MODELLING MOISTURE SORPTION ISOTHERMS OF *RHECKTOPHYLLUM CAMERUNENSE* VEGETABLE FIBER

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ABSTRACT

The aim of this work was to modelling the moisture sorption isotherm of the *Rhecktophyllum Camerunence* (RC) fiber at $23°C$ by using the BET, GAB and DLP models. The fibers samples of 0.1g were submitted to hygro-thermal ageing in an environmental enclosure of 23%, 54% and 75% relative humidities at 23°C in accordance with NF EN ISO 483: 2006-01 standard. After 7 hours of exposure the equilibrum moisture was reached and gravimetric measurements were achieved on the specimens. The maximum moisture content was calculated. Their isotherms were modelled by interpolating the experimental datas of the maximum water content as a function of the relative humidity with the BET, GAB and DLP equations. The isotherms presented the sigmoid shape of type II. The parameters of those mathematical models were also deduced and the goodness of fit have been evaluated. The DLP model gave an excellent adjustment.

Keywords: *Rhecktophyllum Camerunence,* sorption isotherms; equilibrium state, water activity, GAB, BET and DLP models.