

**North Carolina Agricultural Research Service
North Carolina State University
Raleigh, North Carolina**

Notice of Release of 'Mountain Merit' Hybrid Tomato Cultivar

'Mountain Merit', the F₁ hybrid of NC1CELBR x NC 123S (Figure 1.), resulted from a tomato breeding effort to develop a hybrid tomato with combined late blight, fusarium wilt, verticillium wilt, root knot nematode, and tomato spotted wilt virus resistances adapted to vine-ripe production in North Carolina (NC). The resultant hybrid, NC 0694, first crossed in the fall of 2005 was tested in observational trials in 2006 and advanced to the replicated trials where it was tested in 2007-2009.

In five replicated trials conducted over a three-year period, 'Mountain Merit' produced better or at par with 'Mountain Fresh' (Gardner 1999) in yield of U.S. Combination grade (U.S. no. 1 + U.S. no.2 fruit) and exceeded 'Mountain Glory' and 'Fletcher' in yield of U.S. Combination grade fruit. 'Mountain Merit' was as early as 'Mountain Glory' and 'Mountain Fresh' and was comparable to 'Fletcher' as indicated by early yield (first three harvests). Average fruit weight of 'Mountain Merit' (285 gram) was less than that for 'Mountain Fresh' (310 gram) but comparable to 'Mountain Glory' (282 gram) and greater than 'Fletcher' (271 gram).


Fruit of 'Mountain Merit' develop deep red color and are very firm in the fully ripened stage. Immature fruits have a glossy, uniform green color (*u* gene). Fruit pedicels are jointed. The fruit are deep oblate to flattened globe in shape with generally smooth blossom end scars and have good resistance to fruit cracking and weather check. 'Mountain Merit' has performed well in numerous observational trials in research station and grower fields throughout the mountains and piedmont of NC. 'Mountain Merit' has a vigorous determinate plant (sp) similar in height to that of 'Mountain Fresh' when staked. Foliage provides adequate, but not dense, cover for fruit protection. 'Mountain Merit' has resistance (*Ve* gene) to *Verticillium dahliae* Kleb. and resistance (*I*, *I-2* and *I-3* genes) to races 1, 2 and 3 of *Fusarium oxysporum* f.sp. *lycopersici* (Sacc.) Snyd. and Hans. It has the *Ph-2* and *Ph-3* genes in heterozygous condition conferring resistance to late blight. In an organic trial at Waynesville, NC in the summer of 2009, 'Mountain Merit' did not develop late blight when there was an extremely high level of inoculum pressure of *Phytophthora infestans*. Trials in late blight resistance breeding plots in 2006, 2007, and 2009 also indicated a high level of resistance to late blight.

Breeder seed of 'Mountain Merit' hybrid tomato and each parent is available by contacting Dr. Dilip Panthee, Mountain Horticultural Crops Research and Extension Center, 455 Research Drive, Mills River, NC 28759 or by telephone: 828.684.8590; fax: 828.684.8715; email address: dilip_panthee@ncsu.edu. A fully executed tomato seed transfer agreement with NC State University's Office of Technology Transfer will be required to acquire seed of 'Mountain Merit' or its parent.

An exclusive production and marketing agreement for 'Mountain Merit' has been awarded to Bejo Zaden BV, The Netherlands.



Director, North Carolina Agricultural Research Service



Date

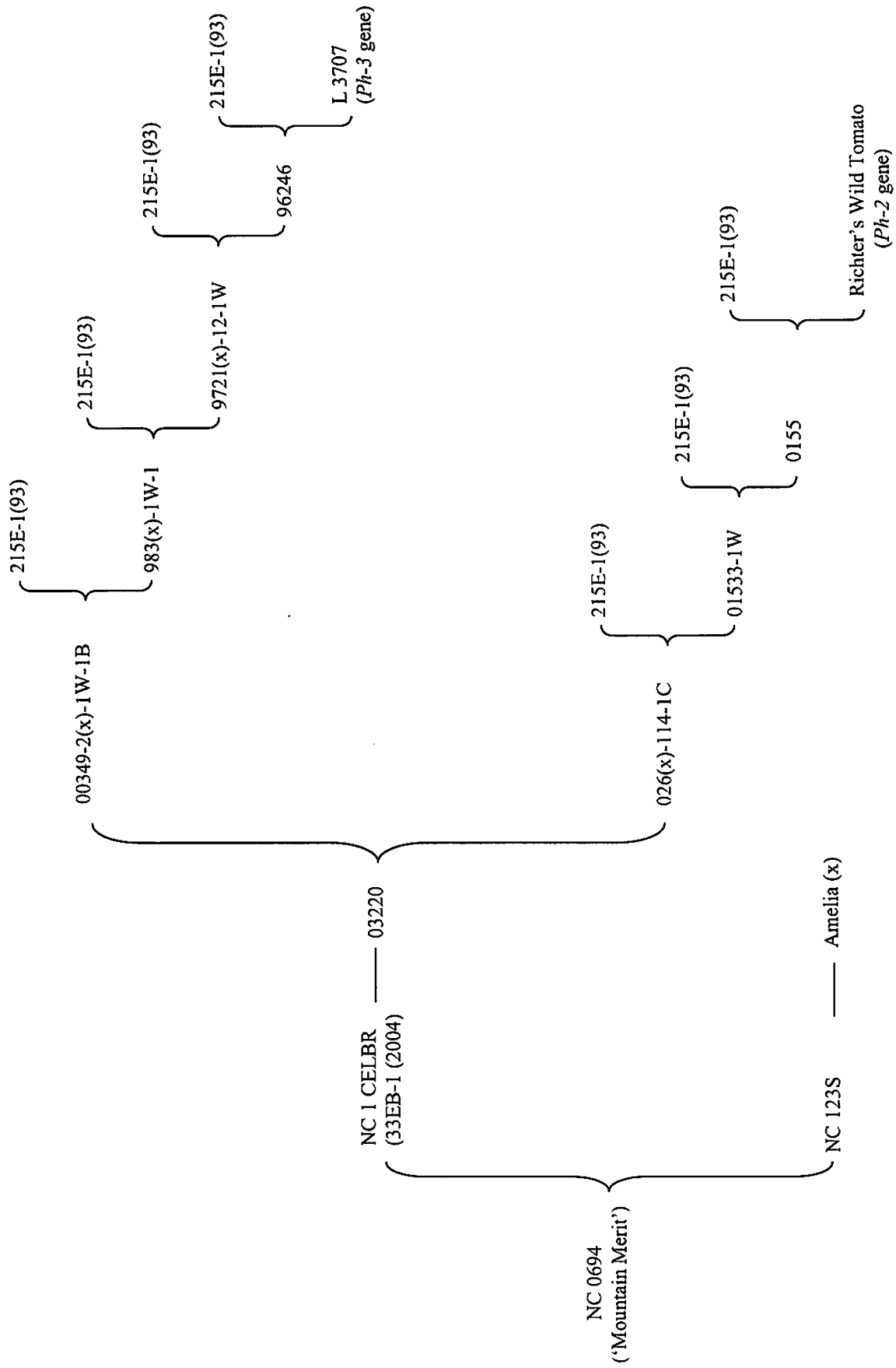


Figure 1. Pedigree of 'Mountain Merit' hybrid tomato with combined tomato spotted wilt virus and late blight resistance.