

Table 1. Plant characteristics of four pearl millet ergot resistant inbred lines recorded in the 1984 summer at ICRISAT Center, Patancheru.

Line	Reg. no.	Ergot severity†	Time to 50% flowering	Plant height	Tillers per plant	Head length	1000-grain mass
		%	d	cm	no.	cm	g
ICML 1	GP-5	3	57-59	149-165	3-5	21-23	5.6
ICML 2	GP-6	2	56-58	150-164	3-5	22-24	5.4
ICML 3	GP-7	3	54-56	133-149	3-4	27-29	6.5
ICML 4	GP-8	4	55-57	158-174	3-4	26-28	6.7
ICMS 7703		44‡	45-47	127-143	4-5	20-22	8.3
WC-C75		45‡	45-47	124-140	4-5	19-21	9.0

† Mean based on 2 to 4 yr of testing in the Int. Pearl Millet Ergot Nursery (IPMEN) at Samaru (Nigeria), Aurangabad, Jamnagar, Patancheru, Ludhiana, New Delhi, and Mysore (India).

‡ Based on screening at Patancheru in the 1984 rainy season.

In IPMEN testing, these populations showed 1 to 4% ergot severity compared with 66% on the susceptible check. At ICRISAT Center in the multiple disease nursery these lines were free of smut (65% severity in the susceptible check) and showed <1 to 3% downy mildew incidence (42% incidence in the susceptible check). In yield testing at seven locations in India (rainy season, 1984), ICML 3 and ICML 4 had grain yields of 2170 and 1970 kg ha⁻¹, respectively, compared with 1940 kg ha⁻¹ of a standard check 'WC-C75'.

Compared to the 'ICMS 7703' and WC-C75 checks, the four populations are taller and later maturing, but they have greater head length and similar tillering capacity (Table 1). Seed color of the four populations varied from gray to deep gray to brown, seed shape from obovate to globular, and seed mass from 6.5 to 8.6 g per 1000 seed.

Seed of these populations are available on request from ICRISAT, Patancheru P.O., Andhra Pradesh 502324, India.

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References and Notes

1. Pearl Millet Improvement Program, ICRISAT, Patancheru P.O., Andhra Pradesh 502324, India. Submitted as Journal Article no. 565 by ICRISAT. Registration by CSSA. Accepted 30 Oct. 1987. *Corresponding author. Published in Crop Sci. 28:381-382 (1988).

REGISTRATION OF FOUR ERGOT RESISTANT GERMPLASMS OF PEARL MILLET

FOUR pearl millet [*Pennisetum americanum* (L.) Leeke] inbred lines, ICML 1 (Reg. no. GP-5) (PI 512045) (ICMPE 13-6-27); ICML 2 (Reg. no. GP-6) (PI 512046) (ICMPE 13-6-30); ICML 3 (Reg. no. GP-7) (PI 512047) (ICMPE 13-6-25); and ICML 4 (Reg. no. GP-8) (PI 512048) (ICMPE 13-6-34) were selected for stable resistance to ergot (incited by *Claviceps fusiformis* Lov.) at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), India. These lines have been made available as resistance donors in breeding programs since January 1985.

ICML 1 and ICML 2 were derived from a J606-2 × J703-1 cross, and ICML 3 and ICML 4 from a J2238 × J2210-2 cross (J numbers are breeding lines from Jamnagar, India). These four lines are F₈/F₉ progenies of the above crosses that were screened and pedigree selected for resistance at each generation under high artificial ergot pressure at ICRISAT Center, Patancheru. Stability of resistance of these lines was tested in the International Pearl Millet Ergot Nursery (IPMEN) at 8 to 12 locations in India and West Africa for 2 to 4 yr (1). The mean ergot severities of these lines were between 1 and 3%, compared with 68% in the susceptible check. At ICRISAT Center, the lines were also resistant to downy mildew [caused by *Sclerospora graminicola* (Sacc.)

Table 1. Plant characteristics of six smut resistant pearl millet inbred lines recorded in the 1984 summer at ICRISAT Center, Patancheru.

Line	Reg. no.	Smut severity†	Time to 50% flowering	Plant height	Tillers per plant	Head length	1000-grain mass
		%	d	cm	no.	cm	g
ICML 5	GP-9	<1	48-52	130-150	1-3	20-25	9.0
ICML 6	GP-10	<1	51-55	85-100	4-7	25-30	6.0
ICML 7	GP-11	<1	42-46	135-145	1-3	20-24	9.8
ICML 8	GP-12	<1	51-55	140-160	2-4	20-24	8.1
ICML 9	GP-13	<1	43-47	150-160	1-3	25-28	7.6
ICML 10	GP-14	1	58-62	150-180	1-3	22-26	8.3
ICMS 7703		25‡	45-47	127-143	4-5	20-22	8.3
WC-C75		23	45-47	124-140	4-5	19-21	9.0

† Mean of 4 to 7 yr of testing in the Int. Pearl Millet Smut Nursery (IPMSN) at Hisar, Patancheru, Jamnagar (India), and Bambye (Senegal).

‡ Mean based on screening at two locations (Hisar and Patancheru) in India during the 1984 rainy season.

Shroet.] and smut (caused by *Tolyposporium penicillariae* Bref.).

Compared with 'ICMS 7703' and 'WC-C75', two standard check cultivars that have been released for cultivation in India, the four inbred lines are later maturing and somewhat taller, but they have comparable tillering capacity and longer heads (Table 1). Seed color of the lines varies from gray to brown, seed shape from globular to obovate, and seed mass from 5.6 to 6.7 g per 1000 seed.

Seed of these lines are available on request from ICRISAT, Patancheru P.O., Andhra Pradesh 502324, India.

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References and Notes

1. Thakur, R.P., V.P. Rao, R.J. Williams, S.S. Chahal, S.B. Mathur, N.B. Pawar, S.D. Nafade, H.S. Shetty, G. Singh, and S.G. Bangar, 1985. Identification of stable resistance to ergot in pearl millet. Plant Dis. 69:982-985.
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REGISTRATION OF SIX SMUT RESISTANT GERMPLASMS OF PEARL MILLET

SIX inbred lines of pearl millet [*Pennisetum americanum* (L.) Leeke] ICML 5 (Reg. no. GP-9) (PI 512049) (SSC FS 252-S-4); ICML 6 (Reg. no. GP-10) (PI 512050) (ICI 7517-S-1); ICML 7 (Reg. no. GP-11) (PI 512051) (EBS 46-1-2-S-2); ICML 8 (Reg. no. GP-12) (PI 512052) (EB 112-1-S-1-1); ICML 9 (Reg. no. GP-13) (PI 512053) (NEP 588-5690-S-8-4); and ICML 10 (Reg. no. GP-14) (PI 512054) (P 489-S-3) were selected for stable resistance to smut (caused by *Tolyposporium penicillariae* Bref.) at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), India. These lines have been made available as resistance donors in breeding programs since June 1984.

The lines were selected from germplasm accessions/breeding lines originating from Uganda (SSC), India (ICI), Nigeria (EB/EBS), Lebanon (NEP), and Senegal (P). In each line, individual plant selection for smut resistance was carried out under artificial inoculation at Hisar and at ICRISAT Center, Patancheru, for four to five generations. Stability of resistance of these lines and others was tested for 4 to 7 yr in the International Pearl Millet Smut Nursery (IPMSN) at four to 6 locations in India and West Africa. The mean smut severities of these lines varied from <1 to 1%, compared