CBAB
CROP BREEDING AND APPLIED BIOTECHNOLOGY

CULTIVAR RELEASE

Peach cultivar BRS Citrino

Maria do Carmo Bassols Raseira[1*], Rodrigo Cezar Franzon[2], José Francisco Martins Pereira[3], Ciro Scaranari[2] and Nelson Pires Feldberg[3]

Crop Breeding and Applied Biotechnology
18: 234-236, 2018
Brazilian Society of Plant Breeding.
Printed in Brazil
http://dx.doi.org/10.1590/1984-70332018v18n2c34

Abstract: *'BRS Citrino' is a highly productive canning peach that has a round to conic shape. The flesh has a sweet acid flavor with a slight bitterness, giving a good quality product when canned. It is adapted to southern Rio Grande do Sul, where the production of processed peaches is concentrated.*

Key words*: Prunus persica, canning peach, early ripening, low chilling, non-melting.*

INTRODUCTION

The peach is one of the most important temperate fruit species worldwide. Peach production reached 21.6 million tons, in 2013 (FAO 2015). In the same year, Brazil produced 217.706 tons of peaches on 18.091 ha (FAO 2015). Within Brazil, 65.1% of these were produced in the state of Rio Grande do Sul; 14% in São Paulo; 11.8% in Minas Gerais; 7.5% in Paraná and 1.6% in Santa Catarina. Besides the economic importance, peach production has also a great social importance. Thousands of families, mainly in the Southern states of Brazil, depend on peach culture (direct or indirectly) for their main source of income.

There is, generally, a large demand for early or very early ripening peaches, especially in subtropical production areas which supplies fresh fruit to the market before the main temperate production regions. Early peaches give better profit to growers because of their high market price (Byrne et al. 2012) plus their lower costs, since they need less sprays applications.

In Southern Brazil, early peaches ripen in October or the first half of November (Raseira et al. 2015) which allows them to avoid high pressures of pests such as the oriental-fruit-moth. The fruits produced at that time, however, are generally of small size and low solid soluble content (SST), due to the short fruit development period and climatic conditions. Embrapa Clima Temperado released the cv. BRS Bonão, an early peach cultivar for processing, in 2009 (Raseira et al. 2014). This cultivar produces good sized fruits, with an average weight superior to 100 g and soluble solids content varying from 8° to 12° Brix. However, this cultivar is very early blooming which has led to inconsistent production.

The cultivar BRS Citrino, released in 2016, differs from 'BRS Bonão', especially with respect to the production stability. It has performed consistently when winter temperatures had large fluctuations and the temperatures during bloom have reached 28 °C.

***Corresponding author:**
E-mail: maria.bassols@embrapa.br

Received: 26 May 2017
Accepted: 05 November 2017

[1] Embrapa Clima Temperado, 96.001-970, Pelotas, RS, Brazil
[2] Embrapa Produtos e Mercado, 13.070-115, Campinas, SP, Brazil
[3] Embrapa Produtos e Mercado, 89.460-000, Canoinhas, SC, Brazil

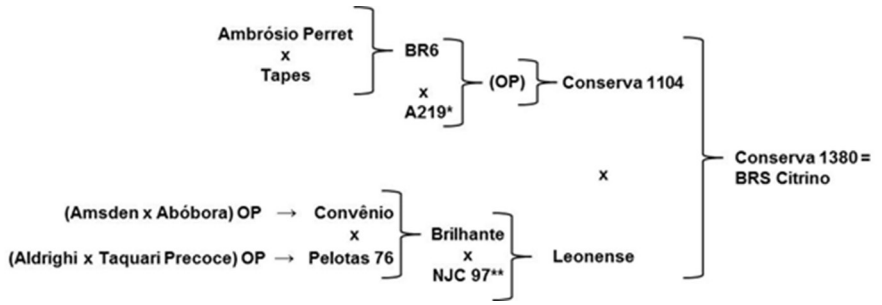

Figure 1. Genealogy of cultivar BRS Citrino. (OP = open pollination; *pollen introduced from the University of Arkansas peach breeding program; **pollen introduced from Rutgers University, New Jersey).

CHARACTERISTICS OF THE CULTIVAR

Origin

The cv. BRS Citrino originated from a controlled hybridization made in 2000, between the selection Conserva 1104 and the cultivar Leonense, both developed by the Embrapa´s program (Figure 1). Seeds of this cross were disinfested, stratified and after germination and growth in the greenhouse, the seedling plants were transplanted to the experimental field, in the winter of 2001. Three years later, one plant of this progeny was selected, budded and since then, tested as Conserva 1380. The following year, five plants of Conserva 1380 were planted at the Embrapa experimental field, in Pelotas (lat 31° 40' 47" S, long 52º 20' 24" W and alt 60 m asl). In 2013, an observation plot was planted in a local fruit grower´s orchard, located in the Pelotas rural area, known as Santa Áurea.

Figure 2. Fruits of 'BRS Citrino', on adult plants, at Experimental Field of Embrapa Clima Temperado, in 2015. (Photo: José F.M. Pereira).

Plants

The plants of 'BRS Citrino' are medium height and vigor (Figure 2). Flowers are showy with a medium density (on average 15 nodes per 25 cm branch). Full bloom generally occurs during the last third of July (sometimes by mid July) and harvest generally begins by the first week of November (Tables 1). This is about two weeks before the fruits of cv. Sensação (a cultivar widely planted in Southern Rio Grande do Sul, which produces fruits for canneries) are ripe. 'BRS Citrino' coincides, partially, with the season of cv. Bonão, another canning peach cultivar. It is inferior to this one in size

Table 1. Full bloom data, chilling hours to full bloom and first harvest of the new cultivar, BRS Citrino, and the commercial cvs. BRS Bonão and Sensação

	Full bloom data			Chilling hours until full bloom*			Beginning of harvest		
Year	BRS Citrino	BRS Bonão	Sensação	BRS Citrino	BRS Bonão	Sensação	BRS Citrino	BRS Bonão	Sensação
2006	07/10	07/04	07/16	125	115	125	-	-	-
2007	07/18	07/10	07/26	542	439	576	11/12	11/14	-
2008	07/12	07/07	07/23	71	71	71	10/21	10/21	11/04
2009	07/26	07/16	08/06	291	210	369	11/05	11/09	11/17
2010	07/17	07/16	08/08	162	150	331	11/05	11/10	11/17
2011	07/21	07/15	08/09	284	260	386	11/08	11/16	11/17
2012	07/19	07/03	08/01	342	169	436	10/30	10/30	-
2013	07/11	**	**	95	-	-	10/30	No crop	No crop
2014	07/16	07/10	08/02	64	64	109	10/21	No crop	10/29
2015	07/24	06/28	08/07	74	57	74	11/08	10/30	11/05

- Missing data; * Chilling hours ≤ 7.2°C; ** extended bloom and no clear dates for full bloom.

Table 2. Production and average fruit weight of the new cultivar, BRS Citrino and the commercial cvs. BRS Bonão and Sensação, in the collection orchard of Embrapa Clima Temperado

	Production*			Average fruit weight (g)		
Year	**BRS Citrino**	**BRS Bonão**	**Sensação**	**BRS Citrino**	**BRS Bonão**	**Sensação**
2006	4	-	-	-	122	-
2007	4	3-4	3	89	140	124
2008	5	3	3	-	121	100
2009	3-4	3	3	129	170	135
2010	4	3	2	118	87	95
2011	4-5	4	5	115	119	89
2012	5	5	5	100	92	100
2013	5	2	1	126	-	-
2014	2	1	2	130	-	78
2015	4	0-1	3-4	116	90	103

- missing data; * Production rated on a scale of 1 to 5, where 1= very few fruits; 2= low production; 3 = an commercially acceptable productivity, without much need for thinning; 4= high productivity needing a lot for thinning; and 5 = excessive yield

and soluble solids content but superior in productivity, yield stability, fruit shape and color, as well as, in texture after processed.

Fruits

'BRS Citrino' produces round to conic shaped fruits (Figure 2), without pronounced tip. Fruit size varies with the year, with a diameter between 5.4 cm and 7.4 cm, according to management and the weather conditions.

The productivity was acceptable or high, in nine (9) out of 10 years and more consistent than both 'BRS Bonão' and 'Sensação' (Table 2).

Table 3. Average total soluble solids content (°Brix) of the new cultivar, BRS Citrino and the commercial cvs. BRS Bonão and Sensação

Year	BRS Citrino	BRS Bonão	Sensação
2006	-	10.9	-
2007	6.0	11.1	11.1
2008	8.0	10.0	8.9
2009	9.1	8.8	10.2
2010	11.2	15.4	-
2011	11.6	-	10.1
2012	8.7	7.4	11.2
2013	7.4	-	-
2014	7.9	-	10.8
2015	8.2	8.5	9.0

- missing data

The skin is yellow with 30% of the surface covered by red, sometimes reaching up to 60 to 70% (Figures 2 and 3). Flesh is non-melting and medium firm. The fruits have a sweet acid flavor with predominance of the acidity, giving a good taste when canned in syrup. The soluble solids content is usually low (Table 3) which makes this cultivar not suitable for the juice or the fresh market, in spite of the attractive appearance.

Availability

Plants of this cultivar can be obtained in the nurseries licensed by Embrapa, which are listed on the following site: https://www.embrapa.br/produtos-e-mercado/pessego.

REFERENCES

Byrne DH, Raseira MCB, Bassi B, Piagnani MC, Gasic K, Reighard GL, Moreno MA and Perez S (2012) Peach. In Badenes ML and Byrne D (eds) **Fruit breeding**. Springer Science Business Media, LLC, Philadelphia, p. 505-565.

FAO (2015) FAOSTAT - Food and Agriculture Organization of the United Nations; Statistical Division. Roma. Avaliable at <http://faostat3.fao.org/home>. Accessed on Feb. 2, 2016.

Raseira MCB and Franzon RC (2014) Melhoramento genético. In Raseira MCB, Pereira JFM and Carvalho FLC (eds) **Pessegueiro**. Embrapa, Brasília, p. 57-72.

Raseira MCB, Franzon RC, Scaranai C, Feldberg N and Pereira JFM (2015) Programa de melhoramento genético de frutas de caroço da Embrapa. In Anais do 6th encuentro latinoamericano prunus sin fronteras. Embrapa, Brasília, p. 74-76.