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**Konso agriculture and its plant genetic resources**  
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(Excerpt)

**Introduction**

Konso is the name of a relatively small area (approximately 500 sq km) situated in south-west Ethiopia at a latitude of 5°15' N and a longitude of 37°30' E, which is populated mainly by the Konso people. The topography is characterized by rugged and stony highlands, cut by deep valleys that enter into the heart of the country. The main agricultural area ranges in altitude from 1400 to 2000 m above sea level and the climate is of the dry montane type with temperatures ranging from below 15 ° C at night to 32 ° C during the day at the hottest time of the year. The Konso Highlands run across the Rift Valley in an east-west direction and are situated in the dry belt of Ethiopia with an unreliable rainfall not exceeding 800 mm per year. There are two rainy seasons: the big rains are concentrated in March and April and the small rains fall around October and November. In general, the rains come in the form of violent thunderstorms which seldom last more than two hours (Hallpike, 1972). The Sagan River forms the eastern and southern borders of Konso, while to the north the great plains of Gomida and Lake Shamo and, more to the west, the Gidole mountains and the Woito Valley form natural boundaries. The Konso are a small tribe of about 60000 people (Minker, 1986). Their language belongs to the East Cushitic group (Hallpike, 1970). The Konso have evolved their remarkable (agri)culture in a high degree of isolation during the many centuries they have occupied the area. Their neighbours are mainly pastoralists (e.g. the Borana in the south) or agriculturalists (among others the Gauwada tribe in the west) and most of them belong to the Oromos. ...

**Plant genetic resources and their uses**

The most striking feature of Konso agriculture is the high number of plant species used and the way they are intercropped (see Table 1). By integrating multi-purpose trees into this system the Konso have created an indigenous type of agroforestry, well adapted to the prevailing dry conditions. Hardly any unused piece of land will be found around the villages and, throughout almost the whole year, the soil is covered with crops, crop residues, stones, trees such as *Moringa*, *Terminalia* and *Balanites* spp., or shrubs (e.g. pigeon pea, cotton, coffee and yains). Both trees and shrubs are important in preventing soil erosion. Some of these plant species demand a careful management (e.g. Sorghum and the *cabbage tree*, *Moringa stenopetala*), whereas others are wild plants which are tolerated and harvested only in abnormal years (e.g. some Araceae species). Others are used for medical and / or ritual purposes. Some of the crop plants in Konso have been grown since ancient times, e.g. sorghum, Araceae, cabbage tree, cotton and coffee. The Konso believe that God has given these traditional plants to their ancestors in the mythological past. In the meantime the Konso have adapted many crop species from outside. ...

**Table 1. Plant genetic resources found or reported to be used in Konso**

(The information is mainly compiled from Goettsch et al. (1984) and Westphal (1975). In addition, Hallpike (1970) has reported the use of 80 wild plant species and trees for food, animal fodder, medicine, building material, magico-rituals and miscellaneous.)

Scientific name: ***Moringa stenopetala***

Local name: Shelagda, tellakata, Halako, Shiferaw

Common name or family name: Cabbage tree

Cultivation: (field), backyard in village

Use and remarks: Leaves are very important vegetable; eaten boiled with 'dama. Leaves especially important during the dry season, medicine

### **Cabbage tree (*Moringa stenopetala*)**

The most striking characteristic of the Konso agricultural system is the cultivation of the cabbage tree. The tree is densely planted within the villages and generally more widely spaced in the fields and terraces between 1600 and 1800 m. Its light green leaves and the conspicuous grey bark are characteristic features of the cabbage tree. Konso can be considered as the area where the tree was first cultivated. From here the cultivation has spread into neighbouring areas where it is being used intensively as well. In the whole region the cabbage tree does not occur in the wild (Minker, 1986). The tree is raised from seed; it requires relatively good soil conditions and prefers wind-protected places. After 5-6 years the first leaves can be harvested. They are boiled and eaten as a vegetable with any warm meal. The leaves are rich in vitamins and are mainly harvested in the dry season when other vegetables are scarce. During the rainy season there are only a few leaves left on the tree and they do not taste good. The leaves are an important trading product in the local markets. Outside the villages, especially on the terraces, the cabbage tree plays an important role in reducing soil erosion. There are trials under way to use the tree for this purpose in other areas of the country.

Furthermore, some very promising medicinal uses have been found. A tea of dried leaves is reported to be very efficient in treating light cases of diabetes and it is said that the extract of fresh leaves can cure indigestion and even the cure of an amoebic dysentery has been reported. Eye inflammations are treated and a root extract helps against unconsciousness (Aschalew Hunde, personal communication).

Recently it has been reported that ground seeds can be used to clarify muddy water (Jahn, 1981; Goettsch, 1984). Experiments have shown that this powder has the same effectiveness as the best technical water clarifying agents.

It can be concluded that *Moringa stenopetala* is a greatly underutilized and relatively unknown tree which deserves further investigations. It could play a much more important role in the nourishment of people and in the stabilization of the environment in areas with limited rainfall in the tropical belt between 1400 and 1900m. ...

### **Conclusions**

Considering the difficult agro-ecological conditions which prevail in Konso, it is remarkable how many people can be fed from a rather limited area when appropriate farming methods are applied. The ancient terraces and other constructions, as well as the simple but efficient irrigation methods, are the salient features of Konso agriculture which allow an optimal use of water throughout the year. The intercropping of various crop and tree species together with the cultivation practices seem to be important factors in food and fodder production security as well as in the soil conservation of the Konso area. The diversity of crop species and the genetic diversity within many of the crop species make Konso an important area from the germplasm conservation and exploration point of view. The cultivation of the cabbage tree as well as of certain tuber crops is almost entirely confined to the Konso highlands. These species may have good potential in other similar areas where rainfall is limited and where, so far, only relatively small numbers of crops are grown.

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