

# CITRUS GERMPLASM BANK



Inventariado 25/10/2013  
Responsável Jan

**Embrapa**

Cassava & Tropical Fruits

# CITRUS GERMPLASM BANK

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The citrus plants comprise the genus *Citrus* and relatives of it, with emphasis to *Poncirus*, *Fortunella*, *Microcitrus*, *Eremocitrus* and *Clymenia*. They are among the oldest plants cultivated, a large portion of them native to the Asian continent. The introduction, conservation, characterization, evaluation and documentation of citrus are activities fundamental in dealing with germplasm of this important plant group, contributing as basis to breeding programs and to the diversification of cultivars.

The studies on *Citrus* at the National Research Center for Cassava and Tropical Fruits (CNPMPF), also called Embrapa Cassava & Tropical Fruits, located in Cruz das Almas, Bahia, Brazil, started at the beginning of the decade of 1950, at the Instituto Agrônômico do Leste - IAL. From the decade 1980, using as basis the Active Germplasm Bank of Citrus (BAG Citrus) of Embrapa Cassava & Tropical Fruits, has been carried out a genetic improvement program based upon hybridizations aiming specially at obtaining rootstocks adapted to regional conditions, with emphasis on tolerance to drought stress.

The localization under tropical conditions, on latitude 12° South, of the BAG Citrus has to be pointed out, as it may be unique on world level in such environment. In North and Northeast Brazil this Germplasm Bank has been the main source of citrus botanical material, with some branching to other regions of the country.

The morphological characterization of the germplasm has been carried out based upon a list of minimum descriptors established by the International Plant Genetic Resources Institute - IPGRI, in addition to cytogenetic techniques using chromosomal banding, done at the Federal University of Pernambuco - UFPE.

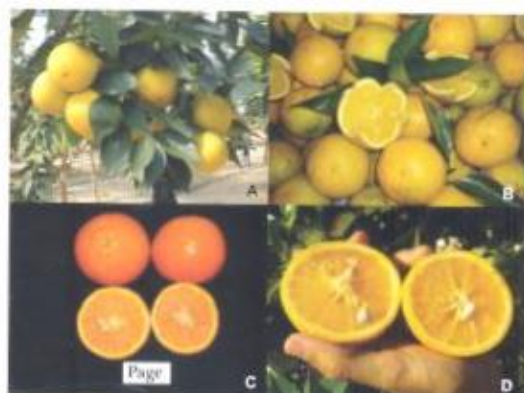
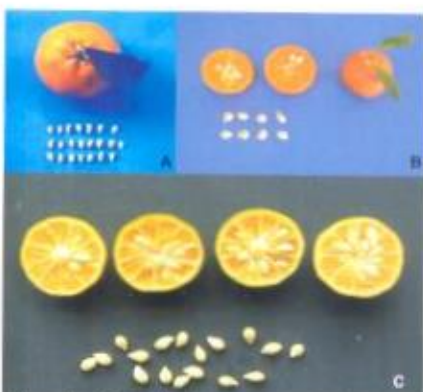
The BAG Citrus has been used in support of the Genetic Improvement Program of Citrus of Embrapa Cassava & Tropical Fruits, concerning the selection of promising varieties introduced, rootstocks (Figure 1) and scions (Figure 2), and the hybridizations for the generation of new varieties.

In Table 1 is shown information on the number of accessions presently available within each species and in Figure 3 is illustrated the variability existent in the Active Germplasm Bank of Citrus with respect to fruit sizes and shapes.

**Table 1.** Number of accessions for each species in the Active Germplasm Bank of Citrus at Embrapa Cassava & Tropical Fruits, Cruz das Almas, Bahia, Brazil, 2006.

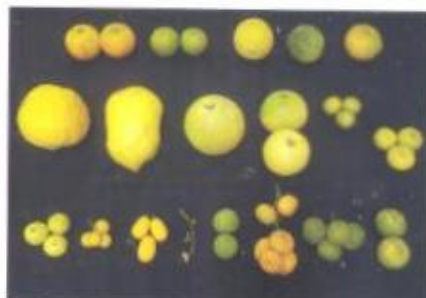
| SPECIES                                   | COMUM NAME           | Nº OF ACCESIONS | SPECIES                             | COMUM NAME                 | Nº OF ACCESIONS |
|---|----------------------|-----------------|-------------------------------------|----------------------------|-----------------|
| <i>C. sinense</i> (L.) Osbeck             | Laranjas doces       | 226             | <i>C. myrtifolia</i> Raf            | Laranja Chinoto            | 03              |
| <i>C. paradasii</i> Macfad                | Pomelos              | 35              | <i>C. tangera</i> hort. ex Tanaka   | Tangerina Diancy           | 03              |
| <i>C. reticulata</i> Blanco               | Tangerinas           | 46              | <i>C. medica</i> L.                 | Cidra                      | 03              |
| <i>C. dedecosa</i> Ten                    | Mexericas            | 18              | <i>C. keryi</i> hort. ex Tanaka     | -                          | 02              |
| <i>C. latifolia</i> (Yu Tanaka) Tanaka    | Lima acida Tahiti    | 06              | <i>C. karna</i> Raf                 | Karna                      | 02              |
| <i>C. imoni</i> (L.) Burm. f              | Limões verdadeiros   | 10              | <i>C. tankan</i> Hayata             | Tankan                     | 03              |
| <i>C. jambhiri</i> Lush                   | Limões rugosos       | 10              | <i>Citrus</i> spp.                  | -                          | 04              |
| <i>C. aurantium</i> L.                    | Laranjas azedas      | 09              | <i>Poncirus trifoliata</i> (L.) Raf | Trifoliata                 | 08              |
| <i>C. clementina</i> hort. ex Tanaka      | Tangerina Clementina | 08              | <i>Fortuella</i> spp                | Kumquat                    | 02              |
| <i>C. limonia</i> Osbeck                  | Limão Cravo          | 07              | <i>Microcitrus</i> spp.             | Lima selvagem da Austrália | 02              |
| <i>C. usshiu</i> Marcov.                  | Tangerina Satsuma    | 02              | Híbridos de tangerina               | -                          | 57              |
| <i>C. grandis</i> Osbeck                  | Toranzas             | 04              | Híbridos de Poncirus                | -                          | 138             |
| <i>C. volkameriana</i> V. Ten. & Pasq     | Limão Volkameriano   | 03              | Híbridos de limão Cravo (C. imonia) | -                          | 09              |
| <i>C. sunki</i> (Hayata) hort. ex Tanaka  | Tangerina Sunki      | 06              | Híbridos de limão                   | -                          | 11              |
| <i>C. limetoides</i> Tanaka               | Lima doce            | 02              | Volkameriano (C. volkameriana)      | -                          | -               |
| <i>C. aurantifolia</i> (Christm.) Swingle | Limão Galego         | 02              | Outras espécies                     | -                          | 31              |

\*May / 2006



**Fig. 1.** Rootstocks recommended by Embrapa Cassava & Tropical Fruits: Rangpur lime selection 'Santa Cruz' (A); tangerine 'Sunki' selections 'Maraviha' (B) and 'Tropical' (C).

**Fig. 2.** Scion-varieties recommended by Embrapa Cassava & Tropical Fruits from observations made in the Active Germplasm Bank of Citrus: Pineapple (A), Salustiana (B), Page (C) and Tuxpan (D).



**Fig. 3.** Sample of variability in fruit size and shape in the Active Germplasm Bank of Citrus.

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