

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

Notice of Release of 'Mountain Vineyard' Hybrid Grape Tomato

North Carolina Agricultural Research Service announces the release of 'Mountain Vineyard' hybrid grape tomato. 'Mountain Vineyard' (tested as NC 10235), is the F₁ hybrid resulting from the cross of NC 07310(x)-14-1-9 (simultaneous release as NC 4Grape breeding line) x NC 06160-2A(x)-2-19-1 (simultaneous release as NC 5Grape breeding line) (see figure 1). It is the culmination of a tomato breeding effort initiated in 2003 to develop a superior grape hybrid tomato comparable to the highly successful 'Smarty' hybrid in horticultural traits with improved fruit color based on the crimson gene combined with fusarium wilt race 3 and tomato spotted wilt virus resistances. 'Mountain Vineyard', first crossed in the fall of 2009, was tested in replicated and observational trials at the Mountain Horticultural Crops Research Station (MHCRS), Mills River, NC, in 2010 through 2012 and in grower plantings in western North Carolina and the coastal area of South Carolina. It has performed well in these trials.

Performance of 'Mountain Vineyard' was compared with 'Smarty', a superior grape hybrid released from our program and commercially grown in different parts of the country. When averaged over four field trials with three replications each at MHCRS conducted during the summer seasons of 2010-2012, 'Mountain Vineyard' was lower than 'Smarty' for total and marketable yields and percent soluble solids. Percent marketable yield of 'Mountain Vineyard' was better than 'Smarty', (94.4% vs. 91.7%, respectively). Fruit weight was similar for the two varieties (10 g for 'Mountain Vineyard' vs. 9.8 g for 'Smarty'). Total solids averaged 6.8% for 'Mountain Vineyard' vs. 7.5% for 'Smarty'.

'Mountain Vineyard' is the first indeterminate grape tomato hybrid with the crimson (*og^c*) gene for improved red fruit color and increased lycopene content. It has short internodes conferred by the brachytic (*br*) gene. Fruit of 'Mountain Vineyard' are firm in the fully ripened stage. Immature fruits have a glossy finish with dark green shoulders. Fruit pedicels are jointed (*j2* gene). The fruit are long ovate in shape and have good resistance to fruit cracking and bursting. Flavor and fruit texture of 'Mountain Vineyard' have been rated excellent by growers and consumers in subjective taste evaluations of 'Mountain Vineyard' grown in research station plots.

Despite the somewhat lower yields and lower percent soluble solids than 'Smarty', 'Mountain Vineyard' was consistently rated as highly promising in research station and grower trials because of its combination of desirable horticultural traits and disease resistances. In grower trials in coastal SC, 'Mountain Vineyard' was free of TSWV symptoms, whereas 'Smarty' was severely affected. Presence of the *Sw-5* gene for TSWV resistance and the *I-3* gene for fusarium wilt race 3 resistance were verified by molecular markers tightly linked to the resistance genes. In a seedling inoculation trial in a growth chamber, 'Mountain Vineyard' was highly resistant to fusarium wilt race 3.

Breeder seed of 'Mountain Vineyard' and each parent are available by contacting Dr. Dilip Panthee, Mountain Horticultural Crops Research and Extension Center, 455 Research Drive, Mills River, NC 28759 or by telephone: 828.654.8590; fax 828.684.8715; email: dilip_panthee@ncsu.edu. To acquire seed of the parents of 'Mountain Vineyard' or the hybrid for non-exclusive, non-transferable research purposes, a fully executed tomato seed transfer agreement (parents) or plant trial agreement (hybrid) is required with NC State University's

Office of Technology Transfer. NCSU will invite proposals from interested tomato seed companies and select one company to enter into an exclusive production and marketing agreement for 'Mountain Vineyard'.

David W. Monks
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Date

Figure 1. Pedigree of 'Mountain Vineyard' Hybrid Grape Tomato

