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30,00 € / \$42.00

## A Rheological Model for Cupuassu (*Theobroma grandiflorum*) Pulp at Different Concentrations and Temperatures

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**Citation Information:** International Journal of Food Engineering. Volume 9, Issue 4, Pages 353–363, ISSN (Online) 1556-3758, ISSN (Print) 2194-5764, DOI: [10.1515/ijfe-2012-0194](https://doi.org/10.1515/ijfe-2012-0194), October 2013

#### Publication History:

Published Online: 2013-10-31

### Abstract

This work was made aiming at studying the best model for the rheological properties of Cupuassu (*Theobroma grandiflorum*, Schum) pulps with 14 (in nature), 17, 19, 23 and 25°Brix of total soluble solids (TSS) which were measured at 20, 30, 40, 50 and 60°C temperature using a concentric cylinder rheometer. The results were adjusted to the following nine models: Ostwald-de-Waele (power law), Bingham, Casson, Generalized Casson, Heinz–Casson, Herschel–Bulkley, Mizrahi–Berk, Schulmann–Haroske–Reher and Windhab. The parameters of the best model were correlated with pulp temperature and TSS by polynomial regression analysis and were kept in the regression equation only those parameters that contributed more than 1% to the variation of the independent variable. The results indicate that the rheological behavior of Cupuassu pulp in different concentrations and temperatures can be modeled by the Windhab model, although other models can be used in a narrower band of shear stress.

**Keywords:** [Windhab model](#); [viscosity](#); [shear rate](#); [shear stress](#)

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