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COMPARISON OF QUALITY PROTEIN MAIZE (QPM) AND NORMAL MAIZE WITH RESPECT TO PROPERTIES OF INSTANT PORRIDGE

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ABSTRACT

The investigation was carried out to optimize the extrusion conditions for the development of normal maize and Quality Protein Maize (QPM) based instant porridge. The effect of 3 independent variables (moisture content (14-18 %), barrel temperature (125-175 °C) and screw speed (400-550 rpm) on the dependent variables (carbohydrate solubility (CS), protein solubility (PS), hydration power (HP) and milk absorption capacity (MAC) was evaluated by using central composite design in response surface methodology (RSM). Feed moisture and barrel temperature exhibited significant affect ($p \leq 0.01$; $p \leq 0.05$) on PS, HP and MAC, while screw speed showed non-significant ($p \leq 0.01$; $p \leq 0.05$) affects on HP and CS. Increase in the moisture content and barrel temperature increases the CS and PS of normal as well as quality protein maize porridge. However, increase in screw speed results in decrease in protein solubility. **Optimum extrusion conditions for QPM were 14.19-15.36% feed moisture (on dry basis), 411.61-466.50 rpm screw speed and 150°C barrel temperature. Optimum extrusion conditions for NM were 14.02-14.17% feed moisture (on dry basis), 171.27-173.47 °C barrel temperature and 404.05 rpm screw speed.** Based on the results it was concluded that quality protein maize can be extruded into acceptable as well as nutritious breakfast food.