

## UGANDA

### **About the Potato Atlas Archives...**

*The first World Potato Atlas was developed at the International Potato Center (Centro Internacional de la Papa, or CIP) in the 1980s and maintained for several years -- primarily by Robert Rhoades, Robert Hijmans, and Luisa Huaccho -- to provide country-specific information about potato production, constraints, and uses. A newer version of the atlas, providing updated and more detailed information of a limited selection of countries, was initiated in 2006.*

*The "atlas archives" included here are based on chapters of the original effort which so far have not been substantially updated. Although some of this information is clearly obsolete, some remains relevant, at least for historical background.*

### **HISTORY AND OVERVIEW**

Potatoes were probably introduced to Uganda by British colonial administrators early in the twentieth century as a backyard garden vegetable (Ministry of Agriculture and Forestry, 1981). Another probable source of potato introductions came from Kenyan, Rwandan, and Congolese farmers and traders located along the borders, whence the crop diffused among Ugandan farmers living in the cool highlands of the country. By 1945 potatoes were widely grown in the highlands of Kigeri and Bugizu, and were even described as a weed as well as a crop (Akimanzi, 1975). Production was severely damaged in the late 1940's by infestations of late blight (*Phytophthora infestans*) and to a lesser extent early blight (*Alternaria solani*).

Growing demand for the crop eventually led to rising imports, prompting formation of the Kigeri Potato Development Scheme in 1966 by the Department of Agriculture. In 1968, a breeding program was established at Makerere University. Throughout most of the 1970's and 1980's Uganda experienced a series of bloody civil conflicts that makes it difficult to obtain reliable data on crop production.

### **GEOGRAPHY AND PRODUCTION ZONES**

Potatoes are widely grown throughout Uganda, but the main production is concentrated in areas with elevations of 1,500- 3,000 meters above sea level (masl). Highlands form a relatively small portion of Uganda's arable land and are densely populated (Mukubi, 1976). Major areas of production include the highlands of Kigezi, Ruwenzori, and Ankole in the southwest, and Bugisu in the southeast, especially on the slopes of Mt. Elgon. Some production also occurs in Sebei in the east and the West Nile region.

The highland areas generally receive 900-1,400 millimeters of rain annually, distributed bimodally. The main rainy season is from February to May, with a secondary peak between September and January. Temperature range from 10°C to 30°C, depending on altitude. Soils vary considerably, ranging from leached, acid oxisols and ultisols, to fertile volcanic soils in the south (Rufumbaguza, 1984; Turyamureeba, 1983; Akimanzi, 1975).

### **PRODUCTION SYSTEMS AND CONSTRAINTS**

#### **Cropping Calendar**

In the Kigeri Highlands three crops are grown each year. Potatoes are grown on hillslopes during the two rainy seasons, and in valley bottoms utilizing residual moisture during the dry season. The first wet season crop is planted in March/April and harvested from June through early August. Dry season planting occurs in May/June, with harvest in August/September. A third crop is grown during the second rainy season, with planting from late September through early November and harvest from December to February (Rufumbaguza, 1984).

#### **Cultivation Practices**

Land clearing and preparation are generally done by hand, although occasionally ox-drawn ploughs or, rarely, tractors, may be used. Sprouted or unsprouted seed tubers are planted at intervals of about 35 cm. along ridges spaced 75 cm. apart. The spring planting generally coincides with the first rains in March. When available, farmyard manure is applied. Recommended fertilizer application is 45 kilograms per hectare (kg/ha) nitrogen and 65 kg/ha phosphate. Dithane M45 (brand name) is recommended for controlling blights. Weeding is done by hand. In general, purchased inputs are in short supply and prohibitively expensive for most farmers. Although yields of 20 tons per hectare (t/ha) were common in the mid-1970s, they have since fallen to an average of 7 t/ha (Kibiria, 1982).

Turyamureeba, 1983; Akimanzi, nd).

### Disease and Pest Constraints

Late blight (*Phytophthora infestans*) and early blight (*Alternaria solani*) are serious problems, particularly at elevations below 1,500 meters. Bacterial wilt (*Pseudomonas solanacearum*) causes severe losses, sufficient to remove some areas from production altogether. Rotation is ineffective for controlling bacterial wilt because of its mobility via water through soil, and a wide variety of wild host plants. Rhizoctonia and Verticillium wilt are local limitations to potato yield. Leaf roll virus and PVY have been observed, but rarely cause serious reductions in yield.

Numerous pests attack potatoes in Uganda. Tuber moth (*Phthorimaea operculella*) can be a serious pest both in the field and during storage. Aphids attack potatoes directly, but their major impact is as a vector for viruses. Nematodes have been observed, but so far their damage is limited (Kibirige, 1982; Kasimbazi, 1982). Larger mammalian pests include monkeys, baboons, moles, and wild pigs that destroy the plants and eat the tubers.

### VARIETIES AND SEED SYSTEMS

Major varieties include Bufumbiva, Muhabuva, Rubega, and Kalengere, among others. Many farmers use poorly documented varieties known loosely as Kigeri locals. Details on the present status of the seed multiplication program and the distribution of seed potatoes are unavailable (Rufumbaguza, 1984; Turyamureeba, 1983).

Although some certified seed is multiplied and distributed by the national potato program, the vast bulk of seed potatoes in Uganda is uncertified and either produced locally, or shipped from Kigezi to other parts of the country.

### CONSUMPTION, STORAGE, AND MARKETING

Potatoes are a relatively minor food in Uganda compared with cassava, bananas, sweetpotato, maize, sorghum, and beans. However, in some areas, particularly the southwest, they are a major staple. FAO (1986) estimates for 1984 show an average annual consumption of 10 kg per capita. Consumption is probably much higher in major production areas and urban centers (Rufumbaguza, 1984; Turyamureeba, 1983).

Little information is available on potato storage requirements in Uganda. Due to a general lack of cold storage facilities, most farmers store seed tubers best they can in out-of-the-way areas of the house, pits, large baskets or pots, or in granaries with other crops. Some traders have special buildings for storing potatoes, but these are usually simple sheds. Storage losses can exceed 50 percent (Rufumbaguza, 1982; Turyamureeba, 1983).

Little or no government regulation exists on the distribution of potatoes in Uganda. Transport is a major constraint, limiting the supply of potatoes to urban centers. On the other hand, the price and availability of other crops affects consumer demand for potatoes. Prices often fluctuate widely. When potatoes are in ample supply, white-skinned varieties usually command the best prices (Rufumbaguza, 1984; Turyamureeba, 1983).

### REFERENCES

- Akimanzi, D. R., 1975. Report on Potato Production in Uganda. International Potato Course: Production, Storage, and Seed Technology. Report of Participants. International Agricultural Center. Wageningen, The Netherlands.
- Akimanzi, D.R., n.d. Potato Development and Transfer in Uganda. Unpublished MS.
- Kasimbazi, J., 1982. Major Factors Affecting Potato Production in Uganda. International Potato Course: Production, Storage, and Seed Technology. Report of Participants. International Agricultural Center. Wageningen, The Netherlands.
- Ministry of Agriculture and Forestry. 1981. The National Potato Programme in Uganda. Planning Division.
- Rufumbaguza, W.R. 1984. Report on Potato Production in Uganda. International Potato Course: Production, Storage, and Seed Technology. Report of Participants. International Agricultural Center. Wageningen, The Netherlands.
- Turyamureeba, G.M. 1983. Report on Potato Production in Uganda. International Potato Course: Production, Storage, and Seed Technology. Report of Participants. International Agricultural Center. Wageningen, The Netherlands.

