

Physical Properties of Nine Nigerian Staple Food Flours Related to Bulk Handling and Processing

Authors : Ogunsina Babatunde, Aregbesola Omotayo, Adebayo Adewale, Odunlami Johnson

Abstract : The physical properties of nine Nigerian staple food flours related to bulk handling and processing were investigated following standard procedures. The results showed that the moisture content, bulk density, angle of repose, water absorption capacity, swelling index, dispersability, pH and wettability of the flours ranged from 9.95 to 11.98%, 0.44 to 0.66 g/cm³, 31.43 to 39.65o, 198.3 to 291.7 g of water/100 g of sample, 5.53 to 7.63, 60.3 to 73.8%, 4.43 to 6.70, and 11 to 150 s. The particle size analysis of the flour samples indicated significant differences (p<0.05). The least gelation concentration of the flour samples ranged from 6 to 14%. The colour of the flours fell between light and saturated, with the exception of cassava, millet and maize flours which appear dark and dull. The properties of food flours depend largely on the inherent property of the food material and may influence their functional behaviour as food materials.

Keywords : properties, flours, staple food, bulk handling

Conference Title : ICABBBE 2016 : International Conference on Agricultural, Biotechnology, Biological and Biosystems Engineering

Conference Location : London, United Kingdom

Conference Dates : April 22-23, 2016