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'Juliette' Fresh-market Tomato

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'Juliette' *(Lycopersicon esculentum* Mill.), released in Aug. 1992 for vine-ripe harvest, is a semi-determinate, red-fruited, fresh-market tomato developed at the Gosford Horticultural Research and Advisory Station in New South Wales, Australia. 'Juliette' maybe grown as a midseason crop, using a support (e.g., trellises, stakes) or an on-ground cropping system. This plant produces a high large- and medium-fruit yield with along storage life; the fruit are oblate, firm, smooth, and deep red (Nguyen et al., 1991). 'Juliette' also is resistant to fusarium wilt race 1 *(Fusarium oxysporum* f.sp. *lycopersici),* verticillium wilt strain 1 *(Verticillium dahliae),* root-knot nematodes *(Meloidogyne* spp.), and tobacco mosaic virus (TMV).

Origin

'Juliette' was evaluated under the experimental designation HRAS 85-1, an F_1 hybrid from the 79T1 × 795054-1 cross. Line 79T1 originated at the Univ. of California, Davis (R. Jones, personal communication, 1980; pedigree not available). This line is the source of resistance against *Fusarium oxysporum* f.sp. *lycopersici (I* gene), *Verticillium dahliae (Ve* gene), root-knot nematodes *Meloidogyne* spp. *(Mi* gene), TMV *(Tm-* 2^2 gene), and *Alternaria solani (ad* gene). Line 795054-1 was developed at the Univ. of Florida, East Bradenton, and it possesses the ripening inhibitor *(rin)* mutant (J.W. Scott, personal communication, 1982; pedigree not available) that is the source of the cultivar's long storage life.

Description

'Juliette' is a semi-determinate cultivar that produces a heavy foliage cover and averages 1.1 to 1.3 m in height on trellised systems. With on-ground cropping systems, foliage spreads to 1.2 m, providing a cover that protects fruit from solar injury.

'Juliette' matures in midseason. When harvested at the vine-ripe stage, the maturity date is similar to that of 'Flora Dade' and slightly later than that of 'Sunny'. This cultivar has produced yields similar to that of 'Flora Dade' and 'Red Centre' (Table 1) but produces a greater proportion of large fruit in trellised and on-ground cropping systems (Table 2). The cultivar Juliette's oblate, smooth fruit have green shoulders when unripe and jointed pedicels; they ripen to deep red and are multilocular (Fig. 1). Fruit firmness, total soluble solids concentration, and titratable acidity (Sumeghy et al., 1983) of plants grown on trellises in Somersby, Australia, from 1987 to 1989 were not significantly different than those of 'Flora Dade' and 'Red Centre' (Table 1); however, 'Juliette' fruit have a 40-day storage life at 20C, which is similar to that of 'Red Centre' and 10 days longer than that of 'Flora Dade' (Nguyen et al., 1991). Therefore, F_1 *rin* fruit may be harvested at the breaker stage or when fully ripe without quality loss (Nguyen, 1991). The long storage life, desirable firmness (1.0-1.1 mm compression), large fruit (≥80mm in diameter), and jointed pedicels of 'Juliette' likely will permit successful production for Asian markets, where attractive, fresh-looking fruit with attached pedicels are in demand.

Availability

The cultivar Juliette's commercial seed is available from Canavon Pty., P.O. Box 84, Armidale, NSW 2350, Australia. Also, small samples for trial and for breeding purposes may be obtained from V.Q.N.

Literature Cited

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Table 1. Marketable yield and fruit characteristics of 'Juliette' tomato grown on trellises in Somersby, Australia, from 1987 to 1989.[z]

	Marketable yield ($t \cdot ha^{-1}$)[y]		Firmness (compression, mm)		Total soluble solids concn (°Brix)		Titratable acidity (ml 0.1 N-NaOH juice)	
Cultivar	1987–88	1988–89	1987–88	1988–89	1987–88	1988–89	1987–88	1988–89
Red Centre	75 ab	78 b	1.1 a	1.0 a	4.0 a	4.2 a	5.4 a	4.9 a
Flora Dade	80 a	89 ab	1.3 b	1.0 a	3.0 b	4.5 a	6.1 a	6.4 a
Juliette	65 b	93 a	1.1 a	1.0 a	4.0 a	4.7 a	5.7 a	6.3 a

[z]Mean separation within columns by Duncan's multiple range test, $P \leq 0.05$. All experiments were replicated four times in a randomized block design.
[y]Total of eight harvests.
[x]Smaller values indicate firmer fruit.

Table 2. Size distribution of tomato fruit grown using trellises (Somersby, Australia; 1988–89) and on-ground cropping systems (Tatura, Australia; 1987–88).

	Fruit size distribution[z, y] (%)					
	Large		Medium		Small	
Cultivar	Trellis	Ground	Trellis	Ground	Trellis	Ground
Flora Dade	2 b	14 b	78 a	58 a	20 a	28 a
Red Centre	4 b	19 b	81 a	67 a	15 b	14 b
Juliette	17 a	34 a	78 a	56 a	5 c	10 c

[z]Mean separation within columns by Duncan's multiple range test, $P \leq 0.05$.
[y]Large ≥ 80 mm in diameter; medium = 60–79 mm in diameter; small = 45–59 mm in diameter.

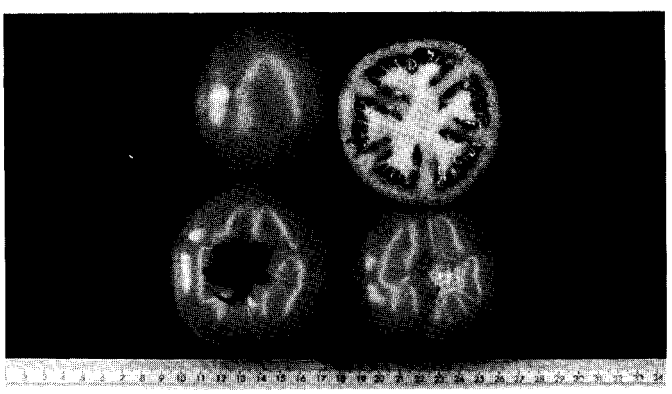

Fig. 1. 'Juliette' tomato fruit (scale is in centimeters).

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