



## Biochemistry Involved in Dadawa Fermentation

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### DESCRIPTION

Deliberate fermentation of food by humans has been around since prehistoric times and may be the oldest method of preserving perishable foods. The nutritional value obtained from fermentation is another benefit of fermentation. Iru is one of the most important food spices in Nigeria and many countries in West and Central Africa. In the West, it is used as a nutritious condiment with grain sauces, similar to bouillon cubes, and can be used as a meat substitute. Dadawa (Iru) is made from African carob seeds, so it is rich in fat (39%-40%) and protein (31%-40%), making a significant contribution to energy intake, protein and vitamins, especially riboflavin in the West and Central African countries. Dadawa or Iru is made from the seeds of the carob (*Parkia biglobosa*), a legume found in the savannah regions of Africa, Southeast Asia and South America. Dadawa is made by natural non-inoculated solid substrate fermentation of cooked and extracted cotyledons. The main fermenting organisms are bacillus and staphylococcus. After fermentation, the bean mass is dried in the sun and shaped into round balls or flat cakes. Due to its high protein content, it has great potential as an important protein source and as a base ingredient in dietary supplements.

The fermentation of Dadawa is very similar to that of Okpehe, which is made from *Prosopis africana* seeds and Ogiri, which is made from melon seeds (*Citrullus vulgaris*) and castor beans (*Ricinus communis*). Although the organisms responsible for this food flavor and other fermentation have been identified, they are of little significance in terms of industrial or commercial production.

Boil beans in excess water for 12 hours until soft. The detached cotyledons are then boiled for an additional 2 hours to soften them. The cotyledons are then wrapped in a sufficient amount of banana leaves, covered and left to ferment at room temperature.

Other biochemical changes that occur during Dadawa fermentation include hydrolysis of indigestible oligosaccharides present in African carob, particularly stachyose and raffinose, to monosaccharides by  $\alpha$  and  $\beta$ -galactosidases, vitamin B (thiamine and riboflavin), synthesis of vitamin C, anti-nutritional factors (oxalate and phytate). An improved method for the industrial production of dadawa includes pounding African carob in a ball (disk) mill, in a pressure retort he boils it for 1 hour, inoculates with a *Bacillus subtilis* culture, ferments the beans, dries them and grinds them into powder. Fermented African oil bean seed (*Panthalæthra macrophylla* benth). Ugba is an indigenous fermented food and a popular staple food in eastern Nigeria. Rich in protein and other minerals, it is obtained through solid-state fermentation of African oil bean seeds.

It is traditionally obtained from the fermentation of oil bean seeds. It contains up to 44% protein made up of at least 17 of the 20 amino acids, and protein digestibility and utilization increases with fermentation increase. Boil oil bean seeds for 3 hours, peel and boil, slice the boiled seeds (thickness 0.5 mm-1 mm), boil for 2 hours, drain, wash with water 3 times, soak in cold water 4 times Bitter It takes hours to get rid of and tasteless. The cut beans are wrapped in enough banana leaves (*Musca sapientum*), packed in clean containers, covered and left to ferment at room temperature.

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