'Juliette' Fresh-market Tomato

V.Q. Nguyen¹

New South Wales Agriculture, Horticultural Research and Advisory Station,
P. O. Box 581, Gosford, NSW 2250, Australia

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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 long 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 F₁ 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 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 20°C, which is similar to that of 'Red Centre' and 10 days longer than that of 'Flora Dade' (Nguyen et al., 1991). Therefore, F₁ 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 (≥80 mm 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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Sumeghy, J.B., D.O. Huett, W.B. McGlasson, E.E. Kavanagh, and V.Q. Nguyen. 1983. Evaluation of fresh market tomatoes of the determinate type irrigated by trickle and grown on raised beds covered with polyethylene mulch. Austral. J. Expt. Agr. Animal Husbandry 23:325-330.

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

Cultivar	Marketable yield (t·ha ⁻¹) ^y		Firmness (compression, mm)		Total soluble solids concn (°Brix)		Titratable acidity (ml 0.1 N-NaOH juice)	
	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

^aMean separation within columns by Duncan's multiple range test, $P \leq 0.05$. All experiments were replicated four times in a randomized block design.

^yTotal of eight harvests.

^xSmaller 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).

Cultivar	Fruit size distribution ^{a, y} (%)					
	Large		Medium		Small	
	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

^aMean separation within columns by Duncan's multiple range test, $P \leq 0.05$.

^yLarge ≥ 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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