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Effects of Processing Technologies on the Quality of Pasteurised Baobab Nectars Produced in Southern Benin

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Abstract

Baobab is a multifunction tree used by many African rural communities. Its different parts (fruit, leaves, bark) are used in food industry and also for medicinal and cosmetic purposes. Baobab nectar, a product derived from baobab fruit pulp is widely consumed in Africa. The present research aimed to characterise the processing technologies of pasteurised baobab nectar, used by Beninese processors, and assess their effects on its quality. For identifying the technologies, a semi-structured interview was realised with the heads of the different processing units, based mainly in the cities of “Abomey-Calavi” and “Cotonou”; this survey was followed by a processing follow up in selected processing units. Based on identified processing technologies and to assess the processing’s effect, pasteurised baobab nectars were produced at the laboratory scale and the derived nectars were analysed for dry matter, Brix value, pH, titratable acidity, colour (L^* , a^* , b^*) and vitamin C. The survey revealed two different processing technologies based on the number of thermal treatments which are the bulk thermal unitary operation and the in-pack pasteurisation. The assessment of the technologies’ effects revealed that the pasteurised nectars were characterised by Brix value, pH, titratable acidity, dry matter, lightness (L^*), vitamin C of respectively, 12.2 ± 0.0 , 2.6 ± 0.0 , $735.0 \pm 22.9 \text{ g L}^{-1} \text{ dw}$, $12.7 \pm 0.0 \text{ g/100 g}$, 74.3 ± 0.1 , $209.8 \pm 8.7 \text{ mg/100 g dw}$ for the technology involving both thermal treatments, and 12.9 ± 0.2 , 2.7 ± 0.1 , $717.0 \pm 21.2 \text{ g L}^{-1} \text{ dw}$, $13.2 \pm 0.3 \text{ g/100 g}$, 73.4 ± 0.3 , $180.1 \pm 7.0 \text{ mg/100 g dw}$ for the technology involving only the in-pack pasteurisation. Both technologies lead to significantly identical ($p > 0.05$) nectars considering the colour, the titratable acidity, the dry matter and the vitamin C content; the two technologies are significantly different on the basis of their Brix value ($p < 0.05$). The vitamin C content decreased by about 40% according to the technology with two thermal treatments, and by about 30% when using the technology with a single pasteurisation. Further studies on this type of nectar produced by local processors, must be extended to sensorial properties for identifying the best pasteurisation techniques that meet scales adapted to processors and consumers’ needs.

Keywords: *Adansonia digitata*, colour, food industry, survey, vitamin C