Title Effects of moisture content on some physical properties of lentil seeds

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Abstract

This study was carried out to determine the effect of moisture content on some physical properties of lentil seeds. Four levels of moisture content ranging from 10.33% to 21.00% (wet basis) were considered in this study. The shape of the lentil seed was a disc shape with dimensions of diameter and thickness. Diameter, thickness, porosity, mass of 1000 seeds and angle of repose increased linearly from 3.84 to 4.06 mm, 2.18 to 2.48 mm, 34.48 to 37.00%, 20 to 25.5 g and 24.80 to 27.78°, respectively with increase in moisture content from 10.33% to 21.00%. Bulk density and kernel density decreased linearly from 832 to 768 kg/m^3 and 1270 to 1212 kg/m^3, respectively with increase in moisture content from 10.33% to 21.00%. Static and kinetic coefficients of friction of lentil seeds were determined on a smooth concrete, galvanized iron, plywood and glass sheets at various moisture contents. They varied from material to material and depended on the roughness and wetness of the seeds. The highest static and kinetic coefficients of friction were found on the concrete surface and the lowest on the glass sheet among the materials tested.