

REGISTRATION OF PARENTAL LINES

Registration of ICMP 451 Parental Line of Pearl Millet

ICMP 451 (Reg. no. PL-23, PI 572307) is the restorer parent of pearl millet [*Pennisetum glaucum* (L.) R. Br.] single-cross grain hybrid cultivar ICMH 451. It was developed by the Cereals Program of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, Andhra Pradesh, India, and released in May 1986 by the Ministry of Agriculture, Government of India. ICMP 451 traces to Cycle 2 of ICRISAT Late Composite. This composite was constituted by random-mating 46 diverse lines of African origin that flowered in >55 d from seeding during the 1973 rainy season at ICRISAT Center in India.

Initially 315 full-sib progenies produced from the Late Composite at ICRISAT Center were evaluated during the 1977 rainy season in a cooperative breeding nursery at Kamboinsé, Burkina Faso, where downy mildew [caused by *Sclerospora graminicola* (Sacc.) J. Schröt.] is a serious problem. The most resistant full-sib progenies were selfed and subjected to two generations of pedigree selection for downy mildew resistance, high grain yield and large panicle size to produce S₂ progenies at Kamboinsé. The seed of these S₂ progenies were sent back to ICRISAT Center in 1979, where another two generations of pedigree selection in one of these progenies produced an S₄ progeny, LCSN 72-1-2-1-1. This S₄ progeny was subjected to five generations of pedigree bulk selection for the above traits to produce an S₉ progeny bulk.

Variability for plant height, days to flower, bristles, and shape and compactness of panicles was observed in the S₉ progeny bulk. One generation of pedigree selection in the S₉ progeny bulk followed by three generations of pedigree bulk selection for high grain yield, and large, bristled, semicompact, candle-shaped panicles led to the identification of 30 phenotypically similar progenies, whose seeds were bulked. Two additional generations of pedigree selection for above characters from this bulk (including a test-cross evaluation to select for complete male-fertility restoration of hybrids) led to the selection of 638 S₁ progenies. The remnant seeds of these selected progenies were bulked and random-mated for three generations to produce seed stock of ICMP 451.

In the parental lines trial of the All India Coordinated Millets Improvement Project conducted in 1984 at seven locations in India, ICMP 451 averaged 1.8 t ha⁻¹ grain yield, which was 50% greater than JL 104. It produced 5.0 t ha⁻¹ of dry stover yield (16% more than JL 104) and had a plant height of 1.7 m (0.4 m taller than JL 104). Maturity was comparable to that of JL 104 (86 to 87 d). ICMP 451 has broad leaves, medium-thick stems, and mostly bristled, candle-shaped, semi-compact panicles that become loose towards the tip. Anthers are yellowish at emergence and change to brick color after anthesis. ICMP 451 is a prolific pollen producer. It flowers 2 to 4 d earlier than 81A, the female parent of ICMH 451. It has medium-sized seed (8–9 g 1000 seed⁻¹), globular in shape and gray in color. ICMP 451 has a relatively high level of resistance to downy mildew in India. In the International Pearl Millet Downy Mildew Nursery in 1987 and 1988 at four locations in India, the mean disease incidence on ICMP 451 was 11%, compared with 6% for the resistant check, P7-4, and 68% for the susceptible check, NHB 3. Studies show that ICMP 451 is a good combiner for grain yield.

Breeder seed of ICMP 451 will be maintained by the Cereals Program, ICRISAT Center, Patancheru, Andhra Pradesh, India. ICMP 451 has been made available to the National and State Seeds Corporations, as well as several public and private seed producing agencies in India.

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References and Notes

1. Anand Kumar, D.J. Andrews, R.P. Jain, and S.D. Singh. 1984. ICMA-1 and ICMB-1 pearl millet parental lines with A1 cytoplasmic-genic male sterility system. *Crop Sci.* 24:832.
2. K. Anand Kumar, ICRISAT Sahelian Center, B.P. 12404, Niamey, Niger; K.N. Rai, B.S. Talukdar, S.D. Singh, A.S. Rao, P.P. Babu, and B.P. Reddy, Cereals Program, ICRISAT Center, Patancheru, Andhra Pradesh 502 324, India; D.J. Andrews, Dep. of Agronomy, Univ. of Nebraska, Lincoln, NE 68583-0915. Approved as Journal Article no. 1492 by ICRISAT. Registration by CSSA. Accepted 31 May 1994. *Corresponding author (Email: icrisat@cgnnet.com).

The authors are thankful to Dr. J.R. Witcombe for his several valuable suggestions during the development of this parental line.

Published in *Crop Sci.* 35:604 (1995).

ERRATA

In the **January–February 1995** issue, there are incorrect PI numbers in two registration articles.

For “Registration of ‘Crystal’ Hop” by A. Haunold, G.B. Nickerson, U. Gampert, D.S. Kling, and S.T. Kenny (*Crop Sci.* 35:279–280), the correct number is PI 572234.

In “Registration of Four Maintainer (HA 382 to HA 385) and Four Restorer (RHA 386 to RHA 389) Sunflower Germplasm Lines” by J.F. Miller and T.J. Gulya (*Crop Sci.* 35:286), the correct number for GP-196 is PI 578011.