

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

**Notice of Release of NC EBR-7 Tomato Breeding Line**

NC EBR-7 is a tomato breeding line (see pedigree in Figure 1) developed for use as a parent in producing F<sub>1</sub> hybrid plum (Roma type) fresh market tomato cultivars. Breeding was based on incorporation of the recessive crimson gene (*og*) for improved fruit color and increased lycopene content into the early blight resistant background of two previous releases from the North Carolina State University tomato breeding program, NC EBR-5 and NC EBR-6, which are the parents of the F<sub>1</sub> hybrid 'Plum Dandy.'

Lycopene, the red pigment in tomato, is an antioxidant which has been shown to improve human health by helping prevent certain types of cancer and heart disease. NC EBR-7 has the *ms-10* gene linked to the green stem seedling marker gene (*aa*), which makes it useful as a female in producing F<sub>1</sub> hybrid seed. NC EBR-7 has a highly elongate fruit type, which provides the fruit shape desired in the plum tomato market when crossed with another parent line having shorter fruit type. In addition, NC EBR-7 is highly resistant to fruit cracking and weather check, both of which can be severe in humid areas and lead to reductions in marketable fruit yield. NC EBR-7 was originally made available in 2002 as a parent in the F<sub>1</sub> hybrid 'Plum Crimson.'

NC EBR-7 plants are vigorous and determinate in nature. Long leaves consist of long, narrow leaflets with some twisting and distortion. Foliage is moderately heavy and is similar to that of 'Plum Dandy' and other lines related to the early blight resistant USDA line 71B-2. Fruit of NC EBR-7 have two or three locules and are elongated (L/D of 2:1), with jointless pedicels (*j2*). Average fruit weight is 140 g, and fruit are fairly cylindrical in shape and tapered at both stem and blossom ends. Blossom ends are smooth with no nipples. Fruit resist cracking and weather check and exhibit a deep red interior color (*og* gene). Immature fruit are uniformly green (*u*) and glossy.

NC EBR-7 is resistant to fusarium wilt race 1 (*I* gene) and verticillium wilt (*Ve* gene); it is moderately resistant to early blight.

Photographs of NC EBR-7 may be viewed at the NC State University Fresh Market Tomato Breeding Program website at: [www.ces.ncsu.edu/fletcher/programs/tomato/](http://www.ces.ncsu.edu/fletcher/programs/tomato/). Seed of NC EBR-7 have been transferred to other breeders through Tomato Seed Transfer Agreements for experimental breeding and testing of potential new hybrids using NC EBR-7 as a parent.

Breeders seed of NC EBR-7 are available by contacting Dr. Randy Gardner or Dr. Dilip Panthee, Mountain Horticultural Crops Research and Extension Center, 455 Research Drive, Mills River, NC 28759 or by telephone: 828.684.3562; fax: 828.684.8715; email addresses: [randy\\_gardner@ncsu.edu](mailto:randy_gardner@ncsu.edu) or [dilip\\_panthee@ncsu.edu](mailto: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 NC EBR-7.

  
Director, North Carolina Agricultural Research Service

10-16-09  
Date

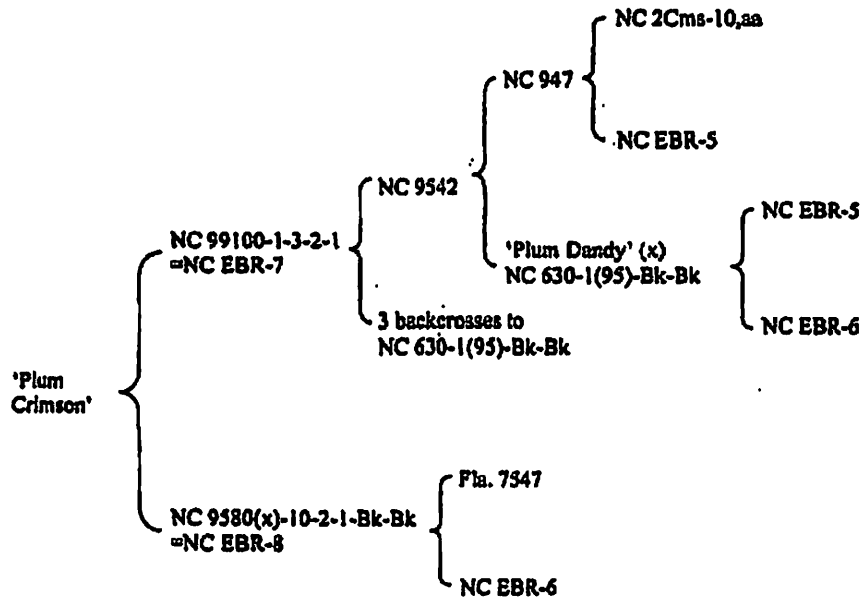


Fig. 1. Pedigrees of 'Plum Crimson' F<sub>1</sub> hybrid tomato and its parent lines, NC EBR-7 and NC EBR-8.