

## The Potential of Medium-Duration Pigeonpea

K.C. Jain and D.G. Faris, ICRISAT, Patancheru P.O., A.P. 502 324, India.

MEDIUM-DURATION pigeonpea performs well in places where the rainy season is too short for long-duration types and is particularly valuable where pigeonpea is wanted for an intercrop. In environments with mild winter temperatures it is also well adapted as a post-rainy season crop.

In southern India, medium-duration pigeonpea is sown at the start of the wet season. It flowers after the cessation of the rains and matures its seed before the winter, about 160-180 days after sowing. It is used as an intercrop with cereals such as sorghum, pearl millet, or groundnut. At ICRISAT when one row of this type of pigeonpea is sown with two rows of sorghum on the Vertisol soils or with five rows of groundnut on the Alfisols, it stabilises total production. This element of stability has led to farmers adopting the practice.

Three major diseases (*Fusarium* wilt, sterility mosaic (SM), and *Phytophthora* blight) and two insect pests (*Heliothis* and podfly) can cause substantial yield losses. However, good yielding lines with resistance to wilt and SM (Table 1) and tolerance to pod borer have been developed (Table 2).

TABLE 1. Yields (t/ha) of two wilt resistant, medium-duration pigeonpea lines and a susceptible control variety at ICRISAT Centre, rainy season 1984-85.

Entry	ICPL 84001	ICPL 8357	C 11 (control)	SE	CV%
1984	3.0	2.9	3.0	± 0.16	12
1985	1.7	1.8	1.7	± 0.08	9

Medium-duration pigeonpea has the potential to perform well in many parts of the world. In the Pigeonpea Observation Nursery at Suwan Farm, Thailand, the medium-duration entries were the best adapted of all maturity groups in 1982 and one entry, ICP 8863, yielded 5 t/ha compared to 2.1 t/ha for the local entry. In the 1984 Dry Season Trial at the International Rice Research Institute, in simulated rice-fallow conditions, the medium-duration entries outperformed the early entries and one of the *Heliothis* tolerant lines, ICPL 84060, yielded 3.2 t/ha (Table 2).

TABLE 2. Yields (t/ha) of medium-duration, *Heliothis*-tolerant pigeonpea lines from ICRISAT grown at IRRI, Los Baños, Philippines, 1984 dry season.

Entry	ICPL 84060	ICP 3009-EB-4-EB	ICPL 295 (control)	SE	CV%
Grain	3.2	2.7	2.5	± 0.52	36
Fodder	18.1	23.8	16.3	± 1.64	22

Besides disease and insect resistances, we have also bred and identified lines of this duration with many useful characters such as high protein, large-seeded vegetable, male sterile, dwarf and cleistogamous lines, and have identified many genetic markers.

## Population Density in Pigeonpea in Indonesia

S. Karsono, Malang Research Institute for Food Crops (MARIF), Jl. Raya Kendalpayak, Kotak Pos 66, Malang, East Java, Indonesia; and Sumarno, Bogor Research Institute for Food Crops (BORIF), Jalan Cijanggung No. 3 Bogor, Java, Indonesia.

The planting density of pigeonpea (*Cajanus cajan*) has not been studied in Indonesia. The local pigeonpea strains are rarely planted in monoculture and usually intercropped with corn or other legumes. Maximum yields can only be achieved at the optimum plant density, which is conditioned by many factors such as plant type (determinate vs indeterminate, branching vs non-branching, short vs tall) and the environment (soil fertility, soil moisture etc.) (Sumarno et al., unpubl.).

A density study was conducted at Muneng Experiment Station (East Java) in the wet season (WS) of 1984-85 and dry season (DS) of 1985. Five pigeonpea lines (QPL-17, QPL-135, QPL-332, cv. Hunt and QPL-95) were tested at four plant densities. Results are presented in Tables 1 and 2.