyzed in comparative culture of descendent, installed at Aleşd-Poiana Florilor, Bihor, Romania. The material was representative for 17 European countries, from almost the entire natural area of the species, including Romania; the seedling plants used in the setting up of the culture were two years old and came from the nursery of the Institute of Forest Genetics in Schalembeck, Germany. The culture's area of settlement was in the G2 zone - the Apuseni Mountains area, the Pădurea Craiului Mountains, subzone G240 - hilly beech woods. The experimental appliance for the trial was a 3x4 rectangular railing, with three repetitions, completely randomized, each unitary lot covering 10x10 m, and being made up of 50 plants placed on five rows with a 2 meter distancing in between and 1 meter distance within the row. Measuring and observations were performed 5 years after planting and the following features were taken into account: survival (%), total height (cm), base diameter (cm) and forking (indices). The values measured in percents were transformed in $\arcsin \sqrt{x}$, the rest of the results being processed by means of statistical mathematics. For all characters measured or observed were made simple correlations and were calculated coefficients of correlation, noticed is that survival is significantly and positively correlated with total height and diameter at the base. It was also revealed that total height is significantly and negatively correlated with diameter at the base. These characters are both quantitative character of the trunk, this correlation was natural, but noticeable being that it is negative, so trees with heights greater diameters will be smaller and vice versa. As a conclusion, it was proved that origins are better adapted to environmental conditions and has the capacity of higher growth, and direct correlations between quantitative characters of the trunk reveals a common genetic control.

REFERENCES

1. Enescu, V., N. Doniță, C. Bândiu *et al.* (1998). Harvest area of forestry seeds in R. S. Romania., Redacția de propagandă tehnică agricolă, București, 61 p.
2. Ienciu, A. and M. Savatti (2004). Aspects regarding the existent correlations among different phenotypic characters studied on some natural beech stands (*Fagus sylvatica* L.) in the Western part of Romania. Bulletin UASVM Horticulture 61, 145-149.
3. Statistica, Complet Statistical System, StatSoft, Inc., 1991.