

Functional characterization of flour of selected cowpea (*Vigna unguiculata*) varieties: canonical discriminant analysis

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Abstract

Characterization of 28 varieties of cowpea flour, based on Brabender pasting properties of flour slurry (12% w/w flour: water), was achieved by canonical discriminant analysis. Pasting viscosities at various points on the amylogram, pasting temperature and paste viscosity ratios were obtained for each variety of flour. Significant varietal influence on pasting properties was indicated by ANOVA ($P < 0.01$) and MANOVA. The hot paste viscosity at 95 °C (HTPV) and the hot paste capacity index (HPCI) had the highest correlations with the 1st and 2nd canonical variables and together accounted for 78% of total variance in the whole dataset. A plot of the second canonical variable against the 1st canonical variable showed that varieties situated together had HTPV values within close ranges. The hot paste viscosity (HTPV) was the most discriminating paste viscosity and could become an important index of functionality of cowpea flour.

Keywords: Functional characterization; Cowpea flour