

➔ **7.1.3.1 Cousins Gwanama (1995). Determination of breeding objectives and selection criteria for Zambian cucurbit crops. (Supervisor: Dr. K. Nichterlein).**

A study was carried out consisting of two components: 1) A survey was made in five provinces of Zambia for cropping systems, utilization of and incomes from pumpkins and other cucurbits to help to determine breeding objectives. Pumpkins were found to be the most popularly grown cucurbits and cucumbers were the least. Cucurbits were grown mostly for consumption of fruit and leaf but cash sale was also important, contributing about 25,000 Kwacha (60 US\$) per household per annum. They were found to be predominantly intercropped with the major staple crops of each province. Fertilizer application was found to be practiced in the Central, Eastern and Southern Provinces, cattle manure application in Southern and Western, tree ash in the Central and soil mining in Luapula Provinces. It is concluded that breeding should aim at increasing both leaf and fruit yield of pumpkins and only fruit yield of the other cucurbits. Superior genotypes should be able to perform well both in mono- and mixed culture. 2) An evaluation of 14 pumpkin landraces collected from the farming systems survey areas to determine how selection criteria was carried out, at the UNZA Field Station. No significant differences in fruit yield were detected except for fruit seed yield ($P \leq 0.05$) using the F-test. *C. maxima* genotypes yielded more seed per fruit than *C. moschata* varieties. There were significant correlations between fruit diameter and length ($r = 0.71^{**}$), fruit diameter and total plant fruit yield ($r = 0.35^*$) and fruit weight and total plant fruit yield ($r = 0.77^{**}$). The most important yield components with high direct effects were fruit weight and number of fruits per plant and these may be very useful as selection criteria for fruit yield.