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# 'BRS RubraMoore': A Fresh Market Peach for Southern Brazil

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Abstract

The consumers should always be the focus of any production process or, in other words, it is the consumer who establishes the rules of what should be produced. The large Brazilian markets, in spite of some differences in preference among States, prefer sweet rather than acid fruits and this is also true for peach. Cv. BRS RubraMoore fulfills this requirement besides producing attractive fruits with good color and shape. This cultivar was tested in different South and Southeast areas of Brazil, under the experimental designation of Cascata 1579. The fruit has white, sweet, low acid flesh, and is semi-free from the pit.

Peach was introduced to Brazil, probably around the year of 1532, in the area known as Capitania de San Vicente, now the state of São Paulo. From there, the culture was expanded to the highlands of several Brazilian states, in search of better climate and soil conditions (Barbosa and Pio, 2016). However, even those better areas were inferior to those of more temperate climate regions of the world (Raseira et al, 2015b).

Peach production in warm climatic areas presents several common problems, such as fruit shape – with pointed fruit tip and/or prominent suture (Topp et al., 2008), smaller fruit size, low productivity, and high disease incidence when compared to colder regions. These factors are important considerations for breeding programs aiming to develop highly productive cultivars with fruits of good appearance and flavor.

The Embrapa Clima Temperado peach breeding program, was initiated even prior to this Institution, and was established at the former Experiment Station of Pelotas, Ministry of Agriculture. Over the years, this program was responsible for the release of dozens of peach cultivars with 18 processing and 15 fresh market cultivars still planted in several areas of the South and Southeast regions of Brazil (Raseira et al., 2015b).

The program collaborates closely with growers and industry. This cooperation was intensified in 2002 and amplified in 2008, through the planting of observation trials with large and small commercial farms. In the last seven years, 34 commercial operations helped to evaluate 67 fresh market peach selections from the Breeding Program. The plantings are located in the three Southern Brazilian States and also in the Southeastern states of São Paulo, Minas Gerais and Espírito Santo. This collaborative effort lead to the release of five fresh market peach cultivars: 'BRS Rubimel'; 'BRS Kampai'; 'BRS Regalo'; 'BRS Fascínio' and 'BRS Mandinho' (Raseira et al., 2015a; Raseira et al., 2014; Raseira et al., 2010). In 2016, another cultivar was released: the cv. BRS RubraMoore.

'BRS RubraMoore' overlaps the season of cvs. BRS Fascínio and BRS Regalo, released

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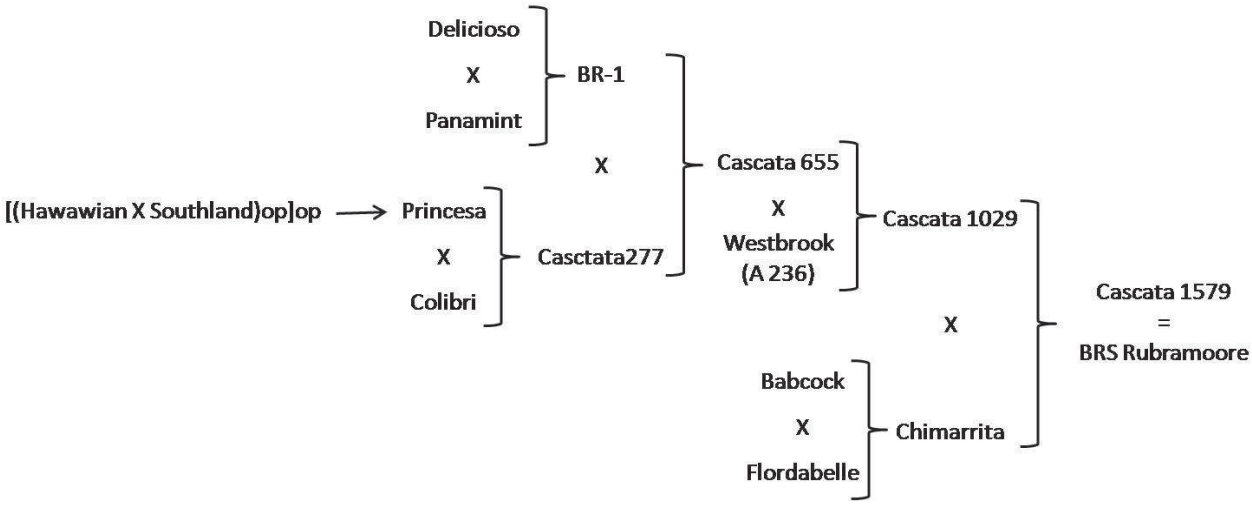


**Fig. 1.** Genealogy of peach cv. BRS RubraMoore.

in 2012. It may not produce fruits as large as does 'BRS Fascínio' but it has superior appearance, better shape, color, and flavor.

*Origin.* 'BRS RubraMoore' originated from a controlled cross, made in 2004, between selection Cascata 1029 and cv. Chimarrita. Selection Cascata 1029 comes from Embrapa's program, from a cross between another Embrapa's selection, Cascata 655 and a selection of the University of Arkansas program, A 236 (Fig. 1). The name 'RubraMoore' is in honor of one of the greatest fruit breeders, Dr. James N. Moore, Emeritus Professor of the University of Arkansas (deceased in January 2017).

Young plants of the 2004 cross, were planted in the experimental field in Embrapa, 31°40'47"S; 52°20'24"W, in 2005. In 2007 and 2008 the progeny was evaluated and the plant number 2 was denominated as Cascata 1579. The tree was propagated by budding and planted in Embrapa's peach collection. Since the fruit quality was outstanding, compared to the others, in 2010, new plants were budded and were planted in 14 observation trials in various States.

*Plant description.* 'BRS RubraMoore' trees have medium vigor and semi-vertical

**Table 1.** Phenology of cvs. BRS RubraMoore, BRS Fascínio and BRS Regalo, Embrapa, Pelotas (31°40' 47"S, 52°20'24"W; 57m)

| Year | Chill hours[z] | | | Full bloom | | | Begining of harvest | | |
|---|---|---|---|---|---|---|---|---|---|
| | BRS RubraMoore | BRS Fascínio | BRS Regalo | BRS RubraMoore | BRS Fascínio | BRS Regalo | BRS RubraMoore | BRS Fascínio | BRS Regalo |
| 2009 | 389 | 389 | 389 | 08/14 | 08/18 | 08/18 | - | 12/04 | 12/14 |
| 2010 | 388 | 389 | 389 | 08/18 | 08/23 | 08/24 | 12/18 | - | 12/08 |
| 2011 | 386 | 386 | 386 | 08/11 | 08/13 | 08/09 | 12/21 | 12/08 | 12/08 |
| 2012 | 441 | 441 | 441 | 08/07 | 08/13 | 08/12 | 11/27 | 12/06 | 12/06 |
| 2013 | 269 | 304 | 304 | 08/05 | 08/12 | 08/12 | 11/27 | 12/05 | 11/26 |
| 2014 | 109 | 129 | 118 | 08/01 | 08/10 | 08/06 | 11/26 | 12/02 | 12/03 |
| 2015 | 76 | 76 | 76 | 08/06 | 08/12 | 08/12 | 11/30 | 11/30 | 11/30 |

[z] Hours of temperature ≤ 7.2°C, until first bloom.

growth habit. The green intensity of their leaves is medium with a serrate edge and the petiole nectaries are reniform.

Full bloom generally occurs, during the second week of August (Southern hemisphere). Fruits ripen in early November, partially overlapping with harvests of cv. BRS Fascínio (Tables 1). The new cultivar is inferior to 'BRS Fascínio' and inferior or similar to 'BRS Regalo', in productivity and fruit size (Table 2), however it surpass both in fruit appearance (shape and color) and flavor as well as total soluble solids (Table 2). The productivity is considered as good, rated 3 to 4 (Tables 2 and 3), on a scale of 1 to 5 (1= few fruit per tree, 5= excessively productive, needing too much fruit thinning).

*Fruit description.* Fruits of 'BRS RubraMoore' are generally round but sometimes tend to ovate, with a slightly protruding suture and no tip (flat apex). The epidermis is white with a little greenish ground color and about 80% of the fruit surface with a red blush (Fig. 2). The flesh is melting and white with red around the pit. Fruit diameter varies from 5.5 to 7.7 cm, according to the orchard management and climatic conditions but under Pelotas conditions, on poor shallow soil without irrigation, it has been between 5.5 and 6.0 cm.

**Fig. 2.** Fruits of peach cv. BRS RubraMoore, in Guaíba, RS (30°6'51"S; 51°19'41"W; 21m of altitude). Photo by Gilmar Marodin.

*Adaptation.* The chilling requirement of the cv. BRS RubraMoore is estimated as being between 200 and 300 hours.

This cultivar was tested in several counties of different Brazilian States: Guaíba, Bento Gonçalves and Veranópolis, in Rio Grande do Sul (RS) State; Canoinhas (Table 3), Descanso, Alto Bela Vista and Videira, in Santa Catarina (SC); Araucária and Pato Branco, in Paraná (PR); Jarinu and Paranapanema, in

**Table 2.** Productivity and fruit quality of cvs. BRS RubraMoore, BRS Fascínio and BRS Regalo, Embrapa, Pelotas (31°40' 47"S, 52°20'24"W; 57m)

| Year | Production[z] | | | Average fruit weight (g) | | | TSS (°Brix) | | |
|---|---|---|---|---|---|---|---|---|---|
| | BRS RubraMoore | BRS Fascínio | BRS Regalo | BRS RubraMoore | BRS Fascínio | BRS Regalo | BRS RubraMoore | BRS Fascínio | BRS Regalo |
| 2009 | 3 - 4 | 4 | 5 | - | 133 | 88 | - | 13.3 | 9.1 |
| 2010 | 3 | 2 | 5 | 116 | - | 82 | 15.6 | - | 13.7 |
| 2011 | 5 | 4 - 5 | 4 | 92 | 200 | 135 | 14.1 | 11.3 | 10.2 |
| 2012 | 3 - 4 | 5 | 5 | 75 | 105 | 120 | 14.6 | 13.8 | 14.0 |
| 2013 | 3 | 3 - 4 | 4 - 5 | 154 | 88 | 140 | 13.6 | - | 10.2 |
| 2014 | 3 | 2 | 4 - 5 | 120 | - | 120 | 11.8 | - | 11.3 |
| 2015 | 3 - 4 | 1 | 1 - 2 | 135 | 151 | 115 | 10.0 | 10.8 | 12.1 |

[z] Productivity rating from 1 to 5; where 1= just a few fruits on the tree; 2= low production; 3= an average commerical crop, but almost no need for thinning; 4= high production with fruit thinning needed and 5= excessive production.

**Table 3.** Comparison of phenology, cropping, and fruit size, for 'BRS RubraMoore' and 'BRS Fascínio', in Canoinhas, SC (26°10' 38"S, 50°23'24"W; 839m) in the years 2013 to 2015.

| Year | Cultivar | Blooming | | | Leafing | Harvest | | fruits/tree | Average | Estimated yield |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Start | Full | Final | (10%) | Start | Final | | Fruit weight (g) | (Kg·tree$^{-1}$) |
| 2013[z] | BRS RubraMoore | 07/29 | 08/05 | 08/26 | 07/29 | - | - | - | - | - |
| | BRS Fascínio | 08/05 | 08/12 | 09/09 | 08/12 | - | - | - | - | - |
| 2014 | BRS RubraMoore | 07/21 | 07/28 | 08/14 | 07/21 | 12/08 | 12/15 | 364 | 100.9 | 36.7 |
| | BRS Fascínio | 07/17 | 07/24 | 08/22 | 07/24 | 11/28 | 12/15 | 731 | 82.8 | 60.5 |
| 2015 | BRS RubraMoore | 07/27 | 08/05 | 08/10 | 07/27 | 11/30 | 12/09 | 165 | 137.5 | 22.7 |
| | BRS Fascínio | 08/05 | 08/10 | 08/17 | 08/09 | 11/25 | 12/14 | 194 | 150.3 | 29.2 |

[z] 2013 was an exceptionally cold year with two or three snows in that region.

São Paulo (SP); Barbacena, in Minas Gerais (MG); Domingos Martins (Venda Nova do Imigrante), in Espírito Santo (ES). It was observed that leafing was less than desirable in Jarinu, SP, and Descanso, SC, indicating that in these areas in some years there might be a need for chemical dormancy breaking.

*Availability.* Plants of this cultivar can be obtained from licensed nurseries according to information available on: https://www.embrapa.br/produtos-e-mercado/pessego.

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