

Cucurbit Genetics Cooperative



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***Cucurbita* spp. and *Lagenaria siceraria* Collection at the Center for Conservation and Breeding of Agricultural Biodiversity (CCMAV), Polytechnical University of Valencia**

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The Center for Conservation and Breeding of Agricultural Biodiversity, (CCMAV) located at the Polytechnical University of Valencia (UPV), is the reference center for the *Cucurbitaceae* family in the European Cooperative Programme for Crop Genetic Resources Network (ECP/GR), which is included in the International Plant Genetic Resources Institute (IPGRI). Considering the importance of genetic diversity preservation as a tool for crop improvement, it becomes essential to collect material, as well as conserve and characterize collections. The *Cucurbita* spp. and *Lagenaria siceraria* collection conserved at the Genebank of the CCMAV include 900 accessions belonging to 5 cultivated species, *Cucurbita pepo* L., *C. maxima* Duchense, *C. moschata* Duchense, *C. ficifolia* Bouché and *Lagenaria siceraria* (Mol.) Standl.

Most of these accessions were collected in Spain (2), and the remainder came from Central America and North Africa. A majority are traditional landraces, adapted to very variable ecological conditions, from mountainous dry lands to irrigated lands of the plains. Part of this collection was characterized during 1998 and 1999, following in part the *Cucurbita* descriptor of the IPGRI (1). A great diversity of types was found (3).

***C. pepo*:** Three hundred and eight accessions of *C. pepo* were collected in all the Spanish regions, Greece and North Africa, in variable ecological conditions (from sea level up to 1300 m). These pumpkins are used for human consumption, fried, roasted or tinned, and in vegetable stew. They also have other less common uses as an ingredient of sausages, sweets (like "meloja"), pumpkin "buñuelos" or jam. The seeds are also consumed roasted.

Fifty-nine accessions were morphologically characterized, the weight ranging from 100 g to 8.75 kg. In this species there is a great diversity in size,

shape and colors. The elongated or elliptical zucchini, with yellow, orange or green colors predominate, even though some flattened, spherical and curved pumpkins can be observed, showing sometimes more or less pronounced ribs. The great variability found in this collection is consistent with previous information on this species, one of the most variable species of the vegetable kingdom with regard to fruit characters (4).

***C. maxima*:** The Genebank maintains 174 accessions of *C. maxima* collected in all the Spanish regions, Ecuador and Morocco, that were grown in low and intermediate altitudes (from nearly sea level up to 1300 m). These accessions are basically destined for human consumption and are used boiled, roasted or fried, or in sausages and jam. They are also used for animal feeding and for decoration. One hundred accessions have been morphologically characterized, and a great variability in size, shape and colors has been found. The fruit weight ranged from 1.5 up to 20 kg. The turban-shaped pumpkins, with smooth skin and red and white colors; the flattened, wrinkled and dark ones; and the smooth grayish or orange-colored, which can reach considerable sizes, are the most remarkable types.

***C. ficifolia*:** The 81 existing accessions of *C. ficifolia* have been collected in Spain and Ecuador, in regions of higher altitude (from 12 to 2500 m, above sea level) than the aforementioned species. This pumpkin is basically used in confectionery, such as in "cabello de ángel" elaboration. Some types are used boiled for human consumption and for animal feeding. The accessions characterized are highly monomorphic, weighing around 20 kg, with elliptical shape and with yellow and green veins when ripe.

***C. moschata*:** The 187 accessions of *C. moschata*, collected in Spain and Ecuador are raised, like *C. ficifolia*, in intermediate and high altitudes, from 30 up to 1890 m above sea level. It is used for human

consumption, boiled, fried, roasted or in vegetable stews, in sweets or in desserts. It is also used, like the rest of species in the genus *Cucurbita*, for animal feed. The 40 accessions characterized weighed from 1 to 9 kg. The predominant shape of the fruit is pear-shaped, but some accessions with flattened, oblong, elliptic, heart-shaped and curved fruits are also found. The fruits usually have orange, yellow or green colors, with veins in the major part of the pear-shaped fruits. Most of them show ribs.

***Lagenaria siceraria*:** Fifty-five accessions of *L. siceraria* have been collected in Spain and Morocco in low altitudes, from 13 to 800 m above sea level. This species is not suitable for human consumption. It is basically used as a recipient for liquids, as a float and as decoration. This species shows a greater morphological uniformity than the rest of the species. All the fruits of the 10 characterized accessions are pear-shaped without ribs, green in color and occasionally with little white spots.

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