Pearl Millet
Hybrid ICMH 423

- **High grain and fodder yield**
- **Short to medium height: 1.0-2.2 m**
- **Matures in 75-90 days**
- **Resistant to downy mildew**
- **Phenotypically similar to BK 560**
- **Recommended for all millet-growing areas in India**
- **Marketed in India as ICMH 423 (and also as MH 143)**

ICRISAT

Plant Material Description no. 19

International Crops Research Institute for the Semi-Arid Tropics
Patancheru, Andhra Pradesh 502 324, India

1989

Purpose of Description

ICMH 423 was released in Jan 1988 by the Ministry of Agriculture, Government of India, for general cultivation in all the pearl millet growing areas of the country.

Origin and Development

The parents of ICMH 423 are restorer line ICMP 423 and male-sterile line ICMA 841.

Pollinator ICMP 423 (illustrated on p.4) is an inbred line derived by selfing from the ICRISAT Early Composite. Its pedigree is EC S3 211-1 (which is abbreviated because it has been bulk-advanced for several generations more than indicated by the pedigree).

Male-sterile line ICMA 841 was derived from seed stock number 8015 of 5141B by selection for downy mildew resistant plants after seedling inoculation.

Performance

ICMH 423 has been tested (as MH 143) in All India Coordinated Pearl Millet Improvement Project (AICPMIP) trials for 4 years. It yielded 1% more grain than the best check hybrid MBH 110 (see table) and 20% more fodder than the same hybrid. ICMH 423 is highly resistant to downy mildew (see table).

Plant Characters

ICMH 423 is of medium height (1.0-2.2 m). It reaches 50% flowering in about 48 days and is medium-maturing (75-90 days). Heads are medium in length (24 cm), are not bristled, and are cylindrical. Glumes are usually purple at maturity, but this is dependent on the environment.

Seed Characters

The grains weigh 8 g 1000^{-1}, are gray, globular, and have a vitreous endosperm.

Seed Production

In hybrid seed production plots grown in the dry season in Andhra Pradesh, India, the main heads of the male-sterile line ICMA 841 are approximately 3-5 days earlier in flowering than the main heads of the pollinator line. In general, seed can be successfully produced with simultaneous sowing of both parents. This relation may change depending on the environment. In Gujarat in the dry season the parental lines flower at about the same time, except in poorly managed or drought-stressed plots when flowering in the pollinator is delayed more than in the seed parent.

Cultural Practices

Recommended cultural practices for ICMH 423 in India are the same as those for previously released pearl millet hybrids. Advice by State Departments of Agriculture for growing pearl millet hybrids should therefore be followed.

Grain yield, fodder yield, and downy mildew incidence of pearl millet hybrid ICMH 423 in AICPMIP trials, 1983-86.

Cultivar	1983	1984	1985	1986	Mean	Superiority of ICMH 423 over MBH 110(%)
			Grain yield (t ha^{-1})			
	(19)[1]	(35)	(30)	(35)	(119)	
ICMH 423	2.05	2.02	2.07	2.13	2.07	
MBH 110[2]	1.93	2.00	2.11	2.14	2.04	1
Trial mean	1.76	1.86	2.02	2.16	1.95	
			Fodder yield (t ha^{-1})			
	(19)	(35)	(30)	(28)	(112)	
ICMH 423	5.7	6.8	5.7	5.2	5.9	
MBH 110	4.8	5.4	4.8	4.6	4.9	20
Trial mean	5.4	6.0	5.4	5.1	5.5	
			Downy mildew incidence (%)			
ICMH 423	-	0.0	-	-		
BJ 104[3]	-	12.5	-	-		

1. Numbers in parantheses indicate the number of locations over which the data were averaged.
2. Commercial check (private-sector hybrid).
3. Susceptible hybrid now commercially withdrawn.

Parental lines

Pollinator ICMP 423

1CMA 841

Plant Material Descriptions from ICRISAT

Leaflets in this series provide brief descriptions of crop genotypes identified or developed by ICRISAT, including:

- germplasm accessions with important agronomic or resistance attributes;
- breeding materials, both segregating and stabilized, with unique character combinations; and
- cultivars that have been released for cultivation.

These descriptions announce the availability of plant material, primarily for the benefit of the Institute's cooperators. Their purpose is to facilitate the identification of cultivars and lines and promote their wide utilization. Requests should be addressed to the Director General, ICRISAT, or to appropriate seed suppliers. Stocks for research use issued by ICRISAT are sent to cooperators and other users free of charge.

ICRISAT is a nonprofit scientific educational institute receiving support from donors through the Consultative Group on International Agricultural Research. Its major mandate is to serve as a world center for the improvement of grain yield and quality of sorghum, millet, chickpea, pigeonpea, and groundnut, and to act as a world repository for the genetic resources of these crops. The plant materials announced in these leaflets are end-products of this work, which is aimed at enhancing the agricultural productivity of resource-poor farmers throughout the semi-arid tropics.

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