

A Crusher for Revitalizing Local Cereal Production

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Considered staple foods in rural areas of Senegal, couscous and *arraw* are rarely consumed by urban dwellers. Yet, these millet-based foods can be used in a variety of protein-rich dishes that, when properly prepared, are very popular among the Senegalese.

For evidence of this, pay a visit during the Islamic holy month of Ramadan to the home of Ndella Sène in Fass, a district of metropolitan Dakar. This 47-year-old native of the Fatick region makes her living by manually processing millet into couscous and arraw. This traditional occupation, handed down from mother to daughter in Senegal's villages, has always been the exclusive preserve of women, particularly in central Senegal. Today, few city women know how to roll the millet flour into couscous and arraw. This is the key to Ndella's success — and she has agreed to transfer her skills to housewives who either do not know how to make couscous or arraw, or do not have the time to devote to this work.

Basic elements

Between them, couscous and arraw constitute the basic elements for many traditional Senegalese dishes. Moreover, most families still use them as a basic ingredient in special meals for family and religious festivities, such as baptisms, marriages, wakes, or at the end of fasting. In urban areas, however, there are few housewives today who will include millet-based dishes on their family menus, despite their high nutritional content. This reflects in part the declining output of millet, due to the drought that has afflicted the Sahel region in recent years, as well as the hard work involved in transforming millet flour into couscous and arraw. As a result, many Senegalese now prefer rice and even products based on imported wheat flour.

For several years, researchers at the Institute of Food Technology (ITA) have been working on a technology package for processing millet flour into arraw and couscous. After developing a machine for rolling millet into couscous, Dr. Ababacar Ndoye's team, composed of polytechnical engineers, social economists and marketing experts, has now taken another major step forward.

Complete technology package

In partnership with Techniques Industries, Multi-Techniques Industries and the Centre for Renewable Energy Studies and Research (CERER), Dr Ndoye's team has developed a complete technology package, consisting of a grinder (roller), an electric dryer, a gas dryer, and a grading device for arraw. With a capacity of 26 kilograms per hour, this package is attracting great interest from private entrepreneurs, women's groups and consumers — who face a devalued local currency, unaffordable prices for imported rice and other products, and limited access to imported equipment.

For now, ITA is working to transfer the technology package to private promoters. Within the last six months, it has carefully selected a limited number of small and medium-sized enterprises in the cereals-processing business to test the capacity of the equipment. Craftsmen have also been trained to make spare parts for the devices. A survey involving both users and consumers has produced conclusive results: millet flour can be converted into arraw granules by wetting, mixing, rolling,

drying it at 60° C, and grading it. Packaged in ready-to-cook plastic pouches, the granules are now on sale at all supermarkets in Dakar and surroundings. Specialty grocer shops — not only in the region but also in Europe and the United States — carry the product, and millet-based dishes can be found on the menus of numerous restaurants in Dakar.

Taste tests

For Mrs Doumouya, a scientist at ITA, her research team has won its bet: “to bring urban consumers back to a taste for local cereals.” As she sees it, “not only does the new process save time and raise productivity in the transformation of millet into arraw, it also lets consumers avoid risks of contamination of various kinds that are frequent in rolling and drying.” Consumers who were surveyed by the team agree that the arraw granules produced this way “taste just like the real home-made arraw, and it handles perfectly and maintains its consistency throughout the cooking process. Moreover, there are no problems in storing and keeping it.”

To those who reproach her team for competing with traditional home producers of couscous and arraw, Mrs Doumouya explains that “the technology package has been designed in close collaboration with women, and has taken full account of social considerations, of basic needs, of consumer preferences, and of the technical and economic viability of the equipment.” Moreover, ITA is now examining ways to facilitate access to the new equipment by women’s groups.

Family menu

While the mechanical rolling technology owes its development to research, the next major challenge is to help couscous and arraw make their way onto the daily family menu, through a sound marketing and communication plan, and an appropriate pricing policy.