Status of the Hungarian Cucurbit Collections

Lajos Horváth, Attila Simon
Central Agricultural Office, Research Centre for Agrobotany, Tápiószele, Hungary

Since 1st January 2007 - after several reorganizations - the Research Centre for Agrobotany (RCA) has been functioning as a department of the Central Agriculture Office (CAO). CAO/RCA - as its predecessor, the Institute for Agrobotany – fulfil country-wide responsibilities for the development and maintenance of field and vegetable crop genetic resources collections and performs overall genebank activities.

At present, six institutions deal with genetic resources of cucurbits in Hungary. They hold a total of 4,349 accessions belonging to the most important Cucurbitaceae species. 65.8% of these genetic stocks is preserved in the Active and Base collections of RCA.

The RCA cucurbit collections contain 2,861 seed samples of 1,645 unique accessions, representing 24 species. More than 45% of the unique accessions have been collected in Hungary or in the Carpathian basin.

Since the first ad hoc meeting on cucurbit genetic resources (held in Adana, Turkey) 41 accessions have been incorporated into the collections. Twenty three accessions from these “new accessions” are of Hungarian origin, 13 accessions are classified as landraces, and 18 accessions are advanced cultivars.

The technical background for medium- and long term conservations available: the temperature is maintained between 0 and +5oC in the active collections, and 18-20oC below zero in the base collection chambers, where 235 accessions have been duplicated for safety purposes.

Depending on the number of newly introduced accessions and on the regeneration needs of the genebank, about 50-60 cucurbit accessions are regenerated year by year. For seed multiplication of the insect-pollinated species mainly isolation in space and to a lesser extent hand isolation methods are applied (flower bagging and manual pollination) are used. In the near future, 69 cucurbit accessions require regeneration because of decline of viability of the stored samples.

Four different descriptor lists are used for characterization and approximately 90% of the collection has at least a partial characterisation data. Evaluation is not regularly carried out on the cucurbit collections, but in case of demand or under special agreements, RCA undertakes more detailed field and/or laboratory evaluations.

Viability is assessed by means of germination tests following the recommendation of FAO/IBPGR Genebank Standards. The protocol applied for testing viability is based on the Hungarian Standard (MSZ 6354-3: 1991) and the Handbook of Seed Technology for Genebanks published by IBPGR.