Some Physical Properties of Garlic (*Allium sativum L.*)

A. Masoumi, A. Rajabipoor, A. Akram
Ph.D student and assistant professors: Department of Agricultural Machinery, Faculty of University of Tehran

Abstract

Some physical properties including coefficient of static friction, angle of repose and terminal velocity of two common types of garlic cloves (white and pink) in Iran were measured at the moisture range from 34.9 to 56.7% on wet bases. Analysis variance (ANOVA) showed that, coefficient of friction, angle of repose and terminal velocity for both types of garlic cloves were affected significantly by moisture content ($P<0.01$). Relationships between the physical properties and moisture content were expressed by appropriate equations and evaluated by using analysis of variance (ANOVA). Comparison of means were performed using Duncan's method. The coefficients of friction of two types of garlic did not show any significance difference at 5% significance level. The mean values of angle of repose for both type cloves were significantly different, but empty and filling methods were not significantly different. The terminal velocity of three mass fractions (small, medium and large) for both types of garlic were determined and values had significantly different. The maximum and minimum coefficient of friction was 0.74 and 0.26 against steel galvanized and rubber respectively. The values of angle of repose were between 36.1 and 43.5 degrees, as well as maximum and minimum values for terminal velocity were 16.66 and 9.82 meter per minutes respectively.

Keywords: garlic, friction, terminal velocity, and angle of repose.