

## Collecting groundnut (*Arachis hypogaea* L.) germplasm in Mali

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### INTRODUCTION

In West Africa, Mali is an important groundnut-producing country, although the area under groundnut, and production levels have been dwindling since 1978-79. Groundnuts play an important role in Malian agriculture, although their importance has been on the decline in recent years. In the 1960s groundnuts accounted for almost 40% of the total value of Malian exports. This percentage gradually reduced during the 1970s and is zero at present. Almost all the production is now consumed locally. A large portion of Mali's arable land is suitable for the cultivation of groundnuts, principally in the areas within the 500-1400 mm rainfall limits. The main production centres are Kayes, Kenieba, Bafoulase, Kita, Kolo Kani, Banamba, Koulikoro, Segou, Manicepe, San and Tominián. The national average yield has remained at around 700 kg of dry pods per hectare for a long time. The reasons are two fold - climatic, and outmoded production methods (Soumano, 1980).

Realising the need to collect and conserve Malian groundnut germplasm, the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, India collaborated with the Institut d'Economie Rurale (IER), Bamako, and organized a collecting mission in Mali during October, 1986.

### Observed genetic diversity

The aim of the mission was to collect germplasm from diverse environments, soil types and ethnic groups. The coarse grid sampling method was employed. A random sample of the population was supplemented with a biased sample of specific types. Wherever possible pods were collected from about 50 different plants. In areas where harvesting was finished, a random sample from the threshing floor or farmer's store was collected. Erect, spreading bunch, and runner types were collected belonging to

*Arachis hypogaea* var. *hypogaea* and var. *vulgaris* and a few samples that could be var. *fastigiata* type. Two and 2-3-4-seeded types with small, medium and bold pods were collected.

Samples collected demonstrated the diversity among the types grown by the farmers. Even in areas where the government supported groundnut cultivation, such as Kayes and Koulikoro, several different types were collected. Several farmers, who were growing newly introduced cultivars such as 47-10 and 28-206, continued to grow landraces because of certain personal preferences, such as taste and keeping quality. A number of farmers claimed to have maintained the seed for generations.

A number of collections had local names (Table 1) which relate to some quality or a character of the cultivar. For example 'Kalossabani, 'Tikatelini' and 'Kodiori' refer to their short duration. 'Sokobatika' means 'fleshy' indicating the large seed size of this cultivar. 'Konsaba' means 3-compartments, referring to the 3-seeded nature of this type. 'Tikawouleni' or 'Tikawoule' means red groundnut. 'Tikanidje' means white groundnut, the only off-white colour seeded type that was collected during the

Table 1. Number of samples of groundnut germplasm collected and their local names

Local name	No. of samples	Local name	No. of samples
Bobotika	1	Olangue	1
Chopo	2	Samatiga	1
Dibi Koloni	1	Sokobatika	1
Ere Mougne	1	Tika	4
Fiobalini	1	Tikaba	6
Gambika	2	Tikaba-Koro	3
Kadloro	2	Tikable	1
Kalossabani	10	Tikadjen	3
Kampiani	1	Tikamissani	1
Kantcha	2	Tikanidja	1
Karosaba	1	Tikatelini	4
Konfia	2	Tikawoyota	1
Konsaba	1	Tikawouleni	7
LaVollette	1	Zorowoule	4
Mandetika	1	Others	68
		TOTAL	146

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present mission. Some vernacular names such as 'Tika' and 'Kourieni' simply mean groundnut. There was no association between the ethnic group and type of groundnut grown by that group except for one which was called 'Madetika' meaning that it 'belonged' to Manding tribe.

Wide variation was observed in pod type, seed size and seed colour. Most of the samples collected had tan or red seeds. A few were pale tan, dark tan, rose and variegated (red and white). One sample with off-white seed colour was collected which could be 'Philippine White', an old introduction into West Africa.

### GENETIC EROSION

Genetic erosion was clear among the long-duration runner types, which were predominant for a long time in Mali up to about 20 years ago. According to the extension service as well as the farmers, the reason for the change in their popularity was a change in climate. Reduction in total rainfall as well as the length of the rainy season (Hodgkinson, 1986) might be responsible for the switch to shorter duration types, either erect or spreading bunch. All the samples of runner types were a few plants mixed with the predominant spreading bunch type.

Newly introduced cultivars such as 47-10, 28-206, 55-437, GH 119-20 are becoming popular and replacing the old groundnut cultivars. Since the government support for groundnut has been withdrawn, the process of replacement may slow down. However, the area under groundnut has been drastically reduced due to climatic factors and marketing difficulties. Considering the threat of genetic erosion, and in the light of diversity observed and collected,

there is a need for further collecting in Mali, especially from the areas that were not explored during this mission and in the areas where collecting time did not coincide with maturity.

### CONCLUSIONS

Wide variation was observed in the groundnut samples collected in Mali. Erect, spreading bunch, and runner types were collected, belonging to var. hypogaea and var. vulgaris. A few samples, probably of var. fastigiata, were also collected. Fairly large variation for pod and seed types was observed. Except for a few, which could be slight variants of either 47-10 or 28-206, the samples collected were authentic landraces.

The 146 samples of groundnut represent a large amount of diversity of Malian landraces, but they are by no means a comprehensive selection. It is recommended that another collecting mission be undertaken to sample and conserve the remaining genetic diversity in the country, particularly in the regions of Kayes, Mopti, southwest and north Koulikro, and along the southern border of the country.

### REFERENCES

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