

Determination and Modeling of Thermal Properties of *Aloe Vera* Exudate

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Products based in Aloe Vera (*Aloe Barbadensis Miller*) have become of common use due to their numerous applications for nutritional, medical or cosmetic consumer goods [1,2]. The majority of the research related to Aloe Vera has been directed towards the characterization of each of its products, since there are many compounds present in them. Most of the primary processing of such products is done by thermal treatments such as evaporation, pasteurization and drying [3,4], nevertheless there has been little research done about the thermophysical properties of aloe vera products [5].

In this work the thermophysical properties of Aloe Exudate are determined; Aloe Exudante is one of Aloe Vera's primary products [6]. Such properties are determined for different conditions of temperature (10-90°C) and humidity (5-95%). The measured properties are: density (pycnometer [7]), heat capacity (calorimeter of foods [8]), and thermal conductivity (thermal conductivity probe [9], composite cylinders [10], coaxial cylinders [11] y and based on the Peltier effect [12]) and viscosity (Saybolt Viscosimeter). Thermal conductivity is measured by four different techniques with the objective of comparing exactitude and the interval of applicability of each of those techniques. The obtained results are correlated as a function of temperature and the water content, and compared with structural models.

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