

Turkish Journal of Agriculture and Forestry

Turkish Journal

of

Agriculture and Forestry

**Litter Decomposition of *Picea orientalis*, *Pinus sylvestris* and *Castanea sativa*
Trees Grown in Artvin in Relation to Their Initial Litter Quality Variables**

Temel SARIYILDIZ

Kafkas Üniversitesi, Artvin Orman Fakültesi, 08000, Artvin - TURKEY

 [Keywords](#)
 [Authors](#)



agric@tubitak.gov.tr

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Abstract: The aim of the present study was to determine the effects of the litter chemistry of spruce (*Picea orientalis*), pine (*Pinus sylvestris*) and chestnut (*Castanea sativa*) grown in the Artvin region on their decomposition rates. Freshly fallen litters from these species were analysed for total carbon, nitrogen, lignin, cellulose and hemicellulose. The litterbag technique was used to determine their mass loss in the field for 2 years. At intervals of 6, 12, 18 and 24 months, 5 litterbags of each species were collected and returned to the laboratory and then analysed for their mass losses. The results showed that differences in mass losses for the 3 tree species were significant for all sampling intervals. Final mean mass losses were 35.9% for spruce, 51.1% for pine and 64.5% for chestnut (increments of 27.0%, 34.7% and 38.6% compared to the initial mass losses at 6 months respectively). Initial lignin concentration was the best predictor ($r^2 = 0.97$) for mass losses from litter species, indicating the relative importance of the initial lignin concentration of these 3 species in affecting their decomposition rates and hence the nutrient cycling process in this forest ecosystem.

Key Words: Decomposition, forest ecosystem, litter quality, lignin, Artvin

Turk. J. Agric. For., **27**, (2003), 237-243.

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