ABSTRACT

Physical Properties of Dry-Milled Maize Meals and Their Relationship with the Texture of Stiff and Thin Porridge

Calvin Onyango

Selected physical properties of white maize meal, obtained by different dry-milling techniques were evaluated and correlated to the texture of stiff and thin porridge. Sifted or par-cooked maize meals had finer particles than hammer-milled maize meals. Hammer-milled maize meals had lower water absorption indices (17-38%) and higher water solubility indices (WSI, 4-5%) than sifted (41-42 and 2-3%, respectively) or par-cooked (114 and 2%, respectively) maize meals. Sifted or par-cooked maize meals had lower breakdown viscosities (0-19 BU) and higher final viscosities (818-1925 BU) than hammer-milled maize meals (89-173 BU and 530-780 BU, respectively). Stiff porridge prepared from par-cooked maize meal (34% w/v), and thin porridge from dehulled and hammer-milled maize meal (10% w/v) had the firmest textures at 80.93 and 1.28 N, respectively. There was a negative correlation ($P < 0.05$, $r = -1.00$) between the WSI and total shearing force of stiff porridge prepared from par-cooked maize meal.

Key words: Maize, porridge, texture, Pearson correlation coefficient.