
ICPM 93006, ICPM 93007, and ICPM 93008

Short-duration Male-sterile Germplasm Lines of Pigeonpea



Anthers: normal (left) and translucent (right).

- Extensively used in developing short-duration pigeonpea hybrids.
- Developed by incorporating the male-sterile gene 'ms₁' from MS3A.
- Easily identified by their translucent anthers.
- Male sterility stable in different environments.
- Mature in 110-124 days.



Growth habits of male-sterile lines: indeterminate (left) and determinate (right).



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Plant Material Description no. 59

International Crops Research Institute for the Semi-Arid Tropics
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Purpose of description

ICPM 93006, ICPM 93007, and ICPM 93008 are short-duration male-sterile pigeonpea germplasm lines that are being used extensively in developing short-duration pigeonpea hybrids. The world's first pigeonpea hybrid, ICPH 8, was developed by using ICPM 93006 as the female parent and the second, IPH 732, by using ICPM 93008 as the female parent. All the three lines were used in producing several promising hybrids, which are under multilocational trials in India. These lines are also being used for population improvement in pigeonpea.

Origin and development

ICPM 93006 and ICPM 93007 were developed by crossing MS3A with a short-duration pigeonpea cultivar, namely, Prabhat. The F_2 heterozygous (MS ms) segregants were crossed to Prabhat (as female parent) to produce BC_1F_1 . From BC_1F_2 population, determinate and indeterminate male-sterile (ms ms) plants were selected for backcrossing, using Prabhat as a recurrent parent. After five backcrosses, the determinate (ICPM 93006) and indeterminate (ICPM 93007) male-sterile lines were maintained by sibbing. ICPM 93008 was developed by crossing MS3A with an indeterminate short-duration cultivar T 21 and following the same procedure described above.

Synonyms

ICPM 93006 = ms Prabhat (DT), ICPM 93007 = ms Prabhat (NDT), ICPM 93008 = ms T-21.

Plant characters

ICPM 93006 has a compact, determinate growth habit whereas ICPM 93007 and ICPM 93008 are semi-spreading and indeterminate. In all the three lines, stems are green; flowers are yellow, with translucent anthers; and pods are green, with dark purple streaks. All produce copious pods under open-pollination. Different attributes of these lines and of their recurrent parents are given in Table 1.

Table 1. Characteristics of ICPM 93006, ICPM 93007, and ICPM 93008 and of their recurrent parents.

Line	Days to		Plant height (cm)	Primary branches (no.)	Nodes plant ⁻¹ (no.)	100-seed mass (g)
	Flowering	Maturity				
ICPM 93006	68	110	114	8	16	7.5
ICPM 93007	82	124	138	7	17	6.9
Prabhat						
(recurrent parent)	65	102	103	7	19	5.8
ICPM 93008	99	125	218	7	15	8.9
T-21						
(recurrent parent)	79	115	139	7	17	7.2

Seed characteristics

The seeds of all the lines are oval and dark brown.



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Plant Material Descriptions
from the
International Crops Research Institute for the Semi-Arid Tropics

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;
- 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 breeding lines and to promote their wide utilization. Requests for seed should be addressed to the Director General, ICRISAT, or to appropriate seed suppliers. Materials for research are sent by ICRISAT to cooperators and other users free of charge.