



EFFECT OF DRYING ON PHYSICAL AND FLOW PROPERTIES OF BANANA POWDER

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ABSTRACT

Due to a lack of knowledge on the physical characteristics and flowability of the powders, it makes it difficult to handle or design the process, equipment, and handling machinery for powders. The research was inducted to investigate the flow characteristics and flowability of the unripe (green) banana powders, which were prepared by using two different drying methods, viz. sun drying, and hot air drying. A comparative analysis of physical characteristics and flow properties by using the Brookfield Powder Flow Tester (PFT) was done between the hot air-dried and sun-dried powder at an equal moisture content of 6.61% (wet basis), and these results showed a trend that sun-dried powder has a better flow characteristic than the hot air-dried unripe banana powder, which was found to more cohesive at equal moisture contents. Hopper design showed that hot air-dried powder of unripe banana requires higher hopper outlet dimension and hopper half angle than sun-dried powder for mass flow through the conical-shaped hopper. The knowledge of the physical and flow properties of unripe banana powder would be useful in designing hoppers for the equipment in food industries.
