ICP 13828 – A Pigeonpea Germplasm Accession with 10-seeded Pods

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Pigeonpea [*Cajanus cajan* (L.) Millsp.] is an important source of protein for vegetarians in many countries in the semi-arid tropics. The pigeonpea germplasm assembled at ICRISAT, Patancheru is a rich source of diversity for several morpho-agronomic traits (Upadhyaya et al. 2005). In addition to many other traits, seed number per pod is also an important yield component in pigeonpea. Most cultivated pigeonpeas have 3–4 seeds per pod. However, there are several accessions with more seeds per pod (ranging from 5 to 7) in the world collection of pigeonpea germplasm maintained in the genebank at ICRISAT. A few accessions with long pods having as many as 8–9 seeds were also recorded while characterizing/evaluating the pigeonpea germplasm collection at Patancheru (Remanandan et al. 1988). These originate from diverse geographical areas and differ in other morphological traits: ICPs 8503 and 8504 (Origin: Guadeloupe, a French colony in Central America), ICP 12176 (Origin: Malawi), ICPs 13253 and 13256 (Origin: Kenya), ICPs 13555, 13828 and 13831 (Origin: Grenada) and ICPs 13961 and 13962 (Origin: Dominican Republic). Among these, ICP 8504 is an accession widely used in breeding programs for incorporating higher seed number per pod. However, for the first time we were able to locate pods with 10 well-developed seeds in the germplasm accession ICP 13828 (Fig. 1), though only three pods with 10 seeds were found from different plants grown on a 9-m row. ICP 13828 is a field collection from St. Patrick's in Grenada during an ICRISAT-initiated germplasm expedition in 1985. This accession was characterized for different morpho-agronomic traits during the 1986–87 rainy season at Patancheru. ICP 13828 is semi-spreading with indeterminate flowering habit, with 129 days to 50% flowering and 174 days to maturity. Plants grew about 130 cm tall and on average produced 50 pods. Pods were long and flat with mixed (green and purple) pod color. On an average 5.7 seeds per pod were produced. The seeds were cream colored and medium-sized (12.1 g 100 seeds^{-1}) with a seed protein content of 20.7 percent.

The number of seeds per pod is considered an important yield component (ICRISAT 1975). In regions where pigeonpea is used as a green vegetable, there is a strong consumer preference for cultivars with many seeds per pod, and the pigeonpea germplasm accession ICP 13828 could be a potential source for improving/developing cultivars for meeting such demands.

Figure 1. ICP 13828 pod with 10 seeds (left) and seeds (right).

Apart from the cultivated pigeonpea (*Cajanus cajan*, 2–9 ovules with 2–9 seeds), *Cajanus aromaticus* (8–10 seeds), *Cajanus goensis* (5–9 ovules with 5–8 seeds) and *Cajanus mollis* (8 or more ovules with 8–10 seeds) are other sources for higher number of seeds per pod (van der Maesen 1986) in the *Cajanus* genepool.

These accessions will be purified and the penetrance and expressivity of this trait studied further. Small seed samples of these accessions are available from the genebank for research use.

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