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Abstract

Flammability and Combustibility of Some Mediterranean Species Related with Forest Fires in Croatia †

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Abstract: Climatic conditions are extremely important for both the ignition and spread of forest fires. Flammability and fire spread vary depending on the interactions with environmental factors, such as weather, fuels, and topography. Among the fuel variables that affect forest fires, the fuel moisture content, flammability, and combustibility can widely vary between diverse fuel types. The areas with the highest number of fires show significant variability and differences in air temperature, humidity, and precipitation. These factors have a great influence on the flammability, burning duration, and fuel moisture content of several Mediterranean species. This paper investigates and analyzes the flammability and combustibility characteristics of two Mediterranean species that are important for the Adriatic area in Croatia: the climazonal Holm oak (*Quercus ilex* L.) and the Aleppo pine (*Pinus halepensis* Mill.). The latter is an important conifer used for afforestation and reforestation. The results of linear correlation coefficients of flammability delay of these species showed a statistically significant and very strong correlation between the flammability delay and moisture content of the tested samples. Analysis of variance in burning duration showed a statistically significant difference between almost all used variables. The results indicate a significant role of the live fuel moisture content (LFMC) in the flammability delay (DI) and burning time (DC) of natural fuels.

Keywords: fuel humidity; hazard assessment; climate

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