

NORTH CAROLINA AGRICULTURAL RESEARCH SERVICE  
 NORTH CAROLINA STATE UNIVERSITY  
 RALEIGH, NORTH CAROLINA

NOTICE OF RELEASE OF NC EBR-4 TOMATO BREEDING LINE

The North Carolina Agricultural Research Service announces the release of a new fresh-market tomato breeding line, NC EBR-4.

NC EBR-4, an inbred tomato line in the F<sub>7</sub> generation, was developed in the North Carolina early blight resistance breeding program. It has a high level of resistance to the stem lesion (collar rot) phase of early blight and moderate resistance to the foliar blight phase of early blight. The sources of early blight resistance in NC EBR-4 are C1943 and NC EBR-1 (Fig. 1). C1943 provided a high level of resistance to the stem lesion phase of early blight and moderate foliar blight resistance. NC EBR-1, derived from *L. hirsutum* PI 126445, provided a source of moderate resistance to foliar blight. Selection for early blight resistance was done in replicated field plots using a reduced fungicide spray program. Stem lesion resistance was verified in greenhouse inoculation trials.

NC EBR-4 has a determinate (sp gene) growth habit. Foliage cover is heavy, providing for good fruit protection. Fruit are deep oblate in shape, are symmetrical, and have a smooth blossom scar. Non-ripe fruit have a uniform light green color (u gene). Fruit pedicels are jointed.

NC EBR-4 was lower in non-graded yield than several other trial entries in 1991. However, its percent U.S. Combination Grade was higher than standard named cultivars resulting in its U.S. Combination Grade yields being equivalent to or higher than standard named cultivars. NC EBR-4 is later in maturity than 'Flora-Dade' and is similar in fruit size to 'Flora-Dade'.

In addition to early blight resistance, NC EBR-4 has resistance (I gene) to race 1 of *Fusarium oxysporum* f sp *lycopersici* (fusarium wilt) and is resistant (Ve gene) to *Verticillium dahliae* (verticillium wilt). Fruit are highly resistant to radial and concentric fruit cracking and to weather check.

NC EBR-4 is being released primarily as a parent line for use in production of the F<sub>1</sub> hybrid 'Mountain Supreme', which was released on an exclusive basis for seed production and sale to Asgrow Seed Co. Breeder seed will be maintained by the North Carolina Agricultural Research Service. Small samples for trial and breeding purposes are available from R. G. Gardner, Mountain Horticultural Crops Research and Extension Center, Fletcher, NC 28732-9216. Application is being made for a Plant Variety Protection Certificate. Use of NC EBR-4 as a parental line in production of F<sub>1</sub> hybrid seed for sale will require approval by and negotiated royalty payments to NCARS.

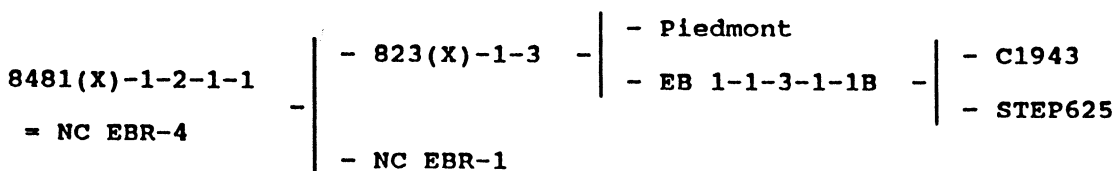


Fig. 1. Pedigree of NC EBR-4 tomato breeding line.

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 Research Service, Raleigh, NC

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 Date