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'Don Carlos INTA' Peach

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'Don Carlos INTA' has been released by the San Pedro Experiment Station, Instituto Nacional de Tecnología Agropecuaria (INTA) to provide a medium-chilling, commercially acceptable peach that ripens after 'June Gold' and with a local peach selection 'Ginart'. 'Don Carlos INTA' has a fruit developmental period of ≈110 d and a chilling requirement of 539 h. Flowers are showy and leaf glands are reniform. This medium-sized, semifreestone peach, which ripens in early December in the northeastern fruit-growing area of the province of Buenos Aires, is a white-flesh peach considered as an alternative for the beginning of the regional midseason.

Origin

'Don Carlos INTA' peach [*Prunus persica* (Bastch) L.] was originated in the stone fruit breeding program held at the San Pedro Experiment Station located in the northeastern region of the province of Buenos Aires near lat. 34°S and long. 60°W. 'Don Carlos INTA' was tested as SP 28-15DB. The original tree was selected from a group of seedlings derived from the self-pollination of F28 P14, which was a hybrid originated from a cross made in 1977. The maternal parent was 'Jerseyqueen', a cultivar released in 1964 by the New Jersey Agricultural Experiment Station, and pollen parent 'Maravilha', a cultivar released by the University of Florida in 1975 (Okie, 1998). SP 28-15DB was asexually propagated by budding onto peach rootstock and planted in collection in 1993.

The pedigree of this selection is presented in Figure 1.

Description and Performance

'Don Carlos INTA' was selected for its adaptation to the temperate, humid peach-growing area of Argentina, which includes the northeastern part of Buenos Aires and southern part of Santa Fe provinces. This production area supplies the domestic market from late October to early February (Carra de Toloza et al., 1999).

The peach selection is adapted to the area mentioned previously where 'June Gold' is commercially grown. This medium-chill region generally averages 500 h below 7 °C. The mean temperature of the coldest month is 10.3 °C. During the evaluation of 'Don Carlos INTA', the chilling received at the San Pedro Experiment Station averaged 539 h below 7 °C (Table 1) but ranged from 226 to 663 h (Valentini and Arroyo, 1996).

The tree of 'Don Carlos INTA' is medium vigorous (Table 2) with a semispreading growth habit. Based on field observations, the selection has a moderate resistance to bacterial leaf spot [*Xanthomonas campestris* pv. *pruni* (Smith) Dye] and a good performance when facing leaf curl [*Taphrina deformans* (*Burk*)]. The moderately large leaves are lanceolate with no acute bases, smooth apices, and reniform glands.

Full bloom dates averaged 25 Aug. Flowers are showy and self-fertile. The five petals are light pink. Anthers are yellow–orange, changing to a dark orange as they age. Anthers are on filaments that are slightly longer than the style. Initially, filaments are white, turning dark pink with age. Fruit set is quite heavy in years with adequate chilling and lack of late frosts. The fruit development period for this selection averaged 100 ± 5 d over an 8-year period. Ripening is ≈8 to 10 d after 'June Gold' and 2 to 4 d before 'Ginart' (Budde et al., 2003), two cultivars commonly used in the area (Table 1).

When properly thinned to 15 cm apart, fruit weight averages 155 g (Table 3); the melting flesh is white–greenish with some red around the pit cavity, juicy, and

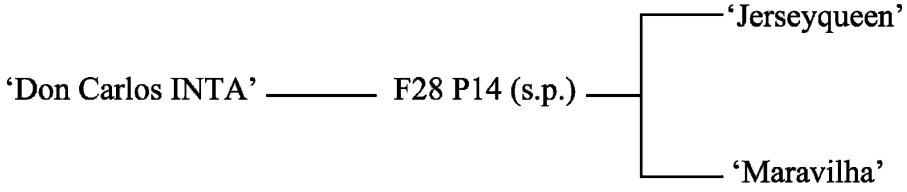

Fig. 1. Pedigree of 'Don Carlos INTA'.

Table 1. Comparison of fruit harvest date, full bloom date, and estimated chill requirement of Don Carlos INTA with other medium-chill peach cultivars at San Pedro, Buenos Aires, Argentina.

Name	Years of observation	Mean harvest date[z]	Mean date of full bloom[y]	Estimated chill hours required[x]
June Gold	8	329 ± 4.2	240 ± 5.5	520
Don Carlos INTA	8	339 ± 7.5	237 ± 6.7	539
Ginart	8	341 ± 5.3	242 ± 7.1	550

[z]Date when 20% fruit is harvested.
[y]Fifty percent flowers opened.
[x]Chilling hour requirement was estimated by comparing the time of full bloom with cultivars of known chilling requirement.

Table 2. Comparison of tree vigor and yield of Don Carlos INTA with other medium-chill peach cultivars at San Pedro, Buenos Aires, Argentina.

Name	Years of observation	Tree vigor[z]	Yield (kg/tree)[y]
June Gold	5	V	38 ± 6.2
Don Carlos INTA	5	MV	35 ± 5.1
Ginart	5	LV	36 ± 3.9

[z]V = vigorous; MV = medium vigorous; LV = low vigor.
[y]Yield of adult trees through five seasons.

Table 3. Comparison of fruiting characteristics of Don Carlos INTA compared with other medium-chill peach cultivars at San Pedro, Buenos Aires, Argentina.

Name	Years of observation	Fruit shape[z]	Skin red overcolor[y]	Avg fruit wt[x]
June Gold	5	5.4 b	60 ± 10	165 ± 10.2
Don Carlos INTA	5	6.9 a	70 ± 5	155 ± 8.4
Ginart	5	6.5 a	85 ± 5	173 ± 6.2

[z]Ratings on a subjective 0 to 10 scale, in which 0 to 4 = unacceptable, 5 = marginal, 6 = good, 7 to 8 = very good, 9 to 10 = excellent for commercial use.
[y]Percentage of skin red overcolor.
[x]Fruit weight in grams.

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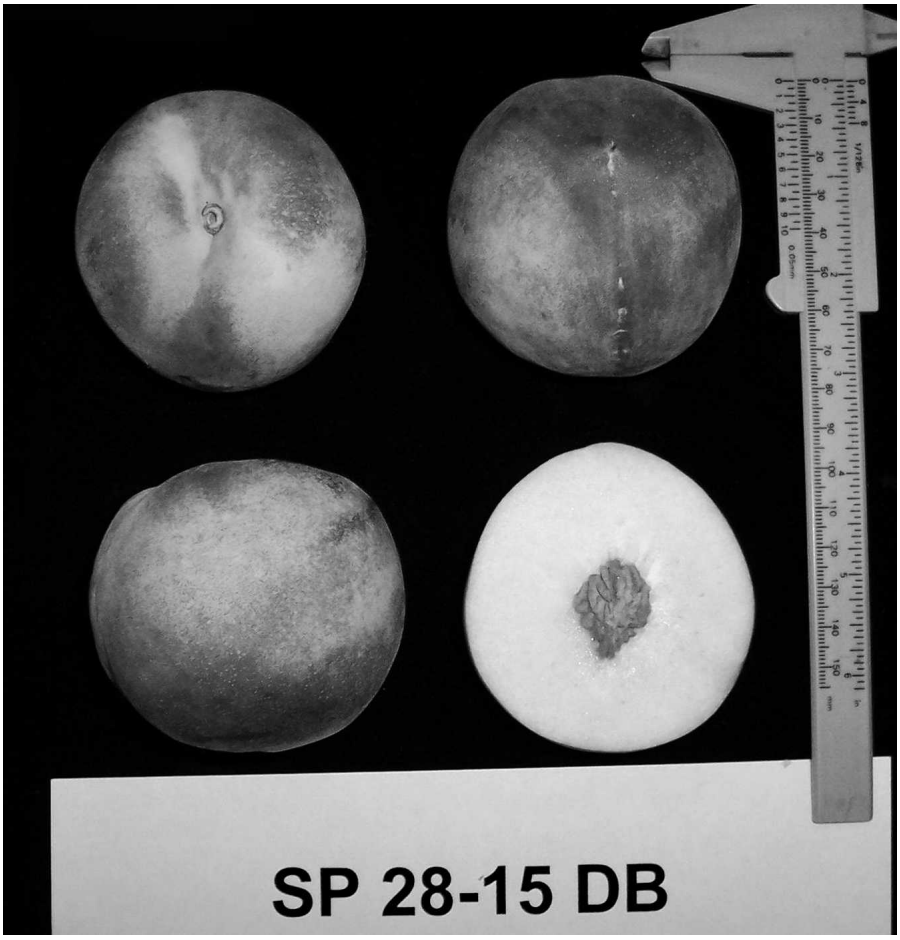

Fig. 2. Fruits of 'Don Carlos INTA' tested as SP 28-15 DB.

sweet-acid with excellent flavor (total soluble solids ≈12° Brix); flesh firmness is good, so the fruit is suitable for the domestic market. Fruit shape is round with a slight prominent suture and slight point (Table 3). The skin has a light pubescence with ≈70% dark red blush over a white ground color (Fig. 2). Fruits are semifreestone and do not show a tendency to develop split or shattered pits during the final stage of fruit swelling.

Adult trees of 'Don Carlos INTA' trained in open vase and managed with a standard regional spraying schedule (Ros, 2000) yielded 40 kg/tree of commercial fruit (Table 2), comparable to 'Ginart' (Budde et al., 2003).

Availability

A small quantity of bud wood for research purposes can be requested through the Instituto Nacional de Tecnología Agropecuaria.

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