

“BRS Rosada” – Colourful and highly nutritional table cassava

Main morphological characteristics

Root	Characteristics
Shape	Conical
Skin colour	Light brown
Flesh colour	Pink
Cortex colour	Yellow
Aerial parts	Characteristics
Terminal bud colour	Purplish-green
Terminal branches' colour	Green
Petiole colour	Reddish-green
Lobe shape	Lanceolate
Stem colour	Light brown

Technical recommendations

This variety is recommended for plantations under conditions such as those found in the *Recôncavo Baiano* and the *Tabuleiros Costeiros*, similar to Cruz das Almas, Bahia. These areas present an annual rainfall of around 1,200 mm, concentrated throughout April to August, an average annual temperature of 24°C and relative humidity of around 80%. The predominant soils are of the red-yellow *latosol* type.

The planting should take place at the beginning of the rainy season, using selected cassava roots of approximately 20 cm in length. The field must be kept clean for at least the first 120 days after planting.

By associating root yield data with quality, this variety is recommended for harvesting between 8 and 13 months after planting. By using irrigation and fertilization, harvesting can take place earlier, from six months of age.

“BRS Rosada” – Colourful and highly nutritional table cassava

Wania Maria Gonçalves Fukuda¹

Márcio Eduardo Canto Pereira

Introduction

The project to develop cassava germplasm for different Brazilian ecosystems and uses, led by *Embrapa Mandioca e Fruticultura* and implemented in partnership with several of the country's research and teaching institutions, has as one of its objectives the broadening of the genetic base of cassava for fresh consumption.

The first step to meet this demand was taken in 1994, with the establishment of a cassava germplasm bank (collection of varieties) of 'table' cassava, also known as sweet cassava, *macaxeira* or *aipim*, in the experimental area of *Embrapa Mandioca e Fruticultura*.

Currently, the collection includes 130 accesses, obtained in the Brazilian Northeast or originating from the breeding program.

In 2001, *Embrapa Mandioca e Fruticultura* began to carry out research to identify and develop varieties of cassava with higher nutritional value, particularly in relation to the content of minerals, such as iron and zinc, and carotenoids, such as beta-carotene (precursor of vitamin A) in yellow-coloured roots, and lycopene in varieties of pink- and red-coloured roots.

The qualitative and quantitative evaluation and characterization of this material allowed for the selection of the *BRS Rosada* (*Cenoura Rosada*) variety, with its high level of lycopene in the roots, high root yield potential and quality for the fresh cassava market.

Origin, yield and adaptation

The *BRS Rosada* variety originates from the municipality of Ibiassucê, located in the southeast of the state of Bahia, where it was collected and introduced into the Cassava Germplasm Bank of *Embrapa Mandioca e Fruticultura*, where it received the code BGM 456.

In experiments conducted in randomized blocks and repeated six times, undertaken under the conditions of the municipality of Cruz das Almas, Bahia, in 2002 and 2003, this variety yielded 29 t/ha of roots and 7.9 t/ha of dry matter, at 12 months of age. The cooking time

¹ Researchers from *Embrapa Mandioca e Fruticultura Tropical*. Cx. Postal 007, 44380-000, Cruz das Almas- Bahia.

E-mail: wfukuda@cnpmf.embrapa.br, marcio@cnpmf.embrapa.br,
luciana@cnpmf.embrapa.br, catie@cnpmf.embrapa.br

was of 10 minutes. The cooked dough presented a pink coloration, an absence of fibres and plastic consistency.

In 2003 and 2004, the variety's growth curves were determined for the purposes of potential yield and root quality. Between the sixth and the thirteenth month after planting, the *BRS Rosada* variety showed a varying root yield of 3.8 t/ha to 33.8 t/ha, with maximum yield at 13 months of age. The dry matter content in roots varied from 25.6 t/ha at 6 months and 36.6 t/ha at 13 months.

With respect to its qualitative characteristics, this variety presented between 40 to 50 ppm of HCN in the raw roots and a cooking time of 12 to 25 minutes in roots 6 to 13 months old. The lowest cooking time was observed in roots of 10 months. The cooked dough presented intense pink coloration, characteristic flavour, absence of fibres, fine texture and plastic consistency.

The lycopene content in roots, determined by the HPLC method, varied from 8.86 µg/gram, at 8 months after planting, and 13.44 µg/gram, at 10 months, based on fresh matter. This variety stands out from others due to its high root carotenoid content, mainly represented by lycopene, which has positive effects on human health, including aiding the prevention of cancer, specifically prostate cancer. The pink coloration is an indicator of this substance's presence in the roots. The roots can be consumed in cooked form or used for the preparation of juices, cakes, puddings and other derivatives. The pink coloration of products made from *BRS Rosada* roots is the result of the presence of lycopene, combining the nutritional value with the products' most attractive quality.