A new look at guar in Central Queensland

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Guar or cluster bean, Cyamopsis tetragonoloba (L) Taub, is a summer grain legume with excellent drought resistance. The seed contains between 19 and 34 per cent galactomannan gum as well as 20 to 34 per cent protein.

Evaluation of the crop under rainfed conditions was conducted at several centres in Queensland between 1959 and 1963. Allen (1964) reported and discussed the results of this work. Although trial yields as high as 1226 kg ha were recorded, and the crop appeared to be well adapted in the Callide Valley, no industry was established because prices for guar did not compete with those offered for existing crops.

Increased demand both overseas and within Australia during the 1970's has resulted in a new look at this crop in Central Queensland. In addition to further evaluation in the Callide Valley, the crop is being assessed in the Dawson Valley and the Central Highlands.

Sixty one cultivars selected within a diverse range of material introduced from India and the United States were evaluated at Biloela and Emerald under rainfed conditions in 1978-79. Site means for yield and phenological data as well as ranges for these characters at both sites are shown in the table.

TABLE 1. Seed yield at 12 per cent moisture and phenological data for guar screening trials under rainfed conditions at Biloela and Emerald 1978-79

Site	Site Mean			Site Range		
	Yield kg ha^{-1}	Flowering date Days	Height cm	Yield kg ha^{-1}	Flowering date Days	Height cm
Biloela	3359	30.1	90.1	2527-4196	26-34	66-115
Emerald	1455	34.8	89.7	943-2352	27-40	61-124

Yields were very encouraging when compared with those obtained previously. Much of the yield increase was attributed to cultivar improvement. The ability of guar to produce high grain yields from subsoil moisture was well demonstrated as the total rainfall from planting in mid December to harvest in mid May was 212 mm at Biloela and 264 mm at Emerald.

Nodulation was very poor at both sites, and we considered that the higher levels of nitrogen and phosphorus at the Biloela site were largely responsible for the differences in yield between the two sites. Further evaluation will be conducted on the major arable soils in Central Queensland with particular emphasis on determining the suitability of the currently recommended Rhizobium strain CB 756 for the cultivars and soil types being tested.

Allen, G.H. (1964). Qd agric. J. 90: 224