Registration of 'ICMV 155' Pearl Millet

ICMV 155, a grain cultivar of pearl millet (Pennisetum glaucum (L.) R. Br.), 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, S0, and S1 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-plantcd, 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. Selected 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 (Sac.) Schröt.] on ICMV 155 (3.3%) was equivalent to that on WC-C75 (2.9%).

ICMV 155 is more uniform than WC-C75 for panicle characteristics, plant height, and time to flowering. Panicles of ICMV 155 are compact to semicompact, cylindrical, nonbristled, and somewhat longer than those of WC-C75. Under excellent growing conditions, panicles of ICMV 155 have bent tips. Glumes of ICMV 155 are predominantly nonpigmented, and anthers are cream to yellow in color. Grain of ICMV 155 is globular to slightly obovate, and light-gray to slate-gray in color. Grain mass is medium (8 to 10 g 1000⁻¹ grains) and equivalent to that of WC-C75.

Breeder seed of ICMV 155 is being produced by the Cereals Program, ICRISAT, Patancheru, Andhra Pradesh, India, and is available to public and private seed agencies in India.

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References and Notes
2. Pheru Singh, SIDA, P. O. Box 910964, Monga, Zambia; A.G.B. Raj, Cereals Program, ICRISAT, Patancheru, AP 502 324, India; M.N.V.R. Rao, ITC Ltd., Agri-Business Division, 31 Sarojini Devi Rd., Secunderabad 500 003, AP, India; and J.R. Witcombe, Ctr. for Arid Zone Studies, Univ. of Wales, Bangor, Gwynned, LL57 2UW, UK. Approved as Journal Article no. 1452 by ICRISAT. Registration by CSSA. Accepted 31 Dec. 1993.

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Registration of Repell II Perennial Ryegrass

Repell II perennial ryegrass (Lolium perenne L.) (Reg. no. CV-165, PI 561709) was developed by Lofts Seed, Inc., of Bound Brook, NJ, and released August 1991. Germplasm obtained from the New Jersey Agricultural Experiment Station was used in the development of this cultivar. Repell II was evaluated under the experimental designation, LDRD.

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

Following several cycles of phenotypic and genotypic 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 subsequently seeded in a closely mowed turf trial at North Brunswick, NJ. Plants selected from these progeny plots were established in an isolated spaced-plant nursery at Adelphia, NJ, during September 1988. Plants were selected for increased uniformity, and for decreased 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 the remaining plants. The first certified seed was produced in 1991.

Repell II perennial ryegrass is an attractive, persistent, lower-growing, turf-type cultivar capable of producing turf with medium-fine texture, medium-high density, and reduced rate of vertical growth. It has a darker green color than many ryegrass cultivars. Repell II has good winter-hardiness and cold-temperature color retention. It has moderate resistance to large brown patch disease (caused by Rhizoctonia solani Kühn) and winter brown blight (caused by Drechslera siccans [Drechs.] Shoemaker). Repell II is easy to establish, having rapid germination, excellent seedling vigor, and the ability to grow on a wide range of soils.

Repell II is recommended for use on athletic fields, home lawns, industrial sites, school grounds, and golf course cart paths, tees, and fairways. It is well adapted for winter overseeding of dormant warm-season turf in the southern USA and similar regions throughout the world.

Each of the 17 parental clones of Repell II contained an endophytic fungus (Acremonium loli J. Latch, Christensen & Samuels) that is associated with enhanced resistance to a num-

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