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

Notice of Naming and Release of 'Plum Crimson' Hybrid Tomato

The North Carolina Agricultural Research Service announces the release of a new fresh- market F_1 hybrid tomato cultivar, 'Plum Crimson'.

'Plum Crimson' resulted from a breeding program to develop an improved fresh-market plum (Roma type) tomato cultivar with combined resistance to early blight and fusarium wilt race 3 adapted to North Carolina growing conditions. 'Plum Crimson', tested as NC 98128, is the F_1 hybrid of NC EBR-7 x NC EBR-8. NC EBR-7, the female parent of 'Plum Crimson, has the jointless pedicel gene (*j-2*) and is segregating for the *ms*-10 gene for male sterility linked to the green stem seedling marker gene *aa*, which allows for determination of male sterile plants in the seedling stage. NC EBR-7 was developed by backcross breeding using NC 630-1 (95), an inbred line derived from the NCSU released hybrid 'Plum Dandy'. NC EBR-8 was developed from a cross of NC EBR-6, one of the parents of 'Plum Dandy', x Fla. 7547, a large fruited line with the *I-3* gene for fusarium wilt race 3 resistance. NC EBR-7 and -8 both have the crimson gene (*og*) for increased lycopene content.

'Plum Crimson' has a vigorous determinate plant (*sp* gene) with medium green foliage. Plant vigor is intermediate to that of 'Plum Dandy' and 'Peto 882' and provides good foliage cover for fruit protection. The plant habit is well adapted to the short-stake, string-weave system of culture. For optimum fruit size and desired density of foliage cover, plants should be pruned, leaving two or three suckers below the first flower cluster.

Non-ripe fruit of 'Plum Crimson' have a uniform, glossy, light green finish (*u* gene). Fruit pedicels are jointed, and the calyx separates easily from the fruit during harvest. Fruit ripen to a bright red exterior color and are moderately firm with good texture and flavor. Interior fruit color of flesh and gel is uniformly bright red as a result of the crimson gene being present in both parents. 'Plum Crimson' is well adapted to vine-ripe production and has shown excellent color development and good quality when harvested mature green and ripened. Fruit shape of 'Plum Crimson' is fairly long with a slight taper from the shoulder to the blossom end of the fruit. Blossom ends are very smooth and free of nipples. Fruit size of 'Plum Crimson' (4.3 oz.) was superior to that of 'Plum Dandy' (3.6 oz.), 'Peto 882' (3.7 oz.), and 'Puebla' (3.9 oz.) over four years of replicated trials at Fletcher, NC.

'Plum Crimson' produced marketable grade yields much higher than those of 'Peto 882' and 'Puebla' over four years of replicated trials at Fletcher, NC, and was equivalent in marketable yield to 'Plum Dandy'. Percent of fruit in marketable grade for 'Plum Crimson' (92%) was superior to that of 'Peto 882' (76%) and 'Puebla' (54%) and equivalent to that of 'Plum Dandy' (86%).

'Plum Crimson' has the *Ve* gene for resistance to verticillium wilt and has the *I*, *I-2*, and *I-3* genes, conferring resistance to races 1, 2, and 3 of fusarium wilt. 'Plum Crimson' has moderate resistance to early blight similar to that of 'Plum Dandy'. Fruit are highly resistant to cracking and weather check.

'Plum Crimson' has performed well in large-scale grower trials in NC and coastal SC and in several university trials in eastern and midwestern states, indicating wide adaptability. It was observed to have moderate high temperature fruit set ability in fall trials in NC, SC, and FL.

'Plum Crimson' was released to Harris Moran Seed Co. for exclusive production and sale of seed. Seed should be available for sale beginning in 2003. Breeder seed of the parental lines will be maintained by the North Carolina Agricultural Research Service. Small samples of 'Plum Crimson' and its parental lines for trial and breeding purposes are available from R. G. Gardner, Mountain Horticultural Crops Research and Extension Center, 455 Research Drive, Fletcher, NC 28732-7723. Email: <Randy_Gardner@ncsu.edu>

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Date