

Performance of four lupin species in Central Queensland

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Lupin as a winter grain legume has been grown successfully in southern Australia during the 1970's. The crop has also shown potential as an irrigated crop on the eastern Darling Downs, Hall (1978). Demands for high protein grain for use in stock rations and the benefit of a winter grain legume in the irrigation areas of Central Queensland led us to investigate the potential of lupins in the Callide Valley and the Emerald Irrigation Area.

Initially, testing was conducted with cultivars of *Lupinus albus* and *L. angustifolius*. Promising results were obtained at Biloela in the Callide Valley with the cultivar Ultra (3080 kg ha⁻¹). At Emerald, yields were considerably lower, with Ultra being the highest yielding cultivar (1990 kg ha⁻¹). In 1977, cultivars within four species were tested at Biloela and within three species at Emerald. Further testing was continued at Biloela in 1978 within three species. Yield and protein levels for both years are shown in the table.

TABLE 1. Yield and protein levels at 12% moisture of selected cultivars within lupin species evaluated at Biloela and Emerald.

Species	Cultivar	Emerald 1977		Biloela 1977		Biloela 1978	
		Yield kg ha ⁻¹	Protein %	Yield kg ha ⁻¹	Protein %	Yield kg ha ⁻¹	Protein %
<i>L. albus</i>	Ultra	1200	28.3	2700	33.1	4240	33.0
	Kiev	1320	30.5	3170	35.2	4030	31.2
	4763	-	-	-	-	4732	31.4
<i>L. angustifolius</i>	Unicrop	1340	28.5	1650	25.0	2920	29.1
<i>L. cosentini</i>	CB 49	740	28.2	520	26.2	-	-
	CB 48	-	-	-	-	2710	29.2
<i>L. luteus</i>	Sulpha	-	-	30	32.2	-	-
	Weiko III	-	-	19	34.5	-	-

Gladstones (1970) reported that differences among the climatic requirements of the main cultivated *Lupinus* species were definite though not great. Our evaluation showed clearly that cultivars within *L. albus* have potential in the subtropical, subhumid climate of the Callide Valley. Temperature in excess of 25°C in the tropical, semi-arid climate of the Emerald irrigation area during flowering were considered to be a major factor limiting yield in that environment. Further evaluation of the *L. albus* cultivars at varying planting dates is warranted at Emerald before a final assessment of lupins can be made in that area.

Gladstones, J.S. (1970). *Fld Crop Absts.* 23: 123.

Hall, S.D. (1978). *Qd agric. J.* 104: 380.-