of selfing was probably low. Concurrent with selection for low internal CO₂ concentration, visual selection of field-grown roots was used to eliminate sprangled or colored roots. Internal CO₂ concentrations of F1007 were approximately 40% of those observed in the commercial hybrids ‘KW 1132’ and ‘Beta 1230’.

F1008 (GP-121) is a multigerm, green hypocotyl line selected from the same base population and in the same manner as F1007. The maternal parents of the selections used in the pair-cross that resulted in F1008 were PI 169016, from Turkey, and PI 181716, from Lebanon. Internal CO₂ concentrations of F1008 were usually slightly higher than those of F1007 but still only about 50% of that observed in KW 1132 and Beta 1230.

Both lines have been evaluated in replicated field trials for 2 yr at Fargo, ND. Root yield of F1008 has been about equal to adapted commercial hybrids; however, the fresh weight of the check hybrids was slightly lower than the commercial checks for sucrose and purity percent. These lines are intended for use as pollinators for experimental hybrids, as parents in genetic studies, and as genetic sources for the development of parental lines with reduced sucrose loss due to respiration. Low storage-respiration rate is intended to complement other methods of reducing storage losses such as reduced root injury and pile ventilation.

Breeder seed will be maintained by USDA-ARS and provided in quantities sufficient for reproduction upon written request to Sugarbeet Research, USDA-ARS, Agronomy Department, North Dakota State University, Fargo, ND 58105.

L. G. CAMPBELL,* AND D. F. COLE (2)

References and Notes


2. L.G. Campbell, USDA-ARS, Fargo, ND 58105; and D.F. Cole, USDA-ARS, Beltsville, MD 20705 (formerly, USDA-ARS, Fargo, ND). Joint contribution of USDA-ARS and North Dakota Agric. Exp. Stn. as Journal Article no. 1595. Registration by CSSA.*Corresponding author. Accepted 30 July 1987.


REGISTRATION OF THREE ROOT KNOT NEMATODE RESISTANT BURLERY TOBACCO GERMPLASM LINES

Three burley tobacco (Nicotiana tabacum L.) germplasm lines (Reg. no. GP-23-GP-25) (PI 511339-511341) resistant to race 1 of the root knot nematode [Meloidogyne incognita (Kofoid & White) Chitwood] were developed by Dr. W. J. Sasser, North Carolina State University. The performance of each line is similar to its respective recurrent parent on soil free of the root knot nematode. Leaf size, plant height, maturity, and yield. The lines were released for the development of cultivars resistant to this pest.

Small amounts of breeder seed are available by request to the Department of Agronomy, 100 Hanes Bldg. N., University of Kentucky, Lexington, KY 40506.

M. T. NIELSEN

REFERENCES


REGISTRATION OF TOBACCO

Two tobacco (Nicotiana tabacum L.) hybrids, Burley 1 and LI Burley 21, and LI Burley 21 and GP-27 (PI 511343), were developed at the Agronomic Experiment Station and are genetically stable lines with high alkaloid content. They were derived from segregating generations of the germplasm line LA Burley 1 with an average alkaloid content of 3.5% dry wt. Burley 1 and 21 is a backcross-derived line with an average alkaloid content of 2.0-5.0 g kg⁻¹ dry wt. In the intermediate lines, HI Burley 21 and 26, alkaloid levels are lower and are recommended for burley tobacco production in the development of genetic stocks. Both HI Burley 21 and 26 have high alkaloid levels in leaf, root, and seed, and for use in the development of new genetic stocks. Both HI Burley 21 and 26 have high alkaloid levels in leaf, root, and seed, and for use in the development of new genetic stocks.

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