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Collecting in Botswana

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Introduction

Botswana occupies 58,200 km^2 of the Kalahari Basin of the great African plateau and has a population of 940,000, 80% of whom live in the eastern strip. The country has a mean elevation of about 1000 m with little topographic variation except in the southeast, where the hilly plateau surface rises to above 1400 m, and in the extreme east where it descends to below 600 m between the Limpopo and Shashi Rivers.

The climate is semi-arid and sub-tropical. Average temperatures are 23-28°C in summer and 15-20°C in winter. Frosts occur almost throughout the country. Annual rainfall ranges from less than 250 mm in the southeast to more than 650 mm in the northeast. Only 5% of the land is suitable for cultivation (Gollifer and Johnson, 1985).

The major food crops of Botswana are sorghum (Sorghum bicolor) and maize (Zea mays) along with small amounts of pearl millet (Pennisetum glaucum, syn. P. americanum), finger millet (Eleusine coracana), Bambara groundnut (Vigna subterranea), groundnut (Arachis hypogaea) and cowpea (Vigna unguiculata). Traditional farmers produce 85% of food crops, while commercial farmers contribute only 15%, but the former accounts for 96% of land planted to such crops (Gollifer and Johnson, 1985).

In 1980, the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) launched an expedition in collaboration with the Department of Agricultural Research (DAR), and collected 138 samples of sorghum and 47 of pearl millet (Prasada Rao, 1980). Most of the sorghum samples were of the races kafir, guinea or intermediates between them. Sorghum germplasm from Botswana matured early, was agronomically superior and had good grain quality (Prasada Rao, 1981).

A further mission, funded by IBPGR, was organized during April 1985 to collect germplasm of other crops, especially groundnut, Bambara groundnut and finger millet. Sorghum and pearl millet were collected in areas not covered in 1980, the collecting route being along a route Gaberone to Francistown. 77 samples consisting of 8 groundnut, 13 Bambara groundnut, 29 sorghum, 17 pearl millet, 6 finger millet, 2 cowpea, a wild Sesamum sp. and Macrotyloma uniflorum were collected in the Northeast, Tutume and Kgatleng districts of Botswana.

Cereals

Sorghum is extensively grown almost throughout Botswana; the samples collected were complementary to those collected in 1980. Of the types with a red pericarp which are commonly grown, the most popular cultivar is called 'town'. Most of the cultivars have a pearly-white endosperm, but red-grain types are also grown to a limited extent. White grain types like 'Segaolane' are also very popular.

Finger millet is typically grown in small low-lying patches in sorghum and pearl millet fields and usually used in brewing local beer. 2 distinct types,

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with either compact heads or open heads, are grown.

Pearl millet samples collected from Botswana possess head types which may be long, cylindrical, short, loose, conical, or globose with long bristles. Some non-bristled types are also grown. Serere 6A (an introduced composite from Uganda) is becoming popular. Pearl millet is usually grown as a sole crop or occasionally mixed with sorghum and groundnut.

Improved cultivars of sorghum and millets are becoming popular (DAR, 1984), and may be expected to replace traditional cultivars in the course of time. Because of frequent drought and other natural hazards farmers obtain seed from the government agencies and so they lose their traditional cultivars.

Grain legumes

Groundnut is usually grown in small patches in sorghum and pearl millet fields. Most are eaten as nuts but ground seeds are used for seasoning meat and vegetables. Only Valencia types (bunch) were collected. The 2 seeded, amber coloured types were common, but a few red-seeded types were also collected. The 2 distinct types collected were Nongogulu (late maturing with relatively large seeds) and Chinongwana (early maturing with relatively small seeds). The groundnut crop appeared to be very uniform probably because of the introduction of improved cultivars.

Bambara groundnut is cultivated on ridges in small patches in sorghum and millet fields. The fresh or dry pods are boiled and eaten as a snack. 3 distinct types of Bambara groundnut are grown in Botswana, with either white, amber-coloured, or black pericarps. Cultivars with a purple or black pod wall have purple seeds, while those with yellow pod wall have amber-coloured seeds. Single-seeded types are common, but 2-seeded types were also found. One field was found where both groundnut and Bambara groundnut were growing together. While groundnut produced few pods and no seeds, Bambara groundnut produced up to 10 pods with seeds indicating the drought tolerant capacity of Bambara groundnut. The considerable variation found within single fields of Bambara groundnut indicated limited, if any, selection or improvement.

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Resume

Une expédition menée dans trois districts du Botswana par le Département de Recherches Agricoles (DAR) et l'IBPGR en avril 1985 récolte 29 accessions de sorgho, 17 de mil, 8 d'arachide, 6 Eleusine coracana, 2 de niébé, 13 de Jugo bean, 1 de Macrotyloma sauvage et une de sésame.

Resumen

Una expedición conjunta del IBPGR y el Departamento de Investigación Agrícola (DAR) a 3 distritos de Bostwana fue llevada a cabo en Abril de 1985 y en la misma se recolectaron 29 accesiones de sorgo, 17 de panizo de Dalmiel, 8 de cacahuetes, 6 de coracán, 2 de frijol de fraile, 13 de bambarra, 1 de Macrotyloma silvestre y una de Sesamum.