

Towards the development of sweet potato-based couscous as human food in Benin

Charlotte Fifamè KPOMASSE, Sègla Wilfrid PADONOU*, Jean Louis AHOUNOU

*E-mail : w_padonou@yahoo.fr; segla.wilfrid.padonou@gmail.com

Introduction

Sweet potato (*Ipomea batatas*) is a root crop cultivated and consumed in Benin, and thus contributes to food security of poor families particularly during lean days, although the crop is barely considered in the national agricultural development policies. Sweet potato processing and consumption patterns are very limited in Benin; that may be the basis of the little interest in this crop. Nowadays, an increasing interest was observed among local farmers for sweet potato cropping with the recent introduction of the vitamin A rich orange flesh varieties. The present study aims to suggest a new utilization of sweet potato through its processing into a couscous for both urban and rural consumers.

Materials and Methods

Sweet potato tubers, white flesh variety, were purchased in a local market and processed into couscous according to the diagram below (Fig 1)

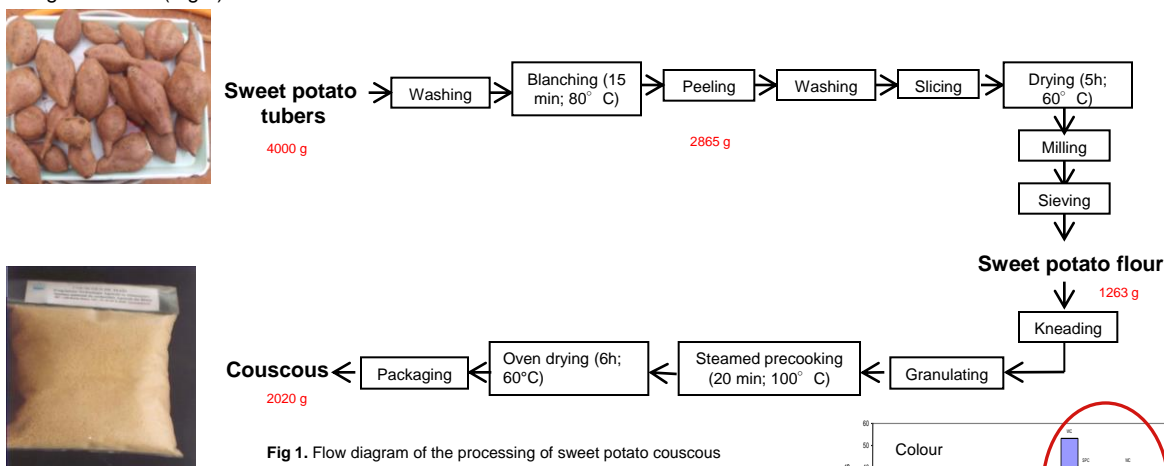


Fig 1. Flow diagram of the processing of sweet potato couscous

During the processing, products obtained from the raw material to the end product were weighted and finally the conversion rate sweet potato – couscous was calculated. The water content of the dry couscous was assessed using the AOAC (1990) method.

The couscous from sweet potato was steam-cooked and submitted to 30 untrained consumers appreciation in comparison with a conventional wheat-based couscous. The comparison was based on colour, taste, texture and flavour of the cooked sweet potato- and wheat-based couscous.

Results

The conversion rate sweet potato tubers – couscous was ~50%. The water content of the couscous was about 11%, below the maximum threshold of 13.5% for wheat-based couscous (CODEX STAN 202-1995)



Fig 2. Cooked couscous made from sweet potato (A) and wheat (B)

The cooked couscous obtained from sweet potato darkened comparing to the wheat-based couscous (Fig 2).

The difference in colour was evidenced by panellists who found significant differences between sweet potato couscous and wheat couscous regarding their colour and their

flavour. Concerning the taste and the texture, both couscous were considered similar. More than 50% of panellists considered the sweet potato-based couscous as good to very good for all the sensory attributes tested (Fig 3).

Conclusion

The study showed the potential of sweet potato to be used in couscous production. Since Benin is one of the West African countries targeted by the Sweetpotato for Profit and Health Initiative (SPHI), this study opens an interesting perspective for sweet potato utilisation, particularly the orange flesh sweet potato which is in introduction in Benin.

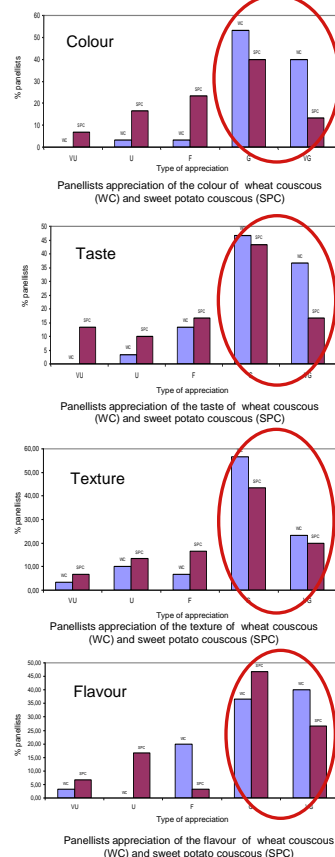


Fig 3. Sensory evaluation results of sweet potato-based couscous in comparison with wheat-based couscous

VU=very unpleasant, U=unpleasant, F=fair, G=good, VG=very good