

Extrusion Characteristics of Cereal and Legume Flours.

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Abstract:

Some physical factors that determine the extrusion characteristics of cereal-legume blends were examined. These were particle size, substitution level and type of legumes. Corn (*Zea mays* L.), Cowpea (*Vigna unguiculata*) and Winged beans (*Psophocarpus tetragonolobus* L.) of three particle sizes namely flour (<425 microns), grits (>425 microns, <600 microns) and coarser grits (>600 microns, <850 microns) were used. Blends containing 10% and 20% of each legume with the respective corn fraction were prepared and analysed for proximate composition, water absorption capacity, pasting (cooking) characteristics and viscosity.

Addition of legumes increased the nutritional composition of corn-meal with more increases in corn-winged bean than corn-cowpea blends. Winged bean produced greater adverse effects on viscosity and pasting characteristics of corn-legume blends than did cowpea. Statistical analysis showed that the type of legume had the greatest effect on most of the characteristics examined while substitution level produced the least effect.

The CWBF (80:20), CWBG 600 (80:20) and CBG 600 (80:20) blends would most probably give the best extruded products since these blends would be able to withstand extrusion conditions of high shear and pressure. The CWBF (80:20), CWBG 600 (80:20) and CBG 600 (80:20) blends would most probably give the best extruded products since these blends would be able to withstand extrusion conditions of high shear and pressure.

Keywords: Extrusion characteristics/ cereal-legume blends

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