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RATES OF SURFACE FIRE SPREAD IN A YOUNG CALABRIAN PINE (*Pinus brutia* Ten.) PLANTATION

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Abstract

Fire behaviour data and models are essential in modern fire management. Thirty five experimental line-ignited fires were carried out in a young calabrian pine (*Pinus brutia* Ten.) stand with the objective of modelling the rate of surface fire spread. Relationships between rate of fire spread, and fuel, weather and topographical conditions were established by correlation and regression analyses. Dead fine fuel loading ranged from 0.19 to 0.68 kg m⁻². Rate of fire spread varied from 0.3 to 3.75 m min⁻¹ and flame length ranged from 5 cm to 55 cm. Rate of fire spread equations were generated that described the relationships of spread rate with fuel and weather conditions, using linear regression models. Wind speed had a dominant effect on rate of surface fire spread and explained 72% (P < 0.01) of the observed variation.

Key words: calabrian pine, experimental surface fire, forest fuel, rate of fire spread

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