The many descriptor states possible for morphological traits alone of sweetpotato as seen in the IBPGR’S Descriptors List for Sweet Potato (Huaman, 1991) already indicate that there could exist a number of varieties of this crop species in the world. In a recent workshop co-sponsored by the International Potato Center (CIP), Rossel et al. (2007) reported that over 6000 accessions of landraces, breeding lines, and advanced cultivars of sweetpotato were held by the Center in its genebank, a collection which, based on reports in the same workshop of some of the sweetpotato producing countries, seems just a small fraction of the available varieties in the world.

Although several sweetpotato varieties are maintained by national gene banks all over the world, only a few, up to just two in some cases, predominate the sweetpotato growing areas in each major sweetpotato producing country. The choice of varieties to grow appears to depend largely on how the produce, the roots, are utilized, whether as food either directly or in processed forms, as feed component, or as sources of industrial starch. For food varieties, preferences also seem to vary among and even within countries.

Since the varieties considered important, that is, widely grown, differ from country to country, the dominant varieties in some of the major sweetpotato growing countries are presented below by country.

China

For more than 400 years since the introduction of sweetpotato to China, sweetpotato cultivation in the country relied on local cultivars which, although possessing tolerance/resistance to abiotic/biotic stresses after having survived natural and farmers’ selection pressures, were low yielding and with limited ranges of adaptability (Ma et al., 1998). The introduction of the US variety Nancy Hall in 1938 and the Japanese variety Okinawa 100 in 1941 provided the country with two outstanding varieties that were used not just for production of the root crop but also in the genetic
development of new varieties. One of the varieties that emerged in the breeding programs involving the two introduced ones is Xushu 18 (Fig. 4.1), a third generation descendant of the two (pedigree given in Xue-qin et al., 2006 and 2007), which to this day is the leading sweetpotato variety in China both in annual hectareage (about 1.5 million ha) and in total root production (about 30 million MT) (data from Li Hongmin, personal communication). Li Hongmin also described Xushu 18 as a widely adapted variety with tolerance to high moisture stress and resistance to root rot, but susceptible to stem nematodes and black rot. It has spreading growth habit, green cordate and slightly toothed leaves, green vines with purple stripes, and elliptic roots with red skin and white flesh with purple rings in some places. The variety is utilized mainly for feed and starch production. Based on the data in the Catalog of Sweet Potato Cultivars in China published in 1993 by the Xuzhou Sweet Potato Research Center in China (cited by Ma et al., 1998) which developed the variety, Xushu 18 had only 25% root dry matter content, which is considered just moderate and 11–15% starch, although data provided by Li Hongmin of the same institution showed the root dry matter and starch contents of the variety to be slightly higher, respectively ranging from 26–32% and 14–20%.

The next leading variety in the country is Nanshu 18, a cross between a local variety (Jinzhuan 7) and an introduced one (America Red), and at present being grown in 0.5 million ha, mainly in middle China where it is more adapted, and producing 12 million MT of fresh roots (Li Hongmin, personal communication). The variety was released in 1988 by the Nanchong Agricultural Research Center, just one of the only two out of 23 varieties released in China during the period 1986–1990 that did not trace their ancestries to Nancy Hall and Okinawa 100 (Ma et al., 1998). Nanshu 88 is also a starch and feed variety with root dry matter content of 24–30% and starch content of 12–18%. It is tolerant to drought but susceptible to black rot, root rot, and stem nematodes and with poor tolerance to abiotic stresses. Its vines are short and purple and its lobed leaves are purple when young and turn