

Soybean Daddawa: an innovation by Nigerian Women

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Throughout the West African savanna, daddawa (a Hausa word, also dawadawa) or 'local maggi' is eaten regularly in soups and stews, usually together with dumplings and porridge made of sorghum or millet. Daddawa is a tasty and protein-rich seasoning which is used like stock cubes or cheese in European and North American cooking. It is known as soumbara in French-speaking countries of West Africa, and has countless local names as well.

Thousands of West African women earn a cash income by making daddawa in low-capital-input, small-scale enterprises at home and selling it at local markets. Traditionally, daddawa is made from locust beans from the wide-canopied *Parkia biglobosa* and *P. Clappertoniana* (*Syn. P. Filicoidea*) trees which shade West African farmlands from the northern edge of forest belt to the southern edge of the Sahel. Each locust-bean tree is individually owned, usually by men who hold the usufructory rights to the plot in which the tree is standing. A woman must either buy the beans or buy beanharvesting rights from the tree owner.

Daddawa processing

To make daddawa, the locust beans are first boiled for at least 24 hours. Water must be added frequently. The cooked beans - still quite firm - are then mixed with wood ash and pounded and washed several times to remove the seed-coats. The beans are boiled for

another 3-4 hours until they become softer, and are then spread in a large flat basket, covered with leaves and allowed to ferment for two days. On the third day, the bean mass is transferred to a deep bowl and allowed to ferment for another 24 hours. It is then spread out again in the large flat basket and partially dried in the sun for several hours, before it is pounded with mortar and pestle into a paste and formed by hand into balls or wafers. After the daddawa has been dried thoroughly in the sun, it has very good keeping qualities. It can be stored in earthen warepots for up to two years, according to women who make and use it. This entire daddawa production process, as observed in central Nigeria, requires about six days. Some other variants of daddawa-making elsewhere in West Africa are described by Campbell-Platt (1980).

Indigenous innovation

Probably because daddawa is an indigenous food sold at local markets and traded via traditional routes rather than through modern commercial channels, it has received next to no attention in economic statistics. Similarly, the locust-bean tree has been neglected in agricultural/forestry research and extension. Nevertheless, startling changes are occurring in the daddawa business, at least in Nigeria. The major daddawa market in Nigeria is almost exactly in the centre of the country in Kafanchan (Knipscheer & Ay 1982). From there, Nigerian traders transport sacks of the strongly-smelling

brown-black daddawa by the truckload to the large urban markets in the south and north of the country and also across the border into Niger. But within the last few years, the daddawa sold at Kafanchan is increasingly a product not of locust-bean but rather of soybean. This innovation can be credited entirely to the ingenuity of Nigerian farm women, who have developed a soybean processing technique which is considerably more efficient in terms of time and inputs than locust bean processing. The women fry the soybeans, grind them to remove the skins, then boil them only once for about six hours, e.g. less than one-fourth of the total cooking time required for locust beans. The soybean fermentation process, like that of locust beans, takes three days. The great saving in the eyes of the women is the reduced cooking time and, thus, the reduced requirements for cooking water and fuel. Another advantage of using soybeans for daddawa is that the women can now grow their own beans in the fields traditionally allocated to them by their husbands or fathers, instead of having to buy locust beans or tree harvesting rights. Soybean was introduced into Nigeria early in this century as a cash crop for export. Small-scale farmers - primarily women - incorporated soybean into their traditional cropping systems, usually intercropping it with sorghum and/or maize. Nigeria is now the largest producer of soybean for food in Western and Central Africa, and almost all the Nigerian soybean production is used to make daddawa (Root et al 1987).

The area around Kafanchan and stretching southeast to the new federal capital of Abuja has now become one of the country's major soybean producing areas (Knipscheer & Ay 1982). A survey in Abet, a village area of the Kaje ethnic group about 30 km from Kafanchan, revealed that almost one-fourth of the total cultivated land is now devoted to soybean (Powell 1983). Soybeans have become so well embedded in the local farming system that Abet farm women even refer to their 'traditional' soybean variety, when comparing it with new varieties from research institutes and government services. Beans as field crops are traditionally grown by women, but soybean production has become so lucrative that also men have begun to grow and sell soybeans.

Woman-to woman-extension

In Abet, knowledge about the technology of soybean growing and processing has spread from woman to woman - and not only within the Kaje



Locust-bean trees on farmland in central Nigeria.



Kaje woman spreading out her soybean harvest to dry before threshing.

ethnic group. Also women in the families of Fulani cattle-keepers who settled in Abet have benefited from the Kaje women's 'extension service'. Kaje women have given neighboring Fulani women handfuls of seed, encouraged them to try the seed out in their kitchen gardens, advised them about cropping techniques (e.g. timing the harvest before seed shattering), and shown them how to ferment the beans to make daddawa for home consumption (Waters-Bayer 1988).

There are no formal groupings, structures or procedures for this research and extension work by the Nigerian farm women. Their activities continue largely unseen by the outsiders who often consider themselves to be the major (or even sole) catalysts of development. The shift from locust bean to soybean for daddawa production would be a fascinating subject for the study of indigenous innovation in developing appropriate techniques of growing and processing a new food crop and of informal farmer-to-farmer extension.

Ecological consequences?

However, another aspect of this shift may be a cause for concern. What will be the ecological consequences for farming systems in the West African savanna if soybean fully establishes itself as a substitute for locust beans? The locust-bean tree plays a vital role in stabilizing the soils in farming areas and cycling nutrients from deeper soil layers, as well as by providing shade (Campbell-Platt 1980). As a leguminous plant of the sub-family *Mimosoideae*, it probably also fixes atmospheric nitrogen (Cobley & Steele 1976). The locust-bean tree has several economic uses, e.g. the yellow pulp around the seeds is a high-energy food which is also rich in vitamin C; the pods and bark are used in traditional medicines; an extract from the pod shells is used to harden beaten earth

floors and as a glaze for pottery; and the bark yields red tannin used for dyeing leather. However, its primary product has been its beans, and its other economic uses are waning in importance in the wake of 'modernization'. If the beans lose their traditional economic importance as the raw material for daddawa, farmers may lose interest in maintaining an upper storey of locust-bean trees in their fields.

The kaje, like many other farmers in West Africa, have a long tradition of protecting seedlings of economic trees such as the locust-bean tree. In conversations about 'old times', the Kaje tell how they used to plant and transplant locust-bean trees in order to have them in their fields near their homes.

However, a recent survey of trees and shrubs in the Abet area revealed that the stand of locust-bean trees on farmland is old, and regeneration is poor (Bayer 1987). Special efforts may have to be made by ecologists and agriculturists to promote regeneration of locust-bean trees or trees which play a similar ecological role in order to help maintain soil productivity in the savanna.

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References

- Bayer W. 1987. Browse quality and availability in a farming area and a grazing reserve in the Nigerian subhumid zone. Report to the International Livestock Centre for Africa (ILCA) Subhumid Zone Programme, Kaduna.
- Campbell-Platt, G. 1980. African locust bean (*Parkia* species) and its West African fermented food product, daddawa. *Ecology of Food and Nutrition* 9: 123-132.
- Cobley, L.S. & Steele, W.M. 1976. An introduction to the botany of tropical crops. 2nd ed. London: Longman.
- Knipscheer, H.C. & Ay, P. 1982. The potential of soybeans in Nigeria and the results of an IITA survey in two principal production areas. Ibadan: International Institute of Tropical Agriculture (IITA).
- Powell, J.M. 1983. A note on soybean production and utilization in the Abet area, central; Nigeria. Kaduna: International Livestock Centre for Africa (ILCA) Subhumid Zone Programme.
- Root, W.R., Oyekan, P.O. & Dashiell, K.C. 1987. West and Central Africa: Nigeria sets example for expansion of soybeans. In: S.R. Singh, K.O. Rachie & K.E. Dashiell (eds.), *Soybeans for the tropics*. Chichester. John Wiley & Sons, pp 81-85.
- Waters-Bayer, A. 1988. *Dairying by settled Fulani agro pastoralists in central Nigeria: the role of women and implications for dairy development*. ISBN 3-8175-0033-5, 327 pp. Wissenschaftsverlag Vauk, Kiel, P.O. Box 4403, 2300 Kiel 1, F.R. Germany.
- Gubbels, P.A.. 1987. *Case study: Women Farmers, cultivation and utilization of soybeans among West Africa women through family health animation efforts*. World Neighbors, 5116 North Portland Avenue, Oklahoma City, OK 73112, U.S.A.



Fulani woman buying daddawa at a market in central Nigeria.