

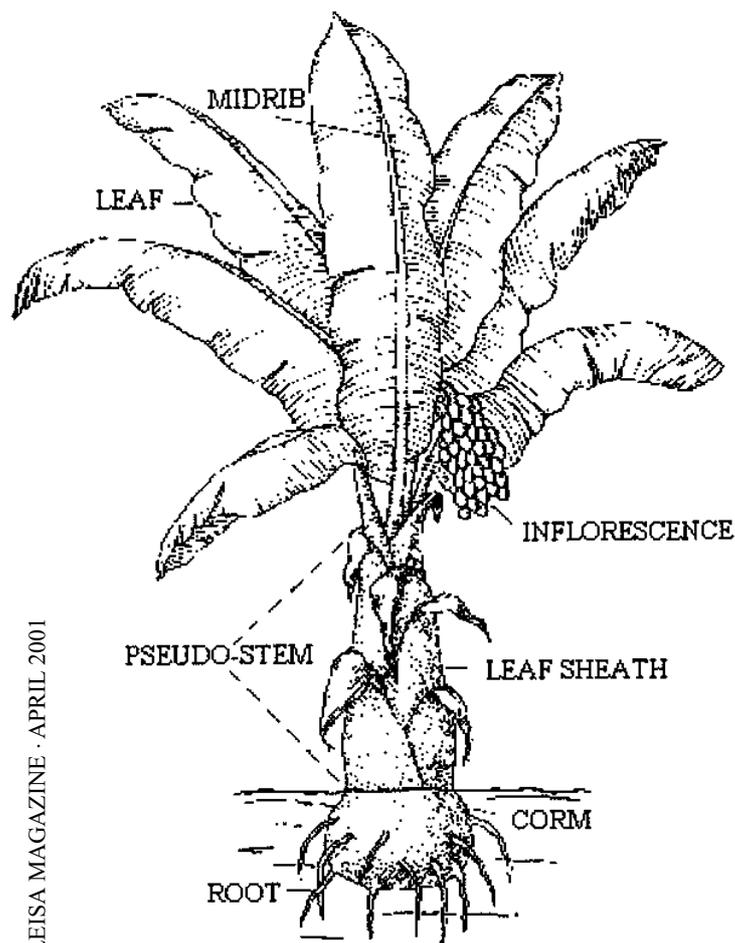
Enset - the tree against hunger

In the crisis years of the 1980s, parts of Ethiopia survived famine due to the utilisation of enset in subsistence farming. Also known as false banana, enset (*Ensete ventricosum*) helps to feed about ten million people in Ethiopia and Eritrea. Enset-based systems are among the most sustainable indigenous farming systems in Africa.

Because the development agendas of Western aid agencies still focus on cereals, enset continues to be largely ignored by development and research. Recently, the enset research team of the American Association for the Advancement of Sciences with Awassa Agricultural Research Center, Kyoto University Center for African Area Studies and the University of Florida has written a preliminary report on their research, which forms the basis of this article.

How it is grown

Enset is related to and resembles the banana plant (Plate 1) but is somewhat larger, up to 10 m tall with a pseudostem up to 1 m in diameter. Large quantities of carbohydrate-rich food come from its false stem and its underground bulb (corm). In spite of the extensive distribution of wild enset in the tropical belt, it is only in Ethiopia that the plant has been domesticated. Domesticated enset is planted at elevations ranging from 1,100 to more than 3,000 m receiving annual rainfall of about 1,100 to 1,500 mm, most of which falls between March and September. The average temperature of enset growing areas is 10 - 21°C and the relative humidity is 63 to 80 %. Enset grows well in most soil types, if they are sufficiently fertile and well drained.



Enset tree

There are 4 main sub-systems. In one sub-system enset is the staple food grown in dense plantations. Cattle are important to produce manure to fertilise enset fields. Other sub-systems combine enset, cereals and tuber crops in different combinations.

How it is used

The major foods obtained from enset are *kocho*, *bulla* and *amicho*. *Kocho* needs a lengthy period of processing and preparation, which is carried out by women. The first stage involves removing the leaf stalks and grading of the corm. Then the fibres are separated out and the pulp is crushed to extract the starch. This is put in a pit about 1.5 m deep and 1 m diameter, wrapped airtight with enset leaves before being packed down with stones. It is then allowed to ferment - a process, which may last anything from 4 months to three years. The pit is opened at intervals to allow aeration, and the enset leaves are replaced. This is repeated until the desired fermentation quality is reached or the food is needed. Finally, the fermented starch is dried and treated as flour. This can be used to prepare a pancake-like bread *ountcha*, which is eaten with milk and cabbage. *Kocho* is increasingly exported to urban markets.

Bulla is the unfermented starch of a mature plant, which can be prepared as a pancake or porridge. *Amicho* is the corm of a young plant, which is boiled and consumed as other tuber crops. Due to their low protein content these foods are eaten in combination with protein rich products like milk. The fibre is used to make sacks, bags, ropes, mats, construction material and sieves. Fresh enset leaves are used as food wrappers, serving plates and for stall feeding of cattle. There are many other uses, e.g. for medicines. A measurement on 34 farms showed an average annual yield of about 5,000 kg of *kocho* per ha. in addition to the other products.

Improving food security

Enset in the farming system contributes significantly to the stability of the food supply in several ways. Enset can: 1) be stored for long periods; 2) be harvested at any time during the year; 3) be harvested at any stage over a several year period; and 4) survive stress years that reduce other food sources.

During the 1984-85 famine, when cereal farmers from southwestern Ethiopia migrated from their villages in search of food, they learned how to cultivate and process enset. Returning home, they introduced enset agriculture, and *kocho* became an important part of their diet. In 1992, when cereal crops were severely damaged, they were able to avoid famine because of their increased dependence on enset. It is expected that enset can be introduced in many other regions to improve food security. However, this needs further study and work on trial-demonstration farms. Further research is needed on: diseases, mechanisation of processing, improvement of the livestock component, production of protein-rich food crops in enset systems, marketing of *kocho* and sustainability of enset farming under increasing population pressure and marketing.

From: Brandt SA, Spring A, Hiebsch C, McCabe JT, Tabogie E, Diro M, Wolde-Michael G, Yntiso G, Shigeta M. and Tesfaye S. 2001. **The 'Tree Against Hunger': Enset-based agricultural systems in Ethiopia.** The report with an extensive list of references can be downloaded from <http://www.aaas.org/international/ssa/enset/> or requested from: The Africa Program, AAAS Directorate for International Programs, 1200 New York Avenue NW, Washington, DC 20005, africa@aaas.org Fax: 202-289-4958.