

**Title** Effect of apparent viscosity on fluidized bed drying process parameters of guava pulp  
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#### **Abstract**

Pressure drop and minimum fluidization velocity were experimentally studied in a vibro-fluidized bed of inert particles subjected to different vibration intensities during drying of guava pulp. Maltodextrin was added to the pulp in order to prevent stickiness between particles and the consequent bed collapse. Pulps were initially concentrated, resulting in pastes with different soluble solids content, and a constant fraction of maltodextrin was guaranteed in the final pulp samples. The pulp rheological behavior as affected by temperature and total soluble solids content, including maltodextrin, was evaluated and the effect of pulp apparent viscosity on pressure drop and minimum vibro-fluidization velocity were investigated. Two types of inert particles – 3.6 mm glass beads and 3 mm Teflon cylinders – were tested and, due to lower pressure drop presented by Teflon cylinders during operation of the dry vibro-fluidized bed, these particles were adopted for pulp drying process. Increasing pulp apparent viscosity caused a considerable increase in the vibro-fluidized bed pressure drop during pulp drying and, as a consequence resulted in a larger value of minimum vibro-fluidization velocity. On the other hand, the negative effect of increasing apparent viscosity could be attenuated by increasing the fluidized bed vibration intensity, which could prevent stickiness between particles.