

PRECAD

Crop research project



Local solutions for improving diet - Baobab and baby gruel

People suffer not only from getting too little to eat, but also from a lack of important nutrients. Many children and mothers in developing countries lack vitamin A, iron, iodine, and zinc. Our Malian partners are trying to improve the qualitative nutrition. In a first place, we have been working with the baobab and baby gruel. The dietetic laboratory at the *Institut d'Economie Rurale* and the Research Station at Cinzana investigated the nutrient content of the leaves and fruit of the baobab tree, as well as an improved flour for preparing babies' gruel

Vitamins A and C from the baobab

The baobab tree, also known as the monkey-bread tree, is found in the semiarid regions of Africa. It usually grows wild, and its fruit and leaves are produced during the rainy season. Both are traditionally used to prepare food. The leaves are plucked at the end of the rainy season, before the tree drops them.

The leaves are mainly used as an ingredient in the sauce served with the daily meal. They are dried in the sun, and later pounded and made into powder. Previous research has shown that powder made from leaves dried in the shade has twice as much provitamin A (beta-carotene) as sun-dried leaves. In addition, smaller, younger baobab leaves have 20% more vitamins than larger ones. These findings were based on vitamin analyses financed by the "Sight and Life" study group,² and accordingly a radio campaign was used to inform people that smaller leaves dried in the shade were more nourishing - which is particularly important for ensuring a good-quality diet for children and mothers.

Another area of activity at the Research Station consists of breeding baobab varieties with a high

level of vitamin C in their fruit, and making these available to the population and to plantations in the Sahel. The dried and powdered pulp of the fruit is mainly used to produce drinks.

Improved flour for nourishing baby gruel

Many babies and infants are malnourished, because mothers neglect the diet of their youngest children after the nursing period - assuming that the children are past the delicate age - and they go back to doing more field work or earning an income. The traditional millet gruel that mothers usually give their children is not very nutritious. The dietetics laboratory therefore developed a form of flour that can be locally produced from millet, cowpea (niébé), and malt, with a higher energy value.

After a six-month trial with the test groups (each consisting of 20 mothers and their babies aged 6-12 months, in three different villages), all were very satisfied with the new flour used. There were fewer illnesses, and the children were less dependent on their mother and made less noise. During regular physical examinations, no malnourishment was found in these children. Paying attention to the dosage (water to flour) is decisive for the energy value of the gruel.

All three groups of women are now producing the flour themselves. One problem with producing it is that not enough cowpea is available. As an initial step, the Research Station at Cinzana has now provided seed so that from next year onward the women will be able to obtain their own seed from the harvest. To spread the use of the flour more widely, women are being trained to act as representatives and pass on their knowledge of the flour to other women in the surrounding villages. This is already happening to some extent, since other women have been asking members of the test groups about the flour. The introduction of the flour will also be incorporated into a more general awareness campaign that in addition will deal with basic hygiene measures during food preparation, etc.

1. The dietetic studies were supervised by Dr. J. Scheuring (Syngenta) and other dietary experts (from Hoffman-La Roche, Gerber, Nestlé, and a university in New Zealand).
2. The "Sight and Life" study group, initiated by Hoffmann-La Roche, is dedicated to the problem of vitamin A deficiency in developing countries. The condition is particularly common in children. Vitamin A deficiency causes visual disturbances, and can lead to blindness. The study group provides various types of support for projects aimed at relieving this situation (www.sightandlife.org).

