

Enset is a staple food for millions of Ethiopians. Scraping the leafsheaths to produce gola uncha for enset bread is very strenuous work.



Photo: Ann Waters-Dayer

Enset, also known as false banana, is a staple food for about 10 million people in southwestern Ethiopia. But farmers are largely alone in their efforts to improve enset production, as scientists have paid little attention to this crop. The Farmers' Research Project set out to discover how farmers grow and use enset, and took a special look at the complex and strenuous work involved in enset processing. This is the first step in seeking ways to ease a main task of the women.

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Enset (*Ensete ventricosum*) is a crop with many uses, for human food, for livestock feed, for industrial fibre, as binding material in fences and house-building, for mattresses and seats, as packaging material, and as substitute for plates or umbrellas. We deal here only with its use as food in the Welaita District (5000

km² in area with about one million people) of southwest Ethiopia. Figure 1 shows the principal parts of an enset plant. The most important for human food are the pseudostem and its leafsheaths, the corm (underground bulb) and the central shoot.

High energy producer

Enset thrives in subhumid areas, although it can also be found in drier climates. Its preferred altitude range is 1500-2800 m. It grows best on well-drained soils that are rich in organic matter with a pH between 5 and 7. The plant has a life cycle of 4-7 years (more at higher altitudes) and produces seed once, at the end of its life. It can be grown from seed but is normally reproduced vegetatively (cloning) after harvesting the plant, by transplanting suckers that emerge from splitting and burying the corm.

Enset grows in dense groves surrounding farm homes. The plants can reach a height of 4-8 m or even more, at a density of up to 3000 plants per hectare. Welaita farmers recognise over 100 different varieties and divide them into two classes, "female" and "male". This has nothing to

do with reproduction; it is based on traits such as strength and taste.

The plant is most productive if harvested at maturity, but can be harvested at any time after about 2 years of age. Expressed on an annual basis, enset left to maturity in Welaita yields 1.3 - 3.5 more edible energy per hectare than peasant-grown maize, which yields about 3000 kg grain per hectare (Kefale & Sandford 1991). The edible product is high in energy (190 kilocalories/gram) but low in crude protein (2-5% by weight).

Gender issues

Both men and women are involved in growing enset, but in Welaita it is most commonly associated with women. Men do the cloning and much of the replanting, and usually decide where the enset is grown. Women are involved at this stage in giving their opinion on variety selection, carrying seedlings, manuring, thinning and sometimes also weeding.

Women are solely responsible for harvesting (men are not allowed near harvesting women) and processing enset. The senior woman of a household decides when a plant is to be harvested and how its products are to be used, what will be eaten at home and what will be sold. The income is hers to spend.

Range of food products

Enset appears as a food at most meals. Various food products of different quality are made from different parts of the plant, but may be mixed to produce a meal. *Gola uncha* is made out of the outer sections of the pseudostem (the leafsheaths) and *godetta uncha* is made from the pounded corm and lower inner stem. These are the most plentiful products and are used to make the most common food from enset, the flat bread-like *ukedo uncha*. The uncha is made into dough, wrapped in enset leaves and cooked on a griddle.

Other foods can also be made from these products, including *batchera* which is eaten at the major New Year festival. *Batchera* is usually made from *godetta uncha* by adding milk, butter and onions after roasting the uncha on a griddle.

Itima is the highest-quality product and is made by straining off a starch extract from the gola and *godetta uncha* before fermentation. *Itima* can be cooked with milk and butter to form the most prestigious food-stuff *mutua*. This is served only on special occasions or to important visitors.

Boiled fresh corm is also eaten. It is an inferior food, compared with other enset products and other staple foods. The corm comes from an immature plant, usually about 3 years old, often a "female" one

(supposedly less fibrous and "sweeter").

Some varieties of enset and certain products are thought to have medicinal properties. The corm of an immature clone is fed to someone with a broken bone. A porridge-like product called *aereta*, made from itima, is fed to a new mother to help clean out the uterus and enable her to produce more breastmilk. Newly-circumcised boys and girls are also fed *aereta*.

Laborious harvesting

Harvesting is usually done by small working parties formed by groups of friends and close relatives (often through the female line). This labour may be given free or in return for payment, depending on the wealth of either party. The payment may be in cash or a share of the enset products. Harvesting is very labour-intensive. Depending on the size of the working party, it may take a day to harvest as few as two enset plants.

After being cut off, the leafsheaths are taken to a scraping board propped up against another enset plant. One at a time, the sheaths are bent over a line of enset fibres stretched across the top of the board, and are scraped from top to bottom with a tool made from a split bamboo stalk.

The leafsheaths from the lower pseudostem can be scraped until only the fibres are left, which are then left to dry. The sheaths from higher up the pseudostem are of poorer quality, and less can be taken from them. The topmost section of the sheaths is not scraped. The leaf substance which is scraped off falls into a pit dug at the base of the board and lined with enset leaves. This forms the main enset product, gola uncha.

Complex fermentation

The further processing of various parts of the harvested plant is extremely complicated, as the following description shows. No part of the plant seems to be wasted.

Godetta uncha is made from the inner hardened section of the stem (*wosa*) of a mature plant and from the corm of both mature and immature plants. Both *wosa* and corm are reduced to a pulp by pounding with a toothed wooden pestle, and then

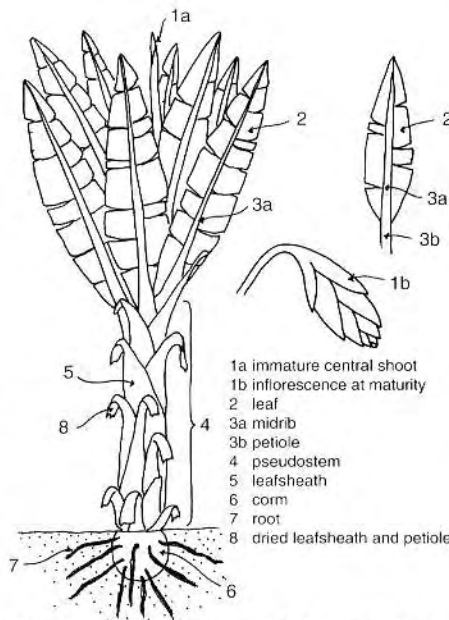


Figure 1: The principal parts of the enset plant

removed and put in a lined fermentation pit. The pounding continues until the senior woman declares that enough corm has been eroded to leave only a thin outer layer.

The pulp produced from both the corm and the pseudostem (godetta and gola uncha) may be strained to produce the starch extract, itima. This is fermented in a separate lined pit.

A mixture of herbs, orange, banana, onion and garlic are rubbed into the sides of the hollowed-out corm to facilitate fermentation. The leafsheaths from the top of the plant are added, after at least some of their bitter skin has been removed. Then *pura* is added.

Pura is made from immature enset, about a year old, by burying a section of pseudostem in a shallow hole in the ground. It is left to ferment for about 15 days in the wet season, but for a month in the dry season. The women can tell when it is ready by the smell.

Careful protection

Both the corm containing the *pura* and the pits with gola uncha, godetta uncha and itima must be sealed. The enset leaves lin-

ing the pit walls are folded over to cover as much of the top as possible. More leaves are placed over the top, tucked in down the sides and fastened with dried leafsheaths tied around them. The corm is sealed in a similar way. Sometimes large leaves are folded into pyramids over the closed pits and corm to give further protection from rain.

The pits are left for about 15 days in the wet season, longer in the dry. They are then opened so that the *pura* fermentation mixture from the corm can be divided among them. The fibrous solids in the corm (which came from the top of the pseudostem) are squeezed and added to the gola uncha. The remaining liquid and the solids scraped from the bottom of the corm are added to the itima and godetta pits. These are covered again and left to ferment. It is unusual for the pits to be left for more than two months, although some women may let enset ferment for up to 18 months.

Final processing

Before use, both godetta and gola uncha still have to be refined. This is done immediately before cooking. First, as much liquid as possible is removed by wrapping the uncha in enset fibres and wringing it out, like wet clothes are wrung. The uncha then forms a crumbly substance which can be pulled loose from the fibres.

At this point there are still many fibres which need to be reduced to a manageable size. The uncha is pounded into a mass and chopped rapidly. The resulting crumbs are kneaded and the mass reformed to be chopped again. This is done repeatedly until the uncha is considered fine enough. For the finest food products, those which can also be made from itima, the powder must be sieved to remove any fibres still intact.

Further research needed

Welaita women stress the hard work of harvesting and processing enset. Not only is much time and energy required; also, most of the work has to be done in the enset plantation rather than in the house or its forecourt where, eg, maize can be processed.

The next step is to find out which operation in enset harvesting and processing the women regard as most troublesome and how their work could be eased, eg, by designing and testing a better scraping technique. In developing appropriate technology for this key crop in the Welaita farming system, it will be important to ensure that women do not lose their present influence in deciding how the enset products are used.

Reference

- Kefale Alemu & Sandford S. 1991. *Enset in North Omo*. FRP Technical Pamphlet 1. FARM Africa, Addis Ababa, 49 pp.

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Farmers' Research Project

Farmers were the first agricultural scientists, and have been developing agriculture over thousands of years. But in many countries there is now a huge gap between formal agricultural research and farmers. The Farmers' Research Project (FRP) being implemented in southwestern Ethiopia by the nongovernmental organisation (NGO) FARM Africa promotes partnership between local farmers, Ethiopian researchers and various NGOs involved in agricultural development. The aim is to increase the capacity of all partners to carry out successful farmer-oriented research.

All 7 scientists in the FRP team were born in Ethiopia and are committed to local development. They bring together NGO and government staff to do diagnostic studies of farming systems; encourage farmers - both men and women - to try out "best bets" to improve these systems and encourage scientists to carry out needed back-up research; hold courses in Rapid Rural Appraisal and On-Farm Research; arrange seminars and workshops to bring farmers and researchers together; and prepare technical pamphlets which inform non-farmer partners about farmers' knowledge and needs, eg, in enset production.