

Modeling of Moisture-Dependent Properties and Mineral Contents of Dry Mushroom

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SUMMARY

In this study, mineral contents and some physical properties, important for the design of equipments for harvesting, processing, transportation, sorting, separation and packaging of white button mushroom, *Agaricus bisporus* (Lange), were researched. Those properties were evaluated as a function of moisture content for the moisture range from 11.55 to 76.91% dry base (d.b.) by rewetting dry white button mushrooms. In results, the average cap maximum and minimum diameter (29.96 respectively 23.12), cap height (17.19), carpophores height (30.48), geometric mean diameter (22.91 mm), sphericity (81.07%), mass weight (1.08 g) and volume (2.93 cm³) were obtained. The bulk density, true density and terminal velocity increased from 65.24 to 115.65 kg·m⁻³, from 375.8 to 394.6 kg·m⁻³ respectively from 5.77 to 8.05 m·s⁻¹. Whereas porosity and sphericity decreased from 82.64 to 70.69% and from 78.39 to 74.9% under the increments of moisture content from 11.55 to 76.91% d.b. in dry mushroom. Mathematical model were developed for the physical properties. Furthermore, mineral contents of dry mushroom such as N, P, K, Zn and Fe were 5.73, 1.34, 3.54 %, 41.21 and 26.67 g·kg⁻¹, respectively.

Keywords: Dry mushroom, moisture, physical properties, minerals