

Determination and investigation of some physical properties of seven variety rapeseed

Hazbavi, E. ^{1*}, Minaei, S. ²

1. Msc student, Dept. of Agricultural Machinery Engineering, Tarbiat Modares University

2. Director, Scientific Center of Excellence: Recycling and Loss Reduction of Strategic Agricultural Products. Tarbiat Modares University

Rapeseeds of seven major local Iranian varieties, Option, Orient, Talaye, Global, Hyola 308, Hyola 401 and Colvert, with moisture contents of 5.49, 4.55, 5.41, 4.74, 5.53 and 5.32 (%w.b.) , respectively were selected to study seed physical properties. Linear dimensions, mean diameters, sphericity, surface area, volume, true and bulk densities, porosity and static coefficient of friction of the seven varieties were measured using standard methods. Results showed that length, width, thickness, arithmetic mean diameter and geometric mean diameter of rapeseed varied from 1.838 to 2.295 mm, 1.758 to 2.147 mm, 1.591 to 1.904 mm, 1.761 to 2.104 mm and 1.76 to 2.095 mm, respectively. Values of sphericity, surface area, volume, true density, bulk density and porosity of rapeseed were between 0.91 to 0.957, 9.744 to 13.86mm², 2.667 to 6.44 mm³, 928.01 to 1370 kgm⁻³, 675.61 to 741.6 kgm⁻³, 25.3 to 45.9 %, respectively. Measurement of the coefficient of friction of rapeseeds against plywood, galvanized iron, steel, aluminum and rubber showed that static coefficient of friction varied from 0.273 on steel sheet to 0.51 against plywood. It is concluded that physical properties of rapeseeds are quite dependent on variety.

Keyword: Gravimetical properties; Geometrical properties; Rapeseeds

*Corresponding author E-mail address: hazbavi3000@yahoo.com