

## Time of sowing of irrigated grain sorghum in the Murrumbidgee Valley

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Access to irrigation water allows a wide range of sowing times. Information on the effect of sowing date on phasic development and yield potential enables growers to make informed decisions on when to sow. Soil temperature is usually too cold for satisfactory germination before mid October in the region where this study was undertaken. This paper reports the effect of sowing date on grain sorghum grown at the Leeton Field Station (lat. 34°S, long. 146°E).

### Methods

Grain sorghum (Yates 212) was irrigated up in late October, November, December and January in 1984/85, 1985/86 and 1986/87. A plant population of 250,000 plants/ha was established on hilled rows spaced 75 cm apart on a grey clay (Ug 5.28). Crop husbandry was appropriate for a high yield. Ground cover development, grain yield, individual seed weight, harvest index and protein content of the grain were measured.

### Results and discussion

In two of the three seasons the highest grain yield was produced from the late November sowing (Table 1). Yield was reduced 21% by delaying sowing to late December and a further delay until late January gave an additional substantial reduction. Individual seed weight did not decline significantly until the late January sowing. Grain protein averaged 11.0% (range 10.4 -12.2) and was not affected by sowing time. The late January sowing achieved full ground cover within about 55 days from sowing compared with 60 days for the late October sowing.

These results indicate that to achieve maximum potential grain yield the sowing time is restricted. Soil temperature dictates how early sowing can be and low air temperatures during grain filling are reducing potential yield when sowing is delayed until mid to late December.

**Table 1. Grain yield of grain sorghum (tonnes/hectare at 13.5% moisture) at a range of sowing times**

Growing Season	Sowing date				l.s.d. (p=0.05)
	Late October	Late November	Late December	Late January	
84/85	9.4	10.2	7.4	4.8	0.7
85/86	12.4	11.9	9.9	6.7	1.4
86/87	9.5	11.6	9.0	-*	1.7
Mean	10.4	11.2	8.8	(5.8)	

\* Temperatures too cool for grain development.