

Effect of pre-treatment on the physical properties of pumpkin powder

ABSTRACT

The preservation of pumpkin in powder form and ensuring its quality using different pre-treatments prior to drying is an important concern. The objective of this study is to determine the effect of pre-treatment on the physical properties of different parts of pumpkin powder. Different parts of pumpkin (skin, flesh, seed and unpeel) were pretreated with blanching and soaking in $\text{Ca}(\text{OH})_2$ solution and then dried in air fryer at temperature of 80°C and air flow 5.11m/s before being grounded and sieved ($250\ \mu\text{m}$ and $710\ \mu\text{m}$). The $\text{Ca}(\text{OH})_2$ pre-treatment showed low moisture content (5.51%- 6.38%), low water activity (0.313-0.396), small particle size ($112.04\text{-}213.46\ \mu\text{m}$) and high bulk density ($505.51\text{-}375.75\ \text{kg/m}^3$) in different portions of pumpkin powder as compare to blanching pre-treatment. For the color change, it is dependent on the parts of pumpkin and whether pre-treatment is applied. In conclusion, the pre-treatment with $\text{Ca}(\text{OH})_2$ could be recommended way in prior to drying of pumpkin ensuring the better quality of powder.

Keyword: Pumpkin powder; Air frying; Powder properties