REGISTRATION OF PARENTAL LINES

REGISTRATION OF NC201 PARENTAL LINE
OF MAIZE

NC201 (Reg. no. PL-153, PI 543008) is a yellow dent inbred of corn (Zea mays L.) developed by the North Carolina Agricultural Research Service, North Carolina State University, Raleigh, and released 22 Jan. 1990. This line descended from an open-pollinated variety, Indian Chief.

NC201 was developed from the IR10 population (Reg. no. GP-74) (2) as a result of a series of selection experiments for high N use efficiency. This line resulted from selection among parents of reciprocal full-sib crosses as suggested by Hallauer (1), which was initiated with 220 S<sub>1</sub> × S<sub>1</sub> hybrids between IR10 and JR10. The selection criteria were average N-use efficiency (weight of grain produced per unit of fertilizer N supplied) and two component traits, N uptake efficiency and N utilization efficiency. Line NC201 was one of the parents of the hybrid combination designated 202-2 (3). NC201 has been advanced to the S<sub>8</sub> generation by single-seed descent.

NC201 is highly prolific. Plants are 198 cm tall with ear height of 75 cm. It has 18 to 20 tassel branches with yellow anthers and green glumes; it is AES1100 in maturity. The line has not been rigorously evaluated for disease susceptibility, but is known to be somewhat susceptible to corn rust incited by Puccinia spp. Husk coverage and seed quality of the line is satisfactory.

NC201 × Mo17 was grown at 34 000 plants ha<sup>-1</sup> for 4 yr at three locations in the coastal plains of North Carolina with two levels of N fertilizer (56 and 224 kg ha<sup>-1</sup>). It produced an average of 1.54 ears plant<sup>-1</sup>, and 6.9 Mg ha<sup>-1</sup> grain with 5.6% lodged plants. At this low planting density × Mo17 out-yielded Pioneer brand hybrid 3320 by 17% at low N and 22% at high N. Limited observations at high plant densities (≈72 000 plants ha<sup>-1</sup>) indicated second ears were produced, and yield was similar to that of Pioneer brand 3320 (lodging was not assessed). NC201 × B73 was included in the yield test for 2 yr and found to be comparable to NC201 × Mo17 in number of ears per plant, but averaged 12.5% less in yield and had few second ears; disease problems have not been observed for either of the hybrid combinations tested.

Seeds are available to seedsmen and researchers in 50-kernel quantities from the Department of Genetics, Box 7614, Raleigh, NC 27695.

R.H. Moll,* E. J. Kamprath, and W. A. Jackson (4)

References and Notes
