‘Alisio 15®’; An Early-maturing Peach Cultivar for the Fresh Fruit Market

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‘Alisio 15®’, a new peach [Prunus persica (L.) Bastch] for the fresh market, resulted from a cross made in Murcia (Spain) as part of the IMIDA-NOVAMED breeding program with the aim of breeding new early-ripening cultivars with dark red skin, good size, and high sugar content as an improvement over other early cultivars currently available. This cultivar combines very early-season ripening, extensive red-blushed skin, and very good eating quality of the fruit. Few peaches in the Mediterranean area are marketable in the very early season (mid-April to early May) and the European-wide demand for early-maturing peaches exceeds supply. In this respect, the new cultivar, Alisio 15®, has the potential to contribute to the supply of fresh fruit and provide an improvement in the quality of early fruit.

Origin

‘Alisio 15®’ originated from an open pollination of the selection S2099, which was obtained from a cross between ‘Candor’ and the low-chill requirement cultivar Floradprince released by the University of Florida (Okie, 1998; Sherman et al., 1982) (Fig. 1). The open-pollinated seeds were collected in 2005 at the Torreblanca Field Station, Torre Pacheco, Murcia, Spain, and the seeds were germinated through in vitro embryo rescue and grown in the greenhouse until planting in Mar. 2006. Seedlings fruited for the first time in May 2007. ‘Alisio 15®’ was preselected in a high-density planting of seedlings in the Torreblanca Field Station, Torre Pacheco, Murcia, Spain (lat. +37°46’ N, long. 0°53’ W). The location where the seedlings were grown is an altitude of 36 m above sea level (m.a.s.l.) with an average chill accumulation of 400 to 600 h below 7 °C, mostly as a result of the prevailing maritime climate. The selection was grafted on ‘Garnem®’ (Garfi × Nemaguard, P. amygdalus × P. persica) rootstock and planted at the same location. The tree and fruit were evaluated in 2010, 2011, and 2012. Trees also propagated on ‘Garnem®’ were planted in Hoya del Campo, Abarán, Murcia, Spain [lat. +38°14’ N, long. 1°20’ W], 200 m.a.s.l., and with a chill accumulation of 570 h below 7 °C.

Description

The low-chill requirements of this cultivar are indicated by its adaptation to the climatic conditions of southeast Spain. The tree is semimature and vigorous with no blind nodes. The flower density is high (48 flowers/m), with two flowers per node at least, and blooming is uniform (Frett et al., 2013; Reig et al., 2013). The flowers are medium–large size, pink, showy, and pollen-fertile. The leaves are lanceolate in shape with crenulated margins and globose leaf glands. Leaves are dark green and medium-sized (163 mm long, 47 mm wide, and the petiole 11 mm) based on a random sample of 30 shoots and leaves taken from the midpoint of each shoot (Fig. 2).

The major advantages of ‘Alisio 15®’, relative to current cultivars are its earliness and attractiveness. The fruit is oblate with a recessed tip and of medium weight (110 to 120 g) (Table 1). The suture is not very pronounced, and the fruit skin has a fine, short, and netted pubescence. The entire fruit surface is an attractive mottled dark red (Fig. 3).

Molecular Characterization

Molecular characterization of ‘Alisio 15®’ and the selection parent S2099 was performed using microsatellites [simple sequence repeat (SSR)] following Maghuly et al. (2005). Genomic DNA was isolated from young fresh leaves using the DNeasy Plant Kit (Qiagen). The following 16 primer pairs flanking microsatellites, previously developed in Prunus, were assayed (Table 2) BPPCT001, BPPCT007, BPPCT008, BPPCT015, BPPCT07, BPPCT025, BPPCT038, CPCT006, 1To whom reprint requests should be addressed; e-mail antonio.carrillo4@carm.es.

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Fig. 1. Pedigree of ‘Alisio 15®’ peach.

Fig. 2. Fruits, leaves, and flowers of ‘Alisio 15®’ peach.

Table 1. Performances in Commercial and Precommercial Stages

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Commercial Stage</th>
<th>Precommercial Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ripening Date</td>
<td>May 2007</td>
<td>May 2007</td>
</tr>
<tr>
<td>Development Period</td>
<td>88 ± 5 d</td>
<td>86 ± 5 d</td>
</tr>
<tr>
<td>Commercial Maturity Stage</td>
<td>6 weeks</td>
<td>6 weeks</td>
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<tr>
<td>Total Soluble Solids</td>
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<td>15° Brix</td>
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<tr>
<td>Titratable Acidity</td>
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<td>0.2 %</td>
</tr>
<tr>
<td>Firmness</td>
<td>13 kg</td>
<td>15 kg</td>
</tr>
<tr>
<td>Firmness Index</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

Fig. 3. Coffret of ‘Alisio 15®’ peach.
CPPCT017, CPPCT022, CPPCT044, UDP96-005, UDP98-002, UDP98-409, UDP98-410, and UDP98-412. Fluorescently labeled microsatellite fragments were analyzed on an ABI 3730 capillary sequencer (Geno´mica-Campus Moncloa del Parque Cientı´fico de Madrid, www.fpcm.es). Fragment sizing was performed using the GeneMapper analysis software (Applied Biosystems, Carlsbad, CA). The SSR fingerprinting provides a tool to uniquely indentity this cultivar with a very low probability of confusion with other cultivars.

**Availability**

This cultivar obtained by the IMIDA-NOVAMED peach breeding program was developed for the market by NOVAMED S.L. (Murcia, Spain). For bud wood availability, please contact NOVAMED PEACH SL.

### Literature Cited


