Registration of ‘ICMV 155’ Pearl Millet

ICMV 155, a grain cultivar of pearl millet (Pennisetum glaucum (L.) R. Br.) (Reg. no. CV-5, PI 572308), was developed by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, Andhra Pradesh, India. ICMV 155 was released in August 1991 by the Ministry of Agriculture, Government of India, for use in all pearl millet growing areas of India. ICMV 155 was tested under the experimental designations ICMV 84400 and MP 155.

The Cycle 0 population of NELC (New Elite Composite) was formed by random-mating 47 superior lines from nine ICRISAT composites, all of which had African and Indian germplasm in their parentage. Eleven of these lines were from the parental composite of ‘WC-C75’ (1). The Cycle 0 bulk composite of NELC had high grain yield potential. Four cycles of recurrent selection were carried out on this population utilizing half-sib, full-sib, S2, and S3 progeny selection. However, when the populations of all cycles were tested at three locations over 3 yr, gains in grain yield relative to the Cycle 0 population were nonsignificant (23 ± 51 kg ha−1, or 0.9%, per cycle).

In the 1984 rainy season at Patancheru, India, ≈ 1000 plants from Cycle 4 bulk of NELC were space-planted, with 0.75 m between rows and 0.5 m spacing within rows. These plants were selfed and 59 of them were visually selected for high grain yield and similar plant height, panicle characteristics, and time to flowering. Selfed seed of each of these 59 plants was bulked in equal quantities and sown during the 1985 dry season in an irrigated isolation plot and then mass-selected again for grain yield, plant height, panicle characteristics, and time to flowering, to produce an experimental open-pollinated variety designated ICMV 84400.

ICMV 155 was first evaluated in the 1985 rainy season in replicated yield trials conducted by ICRISAT in India at Patancheru (18° N lat), Hisar (29° N), and Bhavanisagar (11° N). Average grain yield was 3.3 ± 0.1 t ha−1, 23% greater than both WC-C75 and the Cycle 4 population of NELC.

ICMV 155 was tested as MP 155 by the All India Coordinated Pearl Millet Improvement Project (AICPMIP) in 100 replicated trials conducted over 4 yr (1986 to 1989). In these trials, average grain yield of ICMV 155 was 2.0 t ha−1, 13% more than WC-C75. Stover yield was assessed in 79 of the trials. ICMV 155 averaged 6.6 t ha−1 of dry fodder, 7% more than WC-C75. On average, ICMV 155 and WC-C75 both flowered 54 d after sowing in these trials. Plant height of ICMV 155 averaged 1.9 m, and was not significantly different from that of WC-C75. In disease nurseries from 1986 to 1988, the incidence of downy mildew [caused by Sclerospora graminicola (Sacc.) Schröd.] on ICMV 155 (3.3%) was equivalent to that on WC-C75 (2.9%).

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References and Notes

2. Pheru Singh, S.D.A.P.O. Box 910064, Mongu, Zambia; Cereals Program, ICRISAT, Patancheru, A.P. 502 324, ITC Ltd., Agri-Business Division, 31 Sarojinidewa, 500 003, Ap, India; and J.R. Witcombe, Ctr. for Arid Rural Develop., Univ. of Wales, Bangor, Gwynedd, LL57 2UW, UK. Approval no. 1452 by ICRISAT. Registration by SSA. Acceptance notes.

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Registration of ‘Repell II’ Perennial Ryegrass

Repell II perennial ryegrass (Lolium perenne cvs. CV-165, PI 561709) was developed by Loftus, Bound Brook, NJ, and released August 1991 from material obtained from the New Jersey Agricultural Experiment Station in 1962 to improve perennial ryegrass cultivars. Repell was used in the development of this cultivar and was evaluated under the experimental designation LDRD.

Repell II is an advanced-generation synthesis selected from the maternal progenies of 17 clones developed from a breeding program initiated by the New Jersey Agricultural Experiment Station in 1962 to improve perennial ryegrass cultivars. Repell II perennial ryegrass plants were selected from old lawns, parks, and sports fields in New York, New Jersey, and southeastern Pennsylvania. Clonal and progeny tests of these materials conducted under maintenance conditions led to the development of improved turf-type cultivars and populations.

Following several cycles of phenotypic and recurrent selection, the 17 maternal clones of Repell II were selected from 11 separate breeding populations. Selection was based on attractive appearance, dark green color, medium-low growth profile, seed yield potential, and relative freedom from disease. Half-sib progeny from each clone were subset in a closely mowed turf trial at North Brunswick, N.J. selected from these progeny plots were established in spaced-plant nursery at Adelphia, NJ, during Spring 1985. Plants were selected for increased uniformity, a purple pigmentation (frequently observed in breeding programs) to select for a darker green color; plants were discarded prior to anthesis. Breeder seed was harvested from remaining plants. The first certified seed was produced in 1991.

Repell II perennial ryegrass is an attractive, low-growing, turf-type cultivar capable of growing on a wide range of soils. Repell II perennial ryegrass has good winter-hardiness and resistance to large brown patch disease (caused by Cladosporium herbarum) and brown spot disease (caused by Sclerotinia tenuissima) on attractive appearance, dark green color, medium-low growth profile, seed yield potential, and relative freedom from disease. Half-sib progeny from each clone were subset in a closely mowed turf trial at North Brunswick, N.J. selected from these progeny plots were established in spaced-plant nursery at Adelphia, NJ, during Spring 1985. Plants were selected for increased uniformity, a purple pigmentation (frequently observed in breeding programs) to select for a darker green color; plants were discarded prior to anthesis. Breeder seed was harvested from remaining plants. The first certified seed was produced in 1991.

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