

Original Research Article

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## Technical Sheet of the Cassava to *Bêdê* Transformation Process

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### ABSTRACT

#### Keywords

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The objective of this work was to promote *bêdê*, which is a food made from the roots cassava in Côte d'Ivoire. To do this, the process of transformation of cassava into *bêdê* was monitored in order to establish a production diagram for *bêdê*. It emerged from this observation that the processing of cassava into *bêdê* covers a combination of steps including washing of the sweet variety roots, retting, pressing, sieving, drying and steaming. At the end of all these operations a slightly yellow product with a lactic taste called *bêdê* is obtained. The preparation of *bêdê* is very long and laborious.

### Introduction

In Côte d'Ivoire, the processing of cassava results in several foods including gari, fufu, placali, *attiéké* and *bêdê*...etc. (N'Zué *et al.*, 2013; Yéboué *et al.*, 2017). Among these dishes, *bêdê* is the least known in Côte d'Ivoire. It is the final product of a long and tedious wet processing of the reddened roots which includes several operations such as peeling, cutting, washing, retting, pressing, sifting, drying and steaming.

The *bêdê* is a yellow semolina, with grains that are not very moist, compact and

characterised by a sour taste. It is consumed exclusively within the family by the *Agnis* and *Baoulé* people living in Côte d'Ivoire in times of famine.

Today, *bêdê* is abandoned in favour of *attiéké* because of a laborious and too long transformation process. With the aim of enhancing the value of this endangered food, this work is part of a process of building knowledge of the different stages in the transformation of cassava into *bêdê* in order to facilitate its expansion on a national and international level.

## Materials and Methods

The study material consists of sweet cassava root taken from a *bêdê* producer.

### Monitoring the process of transformation cassava into *bêdê*

The monitoring of production involved a producer of *bêdê*. The purpose of the follow-up was to observe the processor throughout the preparation of the *bêdê* and to establish a production diagram for the *bêdê*. Thus, work methods, hygiene practices and processing procedures were carefully identified.

## Results and Discussion

*Bêdê* is a food made from the roots of cassava rouie. In the past, *bêdê* was eaten during the lean season and nowadays only people of three ages know of its existence. Furthermore, *bêdê* is consumed by the *Agni* and *Baoulé* peoples, nowadays abandoned to the *attiéké* profile because of its very long transformation process. Its preparation covers a combination of stages including washing the roots, retting,

pressing, sieving, drying and steaming (Figure 2).

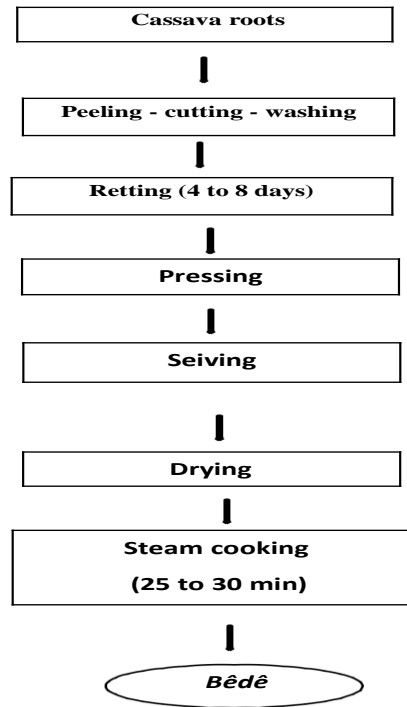
For the preparation of *bêdê*, roots of sweet varieties are used because they soften easily and give a pleasant taste to the food. Next, the roots are peeled and cut into pieces of about 5 cm with a knife to facilitate softening during retting and washed well to remove various impurities and reduce the microbial load (Figure 3). These peeling, cutting and washing operations are also observed during the production of several cassava-based foods such as *attiéké*, gari and cassava flour by Sotomey *et al.*, (2001); FAO, 2012; GERES, 2013.

The peeled, cut and washed cassava roots are then immersed in water in a hermetically sealed container (canary, pot...) for 8 days, this operation is called retting (Figure 4). According to Louembé *et al.*, (2002), cassava-based foods obtained after retting, allows the detoxification and softening of the cassava roots as well as the improvement of the organoleptic characteristics, in particular, the taste, smell and texture of the food.

**Fig.1** Fresh cassava roots of the sweet variety



**Fig.2** Diagram of *bêdê* production



**Fig.3** Peeling, cutting and washing of fresh cassava roots



Fresh cassava roots of the sweet variety



Peeling Cutting - Washing

**Fig.4** Retting of cassava cossettes after 4 and 8 days



Retting 4 days  
Retting 8 days



**Fig.5** Pressing, Sieving and Drying of the cassava paste obtained after rewetting



Pressing by Hand



Pressing by Machine



Driying



Seiving

**Fig.6** Cooking fresh *bêdê* granules



*Bêdê* steamed



Device for cooking fresh granules of *bêdê*

After retting, the pieces of soft or dough cassava roots are pressed by hand or put into jute bags and pressed with a manual screw press for 30 min for a bag containing 10 kg of cassava (Figure 5). This operation removes some of the water and starch from the cassava roots, as indicated by GERES, 2013 during gari production in Benin. The cake obtained is passed over a raffia fibre sieve with variable mesh size by a circular hand movement to make the compact mass of the pressed cassava crumbly and, above all, to remove the fibres and pulp fragments that are still hard (Figure 5). The resulting semolina is dried in the sun on vans, plastic sheets or metal trays for a period ranging from a few minutes to half an hour (Figure 5). During this operation, the producer stirs the powder by hand to homogenise the drying process. This operation is also observed by Sotomey *et al.*, (2001) during *attiéké* production. According to this author, this operation allows the evaporation of water as well as the elimination of cyanogenetic carbohydrates.

To finish cooking is done with steam in a device consisting of a pot containing water supporting a perforated aluminum bowl. The kettle is well nested in the perforated bowl to avoid steam leaks. It is placed on a fireplace

using wood or butane gas as fuel (Figure 6). The fresh pellets from the *bêdê* are poured into the colander as soon as steam appears. During cooking, the semolina is occasionally turned over with a wooden or aluminium spatula. Cooking time is about 15 to 30 minutes, depending on the intensity of the fire and the amount of semolina to be cooked. Cooking promotes the removal of hydrocyanic acid, but the rate of hydrocyanic acid removal depends on the length of cooking time (Conn, 1979). Before cooking, some producers prefer to add a few ingredients such as chilli, oil, salt and even ripe banana flour to bring a particular taste to the final product because *bêdê* is a dish that can be eaten without accompaniment. The *bêdê* thus obtained comes in the form of a yellow semolina, with moist, compact grains and a lactic taste (Figure 6).

In conclusion this study aimed to establish a diagram for the production of *bêdê* from Côte d'Ivoire in order to facilitate its expansion nationally and internationally. The preparation of *bêdê* is almost manual, very long and laborious. It would be necessary to mechanize the processing stages.

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## Conflict of interest

Authors have no conflict of interest regarding the publication of paper.

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