

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

Notice of Release of NC 25P Plum Tomato Breeding Line

The North Carolina Agricultural Research Service announces the release of a new fresh-market plum tomato breeding line, NC 25P.

NC 25P is a fresh-market plum (Roma type) tomato line with the *Ph-3* gene for late blight resistance derived from L 3707, a wild tomato selection of *Lycopersicon pimpinellifolium* (Fig. 1). Following crosses to large-fruited, early blight resistant lines, crosses were made to the plum tomato lines NC 630 and a sister line of NC EBR-7. Field screening was conducted for early blight resistance, and a combination of field and growth chamber screening was used to test for late blight resistance. In addition to early blight and late blight resistance, NC 25P has *Verticillium* wilt resistance (*Ve* gene) and resistance to races 1 and 2 of *Fusarium* wilt (*I* and *I-2* genes). In repeated field observations, NC 25P has shown moderate resistance to defoliation by bacterial spot.

The plant growth habit of NC 25P is determinate with heavy foliage cover. Fruit are intermediate in length with 2-3 (mostly 3) locules. It has the crimson gene (*og^r*) for increased lycopene. Fruit pedicels are jointless (*j2* gene), and immature fruit are uniform, light green (*u* gene). Ripe fruit are medium in firmness and develop bright red exterior and interior color. Fruit are highly resistant to gray wall and fruit cracking.

In a replicated vine-ripe harvest trial in 2006, where tomato spotted wilt virus (TSWV) was present, NC 25P yielded as well as 'Plum Crimson' but was significantly lower in marketable yield than the TSWV resistant entries 'Plum Regal' and NC 30 P. Average fruit weight of NC 25P (4 oz./fruit) did not differ from other entries in the 2006 vine-ripe trial. Percent marketable grade for NC 25P was reduced by TSWV in the 2006 vine-ripe trial but was equivalent to other entries in a mature-green harvest trial. NC 25P is late in maturity.

NC 25P is useful as a parent in developing F₁ hybrids resistant to late blight. NC 25P is being released in conjunction with release of the F₁ hybrid plum tomato 'Plum Regal' (NC 30P x NC 25P).

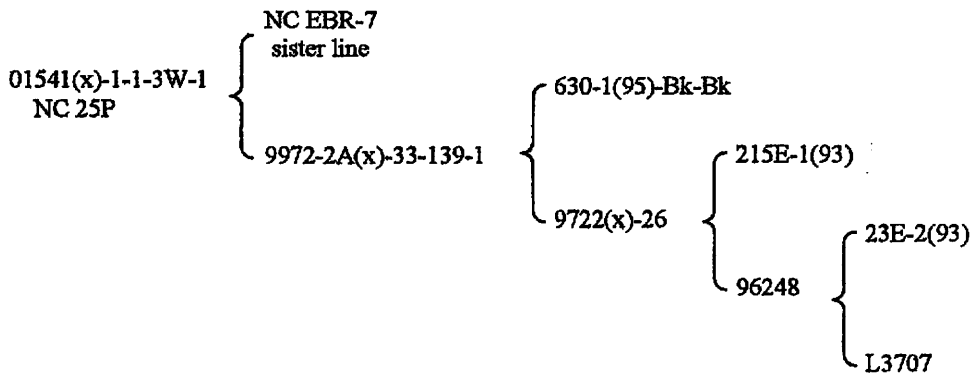



Fig. 1. Pedigree of NC 25P fresh-market plum tomato line.

Breeder seed will be maintained by the North Carolina Agricultural Research Service. A signed tomato seed transfer agreement, which can be downloaded at the website listed below, is required for recipients of seed of NC 25P. Additional information and pictures of the line are available at the following web site:
<http://www.ces.ncsu.edu/fletcher/programs/tomato/>.



Director, North Carolina Agricultural
Research Service, Raleigh, NC

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Date