

# 'Mountain Delight' Tomato; NC 8288 Tomato Breeding Line

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'Mountain Delight' is a mid-season, determinate, fresh-market tomato (*Lycopersicon esculentum* Mill.) hybrid. NC 8288 is an early maturing inbred line and is the pollen parent of 'Mountain Delight'. Both were developed at the Mountain Horticultural Crops Research and Extension Center, Fletcher, N.C.

## Origin

'Mountain Delight' is the F<sub>1</sub> hybrid resulting from the cross of 'Piedmont' (Gardner, 1985) x NC 8288. Both parents were developed in the North Carolina fresh-market tomato breeding program. 'Mountain Delight' was evaluated in trials as NC 84100 and in the 1987 Southern Tomato Exchange Program (STEP) as STEP 693. NC 8288 is an F<sub>1</sub> selection from the cross of 'Piedmont' x 'Florida 1B' (Augustine et al., 1981). NC 8288 was evaluated in the STEP trials in 1985, 1986, and 1987 as STEP 689.

## Description

'Mountain Delight'. Vine type of 'Mountain Delight' is determinate (*sp*). Mature plants of 'Mountain Delight' are smaller than those of 'Piedmont' and 'Mountain, Pride' and similar in size to 'Sunny'. Foliage is dark green, similar in character to 'Piedmont', and

provides good fruit coverage.

Fruit are deep oblate to globe in shape, similar to those of 'Mountain Pride' and 'Piedmont'. Nonripe fruit area uniform light green (u) and have a glossy finish. Fruit pedicels are jointed. External fruit color develops to a uniform bright red and is similar to 'Piedmont'. Internal color, structure, firmness, and flavor are similar (subjective ratings) to 'Piedmont' and 'Mountain Pride' (Gardner, 1982).

'Mountain Delight' produced total fruit yields similar to those of 'Mountain Pride', 'Piedmont', and other mid-season cultivars in replicated trials (Table 1). Yields of U.S. Combination Grade fruit (U.S. No. 1 + U.S. No. 2) of 'Mountain Delight' were equal to those of 'Mountain Pride', equal to or greater than those of 'Piedmont', and generally superior to those of 'Flora-Dade' and 'Sunny' (Table 1). Percentage of 'Mountain Delight' fruit in cull grade was similar to that of 'Piedmont' and 'Mountain Pride' and consistently lower than that of 'Flora-Dade' and 'Sunny' (data not shown). Average fruit weight of 'Mountain Delight' has generally exceeded that of 'Mountain Pride' and has been equal to or greater than that of 'Piedmont' (Table 1).

'Mountain Delight' has demonstrated good resistance to fruit cracking, similar in level to 'Piedmont' and 'Mountain Pride' and much superior to that of 'Flora-Dade' and 'Sunny' (Table 2). 'Mountain Delight' fruit had significantly lower percentages of rough blossom scar than those of 'Piedmont' in several trials and were similar to 'Mountain Pride' in percentages of this defect (Table 2).

'Mountain Delight' is mid-season in maturity. When harvested at the vine-ripe stage, it tends to be earlier than 'Piedmont', similar to 'Mountain Pride', and slightly later than 'Sunny'.

'Mountain Delight' is homozygous for the

*Ve* gene, which confers resistance to race 1 of *Verticillium dahliae* Kleb. (*verticillium* wilt), and the 1 and 1-2 genes, which confer resistance to races 1 and 2 of *Fusarium oxysporum* f. sp. *lycopersici* (Sacc.) Snyder and Hans. (*fusarium* wilt).

NC 8288. Vine type of NC 8288 is determinate (*sp* gene). Leaf margins curl adaxially, similar to those of 'Florida 1B'. NC 8288 is taller than 'Florida 1B' when staked and has heavier foliage cover.

Fruit are deep oblate in shape. Shoulder color on green fruit is uniform (*u*). Fruit pedicels are jointed. NC 8288 has generally produced fruit with a pinpoint blossom scar, but has the *n* gene (derived from 'Florida 1B'), which causes nipped fruit blossom end. In some environments, particularly winter greenhouse conditions, blossom ends on some fruit of NC 8288 may produce prominent nipples.

NC 8288 produced total fruit yields similar to those of 'Florida 1B' in replicated trials (data not shown). Graded yields of NC 8288 were superior to those of 'Florida 1B' because of less fruit cracking and smoother blossom scar of NC 8288.

Fruit size of NC 8288 is similar to that of 'Florida 1B', with the majority of fruit exceeding a diameter of 7.5 cm. Maturity of NC 8288 is slightly later than 'Florida 1B'.

NC 8288 has the *Ve*, *I*, and *I-2* genes for resistance to *verticillium* and *fusarium* wilts.

## Uses

'Mountain Delight' is adapted to vine-ripe production for ground and stake culture. It has performed well in grower trials throughout North Carolina and in experiment station and grower trials in several other eastern states.

NC 8288, in addition to its use as the parent of 'Mountain Delight', is a useful breeding line for disease resistance, fruit quality, and early maturity. It has performed well in the STEP trials and in other trials throughout the eastern United States.

## Availability

'Mountain Delight' was released on an exclusive basis to Petoseed Co. Small seed samples of 'Mountain Delight' and NC 8288 are available from R. G. G., Mountain Horticultural Crops Research and Extension Center, Fletcher, NC 28732-9216.

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Table 1. Yield and fruit weight of 'Mountain Delight' and other tomato cultivars in vine-ripe harvest trials at Fletcher, N.C.

Cultivar	Total yield (t·ha <sup>-1</sup> )				U.S. No. 1 + U.S. No. 2 yield (t·ha <sup>-1</sup> )				Fruit wt (g/fruit)			
	1984	1985	1986a <sup>1</sup>	1986b <sup>2</sup>	1984	1985	1986a	1986b	1984	1985	1986a	1986b
Flora-Dade	129	107	87	80	59	39	30	30	204	200	209	222
Sunny	125	110	101	69	68	45	42	21	232	227	250	254
Mountain Pride	119	91	93	67	78	45	49	34	245	227	277	254
Piedmont	114	99	95	74	61	43	38	29	241	241	277	286
Mountain Delight	123	95	100	70	80	48	56	33	254	254	300	281
LSD (0.05)	11	NS	14	NS	12	NS	14	NS	18	18	23	23

<sup>1</sup>Spring planting.

<sup>2</sup>Summer planting.

Table 2. Fruit defects of 'Mountain Delight' and other tomato cultivars in vine-ripe harvest trials at Fletcher, N.C.

Cultivar	Fruit cracking (%)				Rough blossom scar (%)			
	1984	1985	1986a <sup>z</sup>	1986b <sup>y</sup>	1984	1985	1986a	1986b
Flora-Dade	3.7	25.3	45.8	24.1	24.9	22.5	12.3	25.3
Sunny	5.3	27.0	40.7	37.2	21.6	17.7	22.9	30.6
Mountain Pride	0.2	11.8	23.2	9.6	15.8	15.8	14.0	16.9
Piedmont	2.5	15.6	20.0	4.3	28.0	26.4	24.4	29.6
Mountain Delight	3.1	9.2	17.6	11.4	18.9	18.8	15.9	20.4
LSD (0.05)	3.8	7.9	12.1	11.6	6.8	8.4	5.8	8.9

<sup>z</sup>Spring planting.  
<sup>y</sup>Summer planting.

#### Literature Cited

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