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Development and Parameter Optimization of Health Promising Extrudate Based on Fenugreek Oat and Pea

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Abstract—*The purpose of this study was to develop health promoting extruded snack products. Extruded snacks were prepared using a blend of oat, green pea and fenugreek seed flour and leaf powder. Effect of feed moisture (12–16% wet basis), barrel temperature (90–110 °C) and screw speed (100–200 rpm) on the product properties like lateral expansion (LE), bulk density (BD), water absorption index (WAI), water solubility index (WSI) and hardness was investigated. The product responses were significantly affected by changes in moisture, temperature and screw speed. The regression models for product responses like LE, BD, and hardness were highly significant (P≤0.0001), whereas WAI and WSI were significant at a (P≤0.001) respectively. Desirable extruded products were obtained at moisture of 12%, 110 °C temperature and 200 rpm screw speed. It was revealed that fenugreek, oat and dried green pea can be used to produce snack products with desirable quality characteristics.*

Keywords*: Barrel temperature, oat, dried green pea, hardness.*