DEVELOPMENT OF BREAD SUPPLEMENTED WITH SWEET POTATO FLOUR AND ASSESSMENT OF QUALITY CHARACTERISTICS

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ABSTRACT

A research was carried to develop the bread supplemented with sweet potato flour and to assess its nutritional and sensory qualities. The red skinned variety *wariyapola red* purchased in Batticaloa market was used. The fresh roots were peeled, washed and cut into thin slices about 5 mm thickness. The slices were soaked into clean water for 90 minutes after sun dried for 72 hours. The flour of sweet potato is much more difficult to make because the reducing sugars readily released from the starch combine with free amino acids to produce disagreeable colours, odours, and flavours. To avoid this peeled sweet potato were shredded, and the shreds were immersed in water for 90 minutes. The water was changed 2-3 times. The shreds were drained and then were dried in the sun. The chips were then ground into flour using an electric grinder, sieved through 710 nm sieve and packed in plastic bags which were stored in cool and dry place until required for analysis.

This sweet potato flour was added in different amounts as an ingredient during the preparation of breads. The nutritional and sensory properties of breads supplemented with 20%, 30%, 40% and 50% sweet-potato flour and control 100% wheat flour were evaluated. Nutritional analysis was done in sweet potato flour and breads for moisture, total sugar fibre, ash, fat, protein. Moisture content of sweet potato flour was similar with that of wheat flour 7%, sugar content higher than the wheat flour. The fiber content of sweet potato flour was 9.4% higher than that of wheat flour. The ash content of sweet potato flour (1.93%) was higher than that of wheat flour (0.54%), the fat content was only 0.5%, much lower than that of wheat flour (1.29%). Higher fiber content of sweet

potato flour was possibly the reason for a less white colour of the flour. Protein value was highest for the bread supplemented with 30% sweet potato flour. The bread with 50% sweet potato flour had the most fibre content. Six perceived sensory attributes, which could be used to differentiate the taste, colour, texture, flavour, softness and overall acceptability of sweet potato breads, were generated. Nine-point hedonic scale ranking method was used to evaluate the organoleptic properties. The results revealed that, there was significant difference among the treatments for bread taste, colour, texture, flavour, softness and overall acceptability at 5% significant level. The findings of the research revealed that the 30% sweet potato flour contained bread had the higher score in organoleptical point of view compared to other combinations. More or less there was no significant difference between wheat flour bread and 30% sweet potato flour supplemented bread.

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