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Table 1. Comparison of yields and fruit weight of 'Carolina Gold' tomato hybrid with those of its parental lines, NC 1Y and NC 2Y, and of 'Mountain Gold' PVP in staked, vine-ripe harvest trials at Fletcher, N.C.^z

Cultivar or line	Yield (Mg ha ⁻¹)			Wt/fruit (g)
	Early season ^y	Total season		
		Nongraded	U.S. combination	
			grade ^x	
Carolina Gold	27	110	62	339
Mountain Gold PVP	19	94	49	316
NC 1Y	28	106	58	302
NC 2Y	15	88	35	372
LSD _{0.05}	5	10	9	20

^zBased on seven replicated trials conducted over a 4-year period (1993–96).

^yFirst 2 weeks of harvest.

^xU.S. No. 1 + U.S. No. 2 fruit.

1 of *Verticillium dahliae* Kleb., the incitant of verticillium wilt. Fruit are highly resistant to the physiological fruit-ripening disorder graywall. Fruit are also resistant to radial and concentric cracking and cuticle cracking (weather check).

NC 2Y. Plant habit is determinate (*sp*) with moderate foliage cover. NC 2Y produces very large fruit (Table 1) that are round to slightly ovate. Immature fruit are uniform light green (*u*). Fruit ripen to a bright yellowish-orange exterior and interior color and have a firm texture. Fruit pedicels are jointed.

NC 2Y is resistant to fusarium wilt (*I* and *I-2*) and verticillium wilt (*Ve*), and fruit are highly resistant to graywall. Fruit are moderately susceptible to radial and cuticle cracking, resulting in a lower percentage of fruit in U.S. combination grade (U.S. No. 1 + U.S. No. 2) than other orange tomatoes tested. Total and U.S. combination grade fruit yields averaged lower than other orange tomatoes evaluated. Early yield was lower than that of 'Carolina Gold' and NC 1Y but not significantly lower than that of 'Mountain Gold' when averaged

over seven trials (Table 1).

'Carolina Gold'. Vine type of 'Carolina Gold' is similar to that of 'Mountain Gold'. The plant is determinate (*sp*) with good foliage cover for fruit protection and is well adapted to the short-stake, string-weave system of culture. Fruit of 'Carolina Gold' are deep oblate to flattened globular and are well-filled and symmetrical. The blossom scar is generally small and smooth. Immature fruit are uniform glossy green (*u*). Fruit ripen to a uniform bright yellowish-orange exterior and interior color. Ripe fruit are firm with good shelf-life and are comparable in flavor to those of 'Mountain Gold' (subjective ratings by author). Fruit pedicels are jointed. 'Carolina Gold' averaged higher than 'Mountain Gold' in early, total, and U.S. combination grade (U.S. No. 1 + U.S. No. 2) yields in seven replicated trials conducted over a 4-year period. Average fruit weight was equal to or greater than that of 'Mountain Gold' in all trials (Table 1).

'Carolina Gold' is resistant to fusarium wilt (*I* and *I-2*) and verticillium wilt (*Ve*), as well as fruit cracking and weather check, and

is highly resistant to graywall. No graywall was observed in fruit of 'Carolina Gold' or either of its parents in trials at Fletcher, N.C., in 1994 and 1996, whereas the incidence of graywall was 25% to 44% in 'Mountain Gold'.

Use

'Carolina Gold' will provide growers with improvements in earliness, fruit quality, and yield over 'Mountain Gold'. Although orange tomatoes are produced on a limited basis as a specialty item, their market share is increasing, and growers usually receive a premium for orange tomatoes.

NC 1Y and NC 2Y are not intended for direct use as cultivars. Their fruit quality and disease resistance, in combination with the *t* gene, should make them useful to other breeders in further breeding of orange-fruited cultivars.

Availability

'Carolina Gold' was released on an exclusive basis for commercial seed production and sales to Novartis Seeds, Inc. Applications for Plant Variety Protection Certificates have been filed for NC 1Y and NC 2Y. Small samples of 'Carolina Gold', NC 1Y, and NC 2Y for trial and breeding purposes are available from R.G. Gardner, Mountain Horticultural Crops Research and Extension Center, Fletcher, N.C. 28732-9244.

Literature Cited

- Gardner, R.G. 1993. 'Mountain Gold' tomato. *HortScience* 28:348–349.
Mutschler, M.A., S.D. Tanksley, and C.M. Rick. 1987 linkage maps of the tomato (*Lycopersicon esculentum*). *Rpt. Tomato Genet. Coop.* 37:5–34.