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The effect of stand characteristics on flammability as spatially and temporally

Ömer Küçük[1], Nursema Aktepe[2,*]

[1] Department of Forest Engineering, Kastamonu University, Kastamonu, Turkey
[2] Department of Biology, Kastamonu University, Kastamonu, Turkey
[*] Corresponding author: naktepe @kastamonu.edu.tr

Abstract: The composition of plant species in the fire prone ecosystems, the season of fire, the type of fire and the size of the burning area play an important role in the frequency and the spread of forest fires. The topographical features and seasonal differences as well as the effects of combustible material (plant) properties on flammability are very important in predicting fire behavior. *Pinus nigra* Arnold (Anatollian black pine), which is most affected by forest fires and has the widest distribution area in Turkey after *Pinus brutia*, has a wide distribution area in Kastamonu. In this study, it was aimed to determine the needle moisture contents, ignition temperatures and total ash amounts after burning depending on the slope, elevation, stand characteristics and seasonal differences in the *Pinus nigra* stands. *Pinus nigra* needle samples were taken from different stands ($Çka_3$, $Çkab_3$ and $Çkc_3$) types in April, June, July, August and October, as well as different elevation (700m - 800m and 1000m - 1200m) steps as well as sunny and shady slopes. The moisture content of needles was calculated based on the owen dry weights. Experiments were carried out in a laboratory and total ash amounts, ignition times and ignition temperatures were obtained and correlated with topographical, seasonal and stand characteristics.
Keywords: Forest fires, Stand characteristics, Flammability