➢ *ORAL PRESENTATION*

Effects of different nanotechnological fertilizer applications on SPAD value in *Fagus orientalis* leaves

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Abstract

Leaf chlorophyll concentration is of great importance as it is an indicator of photosynthetic mechanism, chloroplast content and plant metabolism. The measuring it by destructive methods is laborious, time consuming and costly. But, chlorophyll meter (or SPAD) is portable, self-calibrating, convenient and non-destructive device. In the present study, it was aimed to determine the effects of different nanotechnological liquid organomineral fertilizer (Powfer manufactured by Beybek) doses on chlorophyll content in oriental beech (*Fagus orientalis* Lipsky) leaves using SPAD-502 (Minolta, Japan) chlorophyll meter. One-year-old oriental beech seedlings used in the study were treated with 0 (control), 4, 8 and 12 ml/l doses of Powfer fertilizer on the 15th of each month between March and September. Chlorophyll measurements on the leaves of 30 seedlings in each treatment at the end of the vegetation period (October) were conducted by measuring three times on a leaf (from the tip and middle of the leaf, and the part near the petiole) and taking the average Chlorophyll Concentration Index (CCI) value. The obtained data were subjected to analysis of variance (One-Way ANOVA) and Duncan's test using SPSS 23.0 statistical program. As a result of the study, it was determined that there were statistically significant differences (p<0.01) between different fertilizer dose applications in terms of chlorophyll content. An increase in the amount of chlorophyll was observed as the dose of fertilizer in the fertilized seedlings increased. Three different groups emerged as a result of Duncan's test. Accordingly, Powfer 12 ml/l (59.6 CCI) formed the first group, Powfer 8 ml/l (48.2 CCI) formed the second group, and Powfer 4 ml/l (38.5 CCI) and control (32.8 CCI) together formed the third group. Thus, it can be concluded that fertilizer application can have positive effects on the chlorophyll content of plants and they should be used for higher chlorophyll amounts.

Keywords: Oriental beech, Powfer, chlorophyll, Minolta.

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