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Comparative Study of Wood Density by Specific Amount of Void Volume  
(Porosity)

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**Abstract:** Various methods were progressively investigated to determine wood density within the most reliable void volume (porosity) values. Three softwood species of Bornmulleriana fir (*Abies bornmulleriana* Mattf.), Eastern spruce (*Picea orientalis* Lipsky), and Scots pine (*Pinus sylvestris* L.) grown indigenously in Turkey were selected to obtain a comparison among the green volume (GV), oven dry (OD) and maximum moisture content (MMC) methods. Volume definition had a great effect on density, which tended to vary significantly between and also within species caused by differences in the ratio of cell wall to air spaces. Accordingly: (a) GV might not give more accurate density figures than the others, as this method varies depending on the moisture content, which may be time-of-year dependent; (b) OD may also give unreliable results if the experimental blocks are not dried properly due to the direct reflection of the amount of space occupied by water; (c) MMC gives the most reliable results as the ranges of density are very close to each other along the same stake, and, it can thus be recommended for common use on account of its accuracy.

**Key Words:** Wood density, Porosity, Moisture content, Green volume method, Oven dry method, Maximum moisture content method

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