Effect of Different Processing Methods on the Quality Attributes of Pigeon Pea Used in Bread Production

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Abstract : Pigeon pea is a very good source of protein and micronutrient, but it is being underutilized in Nigeria because of several constraints. This research considered the effect of different processing methods on the quality attributes of pigeon pea used in bread production towards enhancing its utility. Pigeon pea was obtained at a local market and processed into the flour using three processing methods: soaking, sprouting and roasting and were used to bake bread in different proportions. Chemical composition and sensory attributes of the breads were thereafter determined. The highest values of protein and ash contents were obtained from 20 % substitution of sprouted pigeon pea in wheat flour and may be attributable to complex biochemical changes occurring during hydration, to invariably lead to protein constituent being broken down. Hydrolytic activities of the enzymes from the sprouted sample resulted in improvement in the constituent of total protein probably due to reduction in the carbohydrate content. Sensory qualities analyses showed that bread produced with soaked and roasted pigeon pea flours at 5 and 10% inclusion, respectively were mostly accepted than other blends, and products with sprouted pigeon pea flour were least accepted. The findings of this research suggest that supplementing wheat flour with sprouted pigeon peas have more nutritional potentials. However, with sensory analysis indices, the soaked and roasted pigeon peas up to 10% are majorly accepted, and also can improve the nutritional status. Overall, this will be very beneficial to population dependent on plant protein in order to combat malnutrition problems.

Keywords : pigeon pea, processing, protein, malnutrition