

Suitability of Wheat Flour Blends with Malted Cowpea Flour for Noodle Making

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Abstract

The current trend is to develop composite flours based food products with enhanced nutritional as well as other quality traits adding variety to the food basket. Composite flour noodles were developed using blends of refined wheat flour with malted cowpea flour with replacement level of 10 and 20%. The native flours and their blends were analyzed for their physicochemical, functional and pasting properties to assess their suitability for noodle making. Noodles prepared from composite flours were analyzed for cooking properties like cooking time, cooking loss and cooked weight. The textural attributes of hardness, adhesiveness, cohesiveness, gumminess and resilience of the cooked noodles were determined using food texture analyzer. The results of the proximate composition showed that malting of cowpea considerably increased the protein content of the cowpea flour. Increasing levels of malted cowpea flour in the blend resulted in the increased protein content and water absorption capacity. Malted cowpea flour blends showed higher values for setback and pasting temperature (at 10% substitution level). Blending of malted cowpea flour with wheat flour had significant effects on the cooking and textural properties of noodles. Composite flour noodles revealed less cooking time, less percent solid loss, low hardness, adhesiveness and cohesiveness. The reduced swelling capacity of flour blends resulted in lower value of cohesiveness. Presence of ingredients other than wheat flour could have caused discontinuity in the gluten network resulting in the faster moisture penetration and hence less optimum cooking time of noodles. Noodles with improved nutritional and acceptable cooking and textural quality attributes can be successfully developed using composite flours based upon refined wheat flour and malted cow pea flours.

