

PROCESSING OF SWEET POTATO (*Ipomoea batatas* L.) FLOUR USING DIFFERENT DRYING METHODS FOR VALUE ADDITION

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Sweet potato is one of the important and under exploited food crops grown in many countries of the world including Sri Lanka. Although sweet potato production is high in Sri Lanka, methods of utilization and industrial application of sweet potato products are limited. To increase the utilization, drying can be applied as a cost effective processing method. Therefore, this study was conducted to evaluate the effectiveness of different drying methods to produce dehydrated sweet potato powder, and its utilization in value addition. In the first experiment, sweet potatoes were subjected to either oven drying or solar drying to prepare flour. Solar drying method was found as the cost effective and appropriate method for sweet potato dehydration. In the second experiment, solar dried sweet potato flour was mixed with wheat flour and rice flour in ratios of 10% and 15% for bun production and sweet potato flour was mixed with black gram flour at 25%, 30% and 35% for papadam production. Microbial, physico-chemical (moisture content, crude fibre, fat content, total ash, pH) and sensory properties of bun and papadam were evaluated in triplicates. The results of sensory evaluations of both products exhibited significant differences ($p < 0.05$) among treatments. Bun containing 10% and papadam containing 25% sweet potato flour scored the highest rating for overall sensory acceptability. Moisture, fat and crude fibre contents of bun with 10% sweet potato flour were $20.04 \pm 0.71\%$, $1.96 \pm 0.02\%$ and $0.47 \pm 0.02\%$, respectively. Moisture, fat and crude fibre contents of papadam with 25% sweet potato flour were $8.71 \pm 0.14\%$, $1.16 \pm 0.03\%$ and $2.41 \pm 0.03\%$, respectively. In general, pH values of the bun and papadam were within the acceptable limits (5.76 ± 0.03 and 9.26 ± 0.02 , respectively). Hence, sweet potato flour can be produced using solar drying method effectively. Incorporation of sweet potato flour at 10% and 25% may be utilized for preparation of bun and papadam, respectively for excellent sensory and product quality.

Keywords: Bun, Oven drying, Papadam, Solar drying, Sweet potato