

Research Reports

Chickpea

Genetic Resources

Bright Prospects for Chickpea Cultivation in Tanzania

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Although chickpea is cultivated on over 50 000 ha in Tanzania (FAO 1993), this is a small area compared to the large agricultural hectareage and the need for protein-rich food in the country. Chickpea grows well in Tanzania, and generally speaking, does not compete for land with most other crops, because of the difference in their growth periods. Most of the crops in Tanzania are cultivated during the rainy season (Nov/Dec–Feb/Mar) whereas chickpea is grown Mar/Apr–Jul/Aug.

A germplasm collection mission, organized jointly by the National Plant Genetic Resources Centre (NPGRC), Arusha, Tanzania, and the Genetic Resources Division (GRD) of ICRISAT went 5–23 Aug 1994 to areas of Tanzania where chickpea is cultivated, namely, Arusha, Mwanza, Musoma, Shinyanga, and Singida regions (Fig. 1). The mission objectives were:

- to collect samples of the local chickpeas as germplasm for present and future utilization in research
- to examine the agricultural practices, and the problems and prospects for chickpea cultivation in Tanzania

It was observed that chickpea was sown after the harvest of maize, the main crop of the region, in Mar/Apr, on the conserved soil moisture with minimum tillage. Only desi chickpeas that had a medium canopy height (40 cm), yellow seeds with size of about 16 g 100-seeds⁻¹ were cultivated. Many farmers used low seed rates, evident in the suboptimal plant stands. The crop growth was very good with excellent pod setting

(Fig. 2). In general, chickpea crops were free from lodging, diseases and insects, and average grain yields of 1.0–1.5 t ha⁻¹ were expected. The good performance of chickpea in Tanzania seems primarily because of

- deep Vertisols
- moderate temperature because of high altitude (1100–1400 m)
- relatively longer day length

After the maize harvest, only some fields were sown with chickpea, while the remaining were left fallow. Thus, chickpea cultivation can be greatly expanded in Tanzania.

The chickpea cultivation environment in Arusha is different from other regions in Tanzania. The rains during the normal season (Nov–Feb) are scanty and not sufficient to raise the crops. Therefore, the crops are sown with Mar/Apr rains.

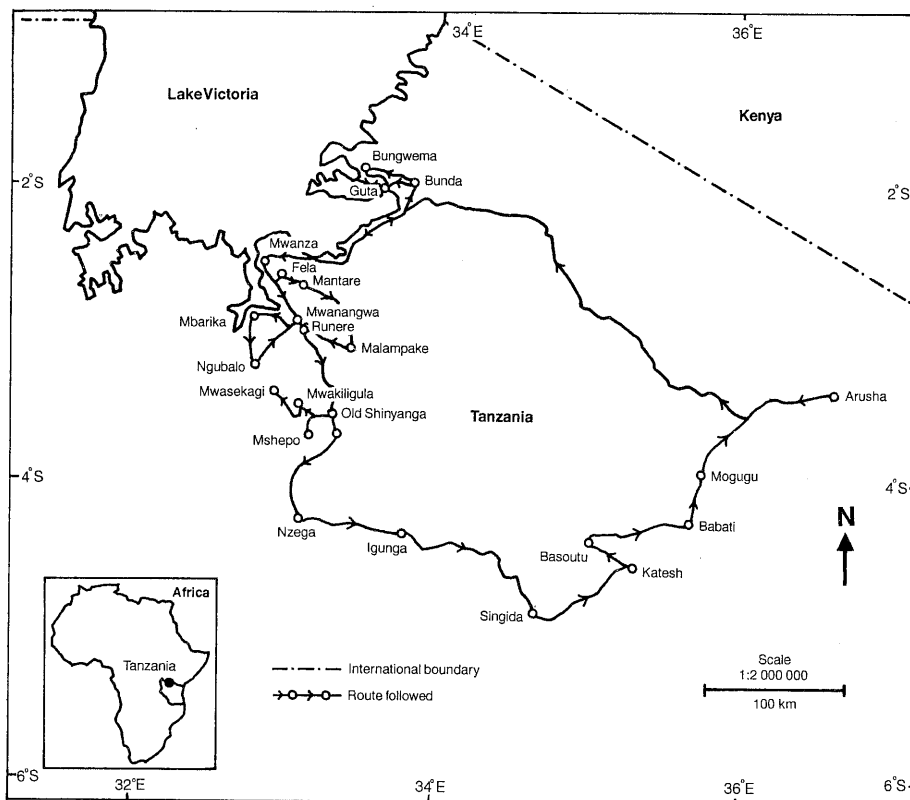


Figure 1. Route followed during chickpea germplasm collection in Tanzania, Aug 1994.

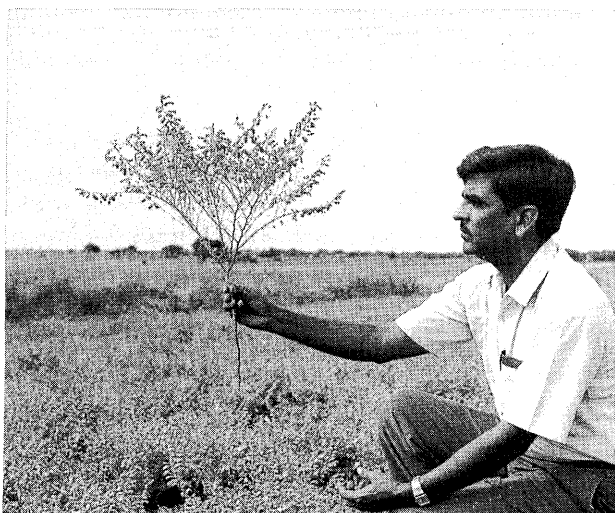


Figure 2. Chickpea pod setting was excellent in Tanzania in 1994.

Maize and chickpea are sown at the same time. Occasionally, the two crops are mixed. During the 1994 season, rainfall was scanty. Under those limited soil-moisture conditions, the maize crop experienced severe drought and often failed, whereas the chickpea grew satisfactorily (Fig. 3). This indicates a role for chickpea under those situations.

Some farmers in Tanzania indicated that they had problems in selling their produce. Most said that they consume chickpea at home, and sold the surplus in the market. Kenya is the main buyer of chickpea from Tanzania.

During the mission, 87 samples of chickpea landraces were collected and shared between the participating institutes. The seeds of these materials can be obtained from GRD, ICRISAT Asia Center, or NPGRC, Arusha, Tanzania, for research use.

The mission was of the view that

- Chickpea grows very well in Tanzania, and there is a vast scope to expand the area under this crop
- Because the agriculture is largely rainfed, and the environment dry, incidence of disease and insects is minimal
- With some marginal improvement in cultural practices, the productivity of this crop can be further improved
- Chickpea also has good prospects in Arusha because the rains there are low and unevenly distributed
- Some initiatives to demonstrate the uses of chickpea will improve demand for consumption and its acceptance in Tanzania



Figure 3. A field sown with mixed crop of maize and chickpea near Arusha in Tanzania. Because of severe drought conditions, the maize failed but the chickpea produced a good crop.

Reference

FAO (Food and Agriculture Organization of the United Nations). 1993. Chickpea. Page 104 in FAO Production Yearbook for 1992. Rome, Italy: FAO.

Collecting Chickpea Germplasm in Northeastern Maharashtra, India

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With the recent trend in high-input agriculture in India, the area under chickpea is gradually being replaced by crops such as wheat in north Indian states. However, because of its good price, chickpea is becoming more competitive in the central and southern Indian states, and Maharashtra is one of those states. In Maharashtra, the area under chickpea was 368 000 ha in 1970/71, 429 000 ha in 1980/81, and 672 000 ha in 1990/91 (India 1993), which indicates good prospects for this crop in the state. Though there are some chickpea accessions from Maharashtra in the world germplasm collection, the representation is low. As an arbitrary measure of geographic representation in the germplasm collection, while there are about 1.75 accessions 1000 ha⁻¹ of