

RESEARCH PAPER

DOI: 10.15740/HAS/IJPPHT/7.2/210-219

Rheological behaviour of three varieties of Indian mango - Langra, Chausa and Dashehari by using power law model

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■ Research chronicle : Received : 18.07.2016; Revised : 17.10.2016; Accepted : 18.11.2016

SUMMARY :

Mango is one of the popular tropical fruits of great commercial importance, due both to its pleasant aroma and flavour and its nutritional value, with high caloric, vitamins and mineral salts contents. To handling these products in the food industry the pulp is submitted to a complete industrialization process. Among the many factors influencing the rheological behaviour of fruit pulps, the measuring systems' geometry is one of the most important, having great influence on rheological parameters definition that describe the fruit pulps, because these materials are non-newtonians. Rheological properties of mango pulp from three North Indian varieties (Chausa, Dashehari and Langra) were investigated for their consistency constant (K), flow behaviour index (n) and yield stress (C) using a Brookfield synchroelectric rotary viscometer (LVT model). The power law model was used to describe the flow behaviour of the mango pulp samples. The magnitude of consistency constant was found to be 25.92, 38.30 and 49.82 (dynes secⁿ/ cm²), respectively. The flow behaviour index and yield stress were found to be 0.345, 0.323 and 0.288 and 79.30, 84.94 and 193.86 (dynes/cm²), respectively.

KEY WORDS : Mango, Physico-chemical properties, Rheology, Consistency constant, Flow behaviour index, Yield stress

How to cite this paper : Anurag, R.K., Ahmad, Iqar, Alam, Tanweer and Bhardwaj, Aastha (2016). Rheological behaviour of three varieties of Indian mango - Langra, Chausa and Dashehari by using power law model. *Internat. J. Proc. & Post Harvest Technol.*, 7 (2) : 210-219. DOI: 10.15740/HAS/IJPPHT/7.2/210-219.