10.1071/WF21092
International Journal of Wildland Fire

Supplementary Material

Predicting the fine fuel moisture content in Dalmatian black pine needle litter

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Supplementary material

Comparison of black pine and Aleppo pine needles

Equilibrium moisture content (EMC)

EMCs for black pine (*P. nigra*) needles in the present study were lower than those for Aleppo pine (*P. halepensis*) needles in our previous work (Bakšić *et al.* 2017) during both sorption phases across the entire range of relative humidity (Fig. 1). The average EMC differences between the two models were 1.5% (range 1.1-4.4%) for desorption and 1.7% (range 0.7-4.7%) for adsorption. Both of these differences were statistically significant, with respective values of $t = -28.06$ ($p < 0.001$, $N = 91$) and $t = -21.56$ ($p < 0.001$, $N = 91$).

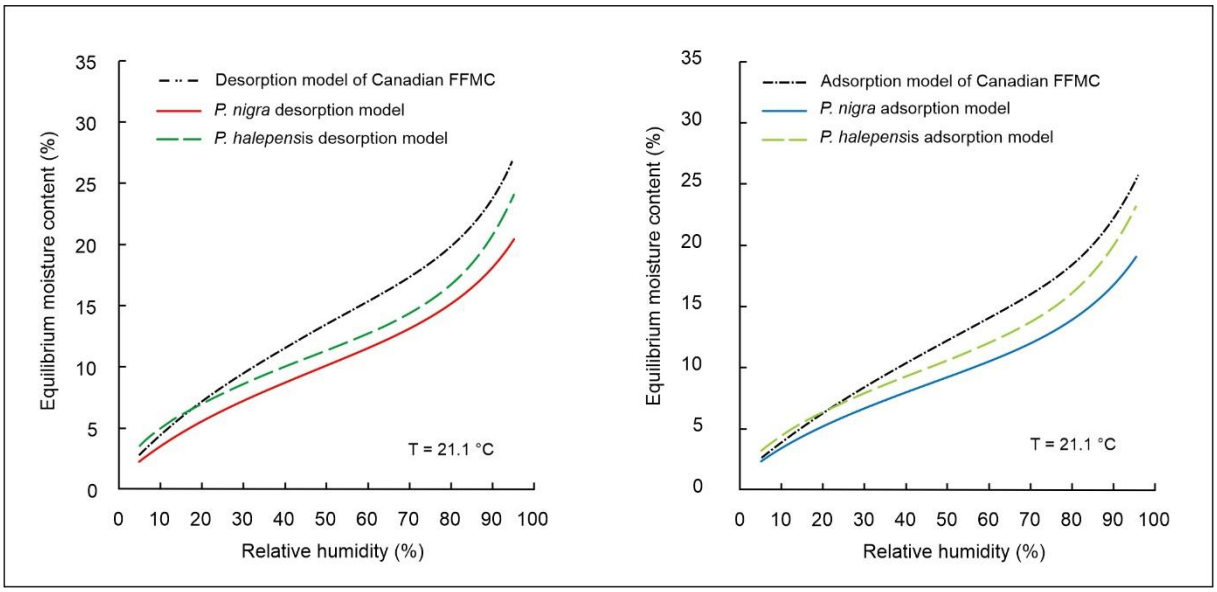

Fig. S1. *Comparison of EMC isotherms for* P. nigra *needles (present study),* P. halepensis *needed (Bakšić et al. 2017) needles and the Canadian isotherms used in standard models of daily and hourly FFMC (Van Wagner 1977, 1987).*

Response time (τ_1)

Comparison of the first τ period for desorption (τ_1) showed that under the same conditions, Aleppo pine (*P. halepensis*) needles in our previous work (Bakšić *et al.* 2017) dry approximately three times as fast (Fig 2a and 2c) and react adsorptively two times as fast as black pine (*P. nigra*) needles in the present study (Fig. 2b and 2c).

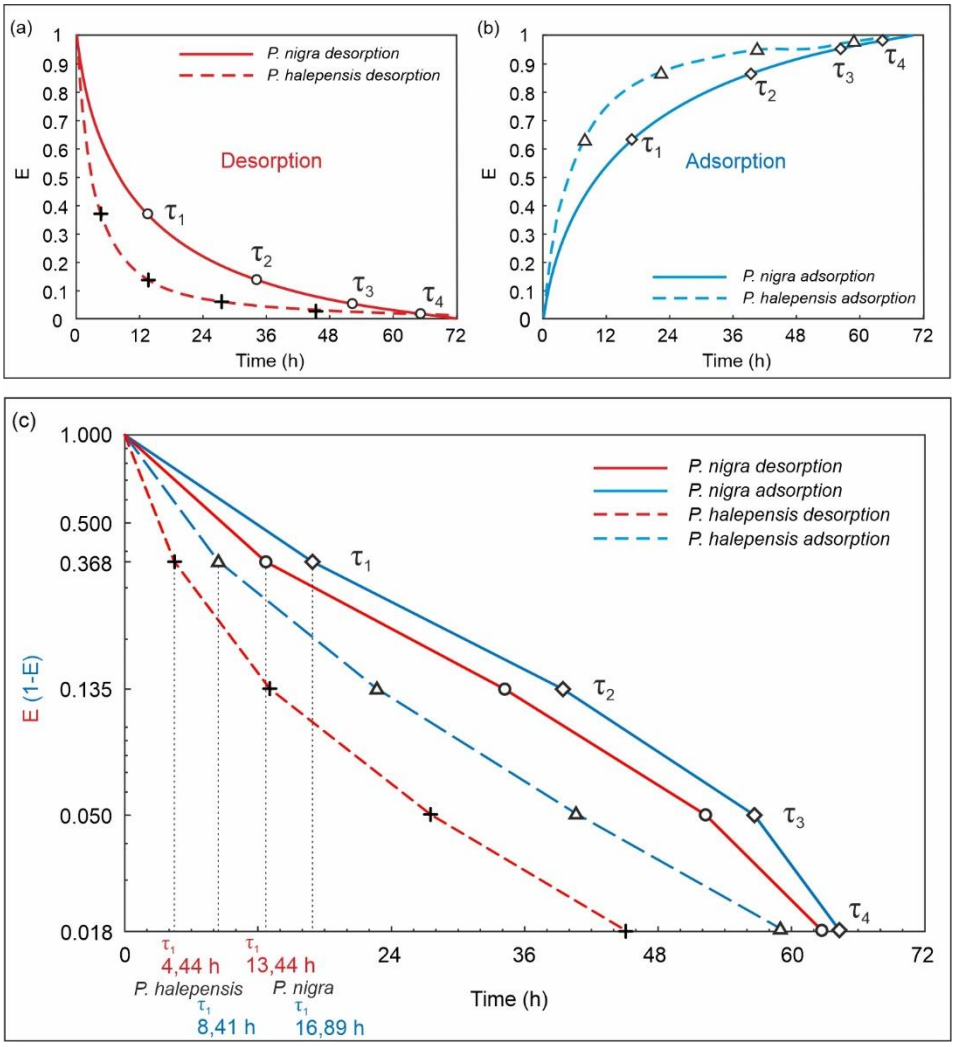

Fig. S2. (a-b) *Fraction of evaporable moisture remaining in the fuel (E) and response times (τ) for* P. nigra *needles (present study) and* P. halepensis *(Bakšić et al. 2017) during (a) drying or (b) wetting.* ***(c)*** *Semi-log plot of sorption response times (τ) based on the data in (a)-(b).*