Quantification of fuel material in litter at *Eucalyptus* plantations in Aquidauana, MS

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ABSTRACT – The quantity and type of combustible material are fundamental components for the occurrence of a forest fire. In reforestation, fire is quite frightening, since there is a greater economic value associated with wood, as well as the continuous accumulation of litter on the soil surface, besides the fire itself being able to spread to adjacent areas, devastating natural areas and reducing forest biomass. Thus, the objective of this work was to quantify the amount of material accumulated in the forest floor of an eigth years old hybrid Eucalyptus 'Grancam' (*Eucalyptus grandis* x *Eucalyptus camaldulensis*) and Eucalyptus 'Urograndis' (*Eucalyptus urophilla* x *Eucalyptus grandis*), in the State University of Mato Grosso do Sul (UEMS), Aquidauana Campus. Five plots of $1m^2$ were installed in a 3 ha plot where all material above the ground was collected systematically in April /19. The fuel material was separated according to its type (green or dry) and class (leaves, miscellany, and branches, with diameter <0.7 cm, 0.7 to 2.5 cm, 2.5 to 7.6 cm and> 7.6 cm) and then oven dried at 65°C for 72 hours. In each separate material the moisture content was determined. The experimental design was completely randomized in a 2x7 factorial design (Type x Class) in five replicates and the significant means were compared by the Scott-Knott test at 5% probability. No branches with a diameter greater than 2.5 cm were observed and the fuel material had a moisture content of 14.5%, with a higher average grade of branches (diameter of 0.7 to 2.5 cm). The total accumulation of dry fuel material in the area was 14.2 $Mg.ha^{-1}$. There was no difference between dry weight and green weight in the material, however in the classes, it was observed a greater green and dry weight of leaves, in relation to the others, where the bark class was less representative. Understanding the quantity and type of combustible material in forest typologies is essential for the eventual needs of actions to combat and prevent forest fires at different times of the year, serving as a protection measure for vulnerable ecosystems.

Keywords: Forest fire, Cerrado, humidity, branches, Eucalyptus.