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Res. Agr. Eng.

**Sonawane S.P.,
Sharma G.P., Thakor
N.J., Verma R.C.:**

Moisture-dependent physical properties of kokum seed (*Garcinia indica* Choisy)

Res. Agr. Eng., 60 (2014): 75-82

Designing the equipment for processing, sorting and sizing of agricultural crops requires information about the crops' physical properties. The physical properties of kokum seed were evaluated as a function of moisture content in the range of 7.35 to 25.79% d.b. (dry basis). The average length, width, thickness and one thousand seed mass were 17.17 mm, 10.66 mm, 5.87 mm and 410 g, respectively, at a moisture content of 7.35% d.b. The average value of geometric mean diameter and sphericity were 10.19 mm and 59.75%, respectively, at moisture content of 7.35% d.b. As the moisture content increased from 7.35 to 25.79% d.b., the bulk density increased from 345 to 396 kg/m³, true density decreased from 1179 to 1070 kg/m³, and the corresponding porosity decreased from 65.73 to 55.46%; the repose angle and terminal velocity increased from 32.1 to 42.3° and 4.30 to 6.73 m/s, respectively. The static coefficient of friction increased on three structural surfaces namely, glass (0.59– 0.73), stainless steel (0.81– 0.87) and plywood (0.74– 0.83) in the moisture range from 7.35 to 25.79% d.b. Linear regression equations were used to express the physical properties of kokum seeds as a function of moisture content.

Keywords:

kokum butter; engineering properties; angle of repose; terminal velocity; static coefficient of friction

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