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

NOTICE OF RELEASE OF NC EBR-3 TOMATO BREEDING LINE

The North Carolina Agricultural Research Service announces the release of a new fresh-market tomato breeding line, NC EBR-3.

NC EBR-3, an inbred line in the F_6 generation, was developed in the North Carolina early blight resistance breeding program (Fig.1). It has a high level of resistance to the stem lesion (collar rot) phase of early blight and moderate foliar blight resistance. Its pedigree includes two early blight resistant lines, NC EBR-1 and NC EBR-2, released from the North Carolina fresh market tomato breeding program. NC EBR-1 has moderate foliar resistance derived from L. hirsutum PI 126445, and NC EBR-2 has stem and foliar resistance derived from C.1943. Early blight resistance in NC EBR-3 was selected by growing lines in replicated field plots with a reduced fungicide schedule and rating percent defoliation by early blight. Stem lesion resistance was verified by spray inoculating plants with conidia in a dew chamber in the greenhouse.

NC EBR-3 has a determinate (sp gene) growth habit. Non-ripe fruit are uniform light green (u gene). Fruit pedicels are jointless (j-2 gene). Fruit are deep oblate to flattened globe in shape, are symmetrical and have a small blossom scar.

Total yield of NC EBR-3 was lower than 'Flora-Dade' in an early season trial in 1991 but did not differ from several other lines in trial. In a late season trial in 1991, yield of NC EBR-3 did not differ from other entries. Percent U.S. Combination Grade fruit for NC EBR-3 did not differ from standard named cultivars in early season trial in 1991. In the late season trial, NC EBR-3's percentage was higher than the standard named cultivars. NC EBR-3 is very similar in season of maturity and fruit size to 'Flora-Dade'.

In addition to early blight resistance, NC EBR-3 has resistance (I and I-2 genes) to races 1 and 2 of Fusarium oxysporum f sp lycopersici (fusarium wilt) and resistance (Ve gene) to verticillium wilt. Fruit are highly resistant to radial and concentric cracking and to weather check.

NC EBR-3 is being released primarily as a parent line for use in production of the F_1 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-3 as a parental line in production of F_1 hybrid seed for sale will require approval by and negotiated royalty payments to NCARS.

8682(X)-3-1-1 = NC EBR-3 = (84351-1 = (NC EBR-2 / NC EBR-1)) / (8468(X)-1 = (823(X)-1-3 = (Piedmont / EB1-1-3-1-1B-(C1943 / STEP 625)) / FLA 7060))

Fig. 1. Pedigree of NC EBR-3 tomato breeding line.

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Date