

BLOSSOM AND RIPENING PERIODS OF BLACKBERRY VARIETIES IN BRAZIL

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'Don Agustín,' 'TropicSnow' and 'Fla. 1-8' Peaches for Central Argentina¹

GABRIEL VALENTINI, LUIS ARROYO AND WAYNE SHERMAN²

Abstract

The central peach growing region of Argentina, which includes the northeastern part of Buenos Aires and southern part of Santa Fe provinces, mainly supplies the domestic market from late October to early February. Cultivars are the cornerstone of the peach industry and testing new genotypes is necessary to replace or supplement the existing cultivars in the industry.

'Don Agustín,' was released in 1999 for trial plantings in this region. 'TropicSnow' and Fla. 1-8, have also received good evaluations. 'Don Agustín' ripens in 'Springcrest' season with superior fruit size and productivity. 'TropicSnow' ripens with 'June Gold' and is the season's first freestone, white flesh peach. It has large fruit size, attractive skin color and high flavor. Fla. 1-8 ripens in 'Flordaking' season with large fruit size, attractive skin, and good firmness in spite of irregular annual productivity.

Peach and nectarine production is mainly concentrated in the Argentina provinces of Mendoza, Buenos Aires, Santa Fe, Río Negro and Córdoba. National peach production is mostly distributed between the provinces of Mendoza (32%), mainly for canning, and Buenos Aires (28%), for fresh market (1, 2, 3, 4). The central peach growing region of Argentina includes the northeastern part of Buenos Aires province and southern part of Santa Fe province.

Approximately 10,500 ha of stone fruit are grown in this area (near 34° S and 60° W). This production area has adequate annual rainfall for peaches (no irrigation) and winter chilling averages 500 hours below 7°C. In addition, there are about 150 nurseries, representing almost 750 ha, producing fruit, forestry and ornamental trees (1).

The fruit production areas primarily supply the domestic market from late October to early February. Cultivar develop-

¹Florida Agricultural Experiment Station Journal Series No. R-07443.

²Estacion Experimental San Pedro, Instituto Nacional de Tecnologia Agropecuaria (I.N.T.A.) – Ruta Nac. 9, km 170, (2930) San Pedro, Buenos Aires, Argentina, and Horticultural Sciences Department, University of Florida, Gainesville, FL, USA, respectively.

Table 1. ‘Don Agustín’ fruit firmness, total soluble solids, and titratable acidity as malic acid at different length and temperature storage conditions.

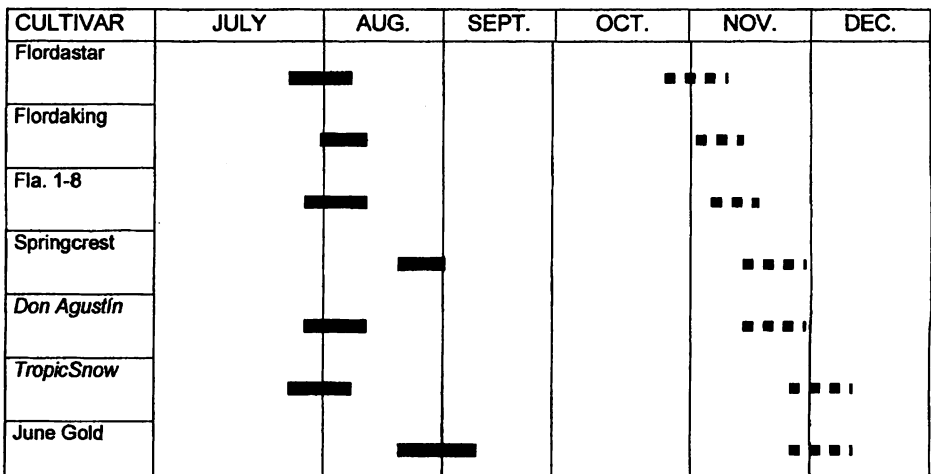
Storage period	Firmness (kg/cm ²)	TSS (°Brix)	Tit. acidity (%)
0 days	4.7 a	9.5 c	0.88 a
7 days (0°C)	4.2 a	10.3 ab	0.82 a
7 days (0°C) + 3 days (20°C)	0.8 b	10.0 bc	0.73 b
14 days (0°C)	5.3 a	9.5 c	0.86 a
14 days (0°C) + 3 days (20°C)	0.9 b	10.9 a	0.74 b

Mean separation from 0 days by LSD test at $\alpha = 0.05$

ment to replace established cultivars or fill in harvest gaps when no cultivar is available has been through the evaluation of introduced plant material from foreign breeding programs such as the University of Florida (USA). Florida bred peaches ‘San Pedro,’ ‘Maravilha,’ ‘Flordaking,’ ‘Flordastar,’ and others have been tested and recommended for commercial plantings in the central peach growing region of Argentina. Many of these cultivars have also shown potential to be grown outside “non traditional” stone fruit regions such as in northern areas of Argentina, which grow low chill cultivars for the early fresh market (6).

‘Don Agustín’ and ‘TropicSnow’ were introduced into Argentina in 1986, whereas Fla. 1-8 was introduced in 1991. ‘Don Agustín,’ a new peach cultivar that ripens with ‘Springcrest,’ between ‘Flordaking’ and ‘June Gold,’ was recommended in 1999 for regional trial plantings. ‘Don Agustín’ was released as an alternative for ‘Springcrest’ because it has larger fruit size, greater tree vigor and productivity, but produces less red skin color, and has an earlier bloom with more spring frost risk. ‘TropicSnow,’ ripening with ‘June Gold’; and ‘Fla. 1-8,’ ripening with ‘Flordaking,’ have also shown promise for commercial planting.

Table 2. Dates of bloom and fruit ripening of ‘Don Agustín,’ ‘TropicSnow’ and Fla. 1-8 peaches in relation to standard cultivars in the San Pedro area.



■ ■ ■ ■ Bloom
■ ■ ■ ■ Ripé

'Don Agustín' (tested as Fla. 81-12) originated in 1981 from a cross of ('Sunnyside' x 'Flordawon') x 'Earligrande,' and was jointly released by the San Pedro Experiment Station and the University of Florida. 'Don Agustín' produces medium to large fruit size for an early peach (6.5 cm long and 7.0 cm diam.) averaging 145 g in 80% of its crop load. Fruit are nearly round, slightly asymmetrical, with a slightly prominent tip and a smooth suture. The stem cavity is deep and quite narrow. The skin has short pubescence with 60 to 70% moderately bright red blush over a pale yellow ground color. The flesh is yellow, firm-melting, semi-cling, slightly acidic and moderately sweet. Commercially harvested fruit of 'Don Agustín' were stored at 0°C without losing firmness for up to 14 days, but they soften readily after 3 days at 20°C (Table 1). The total soluble solids (TSS) increased significantly after 7 days storage at 0°C and during 14 days at 0°C + 3 days at 20°C. The titratable acidity as malic acid decreased significantly after 7 days and 14 days storage at 0°C + 3 days at 20°C. Fruit harvested at commercial maturity averaged 9.5 °Brix, 0.88% titratable acidity as malic acid, and 5.0 kg/cm² firmness. Pits are medium size with a low tendency to split in final fruit swell. The fruit development period (FDP) is ca. 100 days, and the fruit ripens 13 to 25 November in this area. Trees are semi-spreading and quite vigorous with productivity averaging 67kg/tree. In the absence of spring frost, trees require moderate rates of early thinning to a minimum of 15cm between fruit for best size. Leaves are moderate in size, with reniform petiolar glands. About 250-300 hours below 7°C are required for strong bud development and flowering. Flowers are non-showy and self fertile. Full bloom occurs about 5 August and trees are fully foliated by 12 August. Typical bud break and ripening in the San Pedro area is compared with standard cultivars (Table 2).

'TropicSnow' (tested as Fla. 82-24W) was named previously (5) and Fla. 1-8 originated from a cross of [('Okinawa' x 'Panamint') x 'Merrill Sunrise'] op x

'Maravilha.' 'TropicSnow' produces medium size fruit (60 cm long and 65 cm diam.) averaging 140 g, with round and symmetrical shape, round tip and a slightly marked suture. The stem cavity is quite deep and narrow. The skin has a short and thin pubescence with 60% moderately bright red blush over a creamy white ground color. The flesh is white with red stripes close to the pit, melting, medium firm, freestone, and having a balanced sweet:acid flavor. Ripened fruit averaged about 12.5 °Brix, 1.35% titratable acidity as malic acid, and 4.0 kg/cm² firmness. The FDP is ca. 130 days and the fruit ripens 25 November to 8 December in this area. Trees are spreading, medium vigorous and highly productive averaging 35 to 40 kg. Trees set a very high number of flower buds and in absence of spring frosts require extensive and early fruit thinning to more than 15 cm between fruit to obtain maximum fruit size. Leaves are lanceolate and moderate to large size with reniform petiolar glands. About 250 hours below 7°C are required for strong bud development and bloom. Flowers are showy and self-fertile. Full bloom occurs about 31 July and full foliation occurs by 14 August (Table 2).

'Fla. 1-8' produces medium to large size fruit for an early peach (68 cm long and 65 cm diam.) averaging 140 g, with nearly a round and slightly asymmetrical shape, moderately prominent tip and a slightly marked suture. The stem cavity is deep and narrow. The skin has short pubescence with 60% moderately bright red blush over a pale yellow ground color. The flesh is yellow, melting, moderately firm, semi-cling, and has a balanced sweet acid flavor. Ripe fruit averaged 9 °Brix, 0.93% titratable acidity as malic acid, and 4.5 kg/cm² firmness. Pits are medium size with a low tendency to split at ripening. The FDP is ca. 93 days and the fruit ripens 8 to 15 November. The fruit tip tends to soften first in some seasons. Trees are semi-spreading with medium vigor, but productivity has varied yearly (average 35kg/tree). In absence of spring frosts, early thinning to 15+ cm between fruit is required for maximum fruit sizing. Leaves are lanceolate

and moderate size with reniform petiolar glands. About 300 hours below 7°C are required for strong bud development and bloom. Flowers are showy and self-fertile. Full bloom occurs about 7 August and full foliage occurs by 15 August (Table 2).

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Performance in Denmark of 16 European Varieties of Sweet Cherry

J. VITTRUP CHRISTENSEN¹

Abstract

Fruit quality and productivity of 16 European sweet cherry cultivars (*Prunus avium*) were evaluated during the years 1995-1999 in Denmark. High resistance to fruit cracking and large fruits are the most important quality characteristics under the Danish climatic conditions. In order of ripening the following selections are of greatest interest: 'Nabigos' is of interest for precocity, productivity and large fruits for the early season. A high cracking index reduces its value in rainy regions. 'Gardel' has almost the same qualities, but ripens one week later. 'Giorgia' is also a very productive midseason cultivar, and the fruit is firmer and has a lower tendency toward cracking. 'Techlovan' had very large and very firm fruits but the trees were not productive. The late ripening 'Gégé' is of interest for the lowest cracking index in this series of cultivars and for its very late flowering as a pollinator for late flowering, compatible cultivars.

Introduction

Cultivars of sweet cherries are continuously collected for an evaluation of the commercial value under Danish conditions. Precocity, high productivity, cracking susceptibility, and the size of the fruit are considered as the decisive characteristics in an evaluation of the potential commercial value. In this preliminary evaluation with only a few trees of each cultivar, a tendency of cropping can only be estimated. In earlier reports about 200 cultivars have been evaluated. (18, 19, 20)

Material and Methods

The propagation material received in February 1994, was grafted on 'Colt' rootstock. In the fall of 1994 three trees of each cultivar were planted at a spacing of 5 x 3 m in a screening trial for a preliminary evaluation of the fruit quality and yield potential.

Date of flowering was recorded over a 5 year period and fruit related characteristics over the 3 years 1997-1999 (3rd-5th leaf). Date of flowering was determined when 90% of flowers were open. Each year fruit

¹The Danish Institute of Agricultural Science, Department of Fruit, Vegetables and Food Science, 5792 Aarslev, Denmark.