

Manihot rogersii Nassar: A new synthetic species!!

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Abstract

Manihot glaziovii Muell. has been hybridized with cassava, *M. esculenta* Crantz and a sterile interspecific hybrid was obtained. The chromosome doubling of this interspecific hybrid gave rise to a fertile type described here. This induced type is considered a new species and given the name *Manihot rogersii* Nassar.

Key words: interspecific hybrid, polyploidization, *Manihot glaziovii* Muell., Cassava, new gene pool

Since the exhibition of the classical work of hybridizing *Brassica oleracea* and *Raphanus sativus* from which the species *Brassica sativus* had stemmed, very few examples are known.

Species are isolated in nature by barriers that are strong or weak but for a reason or another these barriers may suffer a breakdown and crosses happen. Normally the produced hybrid is sterile due to the lack of chromosome pairing, irregular segregation and the formation of disequibred aborted gametes. If chromosomes are doubled, the hybrid will restore its fertility due to the presence of homologous chromosomes and produce seeds which grow to form a fertile progeny.

The progeny will segregate, when subjected to natural selection pressure in a certain habitat, it will be stabilized to form a new species. This process of stabilization will exclude the extremest segregations which will not adapt to the local environment. In the further generations, a closed gene pool may be formed, and common characteristics shall be recognized for its population. (Stebbins, 1966).

In our cassava breeding program, a hybrid between *M. glaziovii* Muell. and cassava clone EB1 was obtained in 1992. It was propagated vegetatively and maintained in the following years. In 2000, a polyploid type was obtained by the treatment of colchicine to vegetative lateral buds (Nassar, 2003). This type has restored its fertility, having it reached 91% compared to 13% in the diploid hybrid. Follows a description of the polyploidized fertile type.

Tall shrub up to 3 m. tall at 3 years old. Trunk at the base 4 cm diameter. Young stems glabrous. Leaves alternate; stipules caducous; petioles ca 10 cm long occasionally as long as 15 cm, petiole attachment to lamina basal. Laminae membranaceous, palmately 3 lobed; median lobe globose with obtuse apex ca 10-12 cm wide (see photo in photos gallery).

Inflorescence a monoecious panicle, ca 20 cm long, glabrous with bracteoles setaceous, ca 2 cm long, less than 0.20 cm wide. Pistillate flowers restricted to the base of inflorescence, pedicels ca 1 cm long, tepal 1 cm long cleft into 5 lobes; disc prominent; ovary globose. Staminate buds ovoid 1.0 cm long, greenish pigmentation; disc prominent. Stamen 10 in 2 whorls of 5 each. Fruits are winged; seeds 0.5 cm long. Fruits are winged, seeds 0.5 cm long.

This species is named in honour of David Rogers who contributed to the great knowledge of *Manihot* in Brazil and South America.

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