

EFFECT OF LEGUME SPECIES ON EWE FERTILITY
IN SOUTH WESTERN AUSTRALIA. I. BADGINGARRA

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The experiment was conducted at Badgingarra (210 km north of Perth) to study the effects of prolonged grazing of a number of pasture species on ewe fertility. Eight plots, each 4 ha in area, were sown in 1965 to either Annual Wimmera Rye Grass, W.A. Serradella, Kondinin rose clover, a mixture of Kondinin rose and Dinninup subterranean clover, or one of the following subterranean clovers, Woogenellup, Geraldton, Dinninup or Dwalganup. Forty ewe weaners were placed on each plot in May 1966. In each successive year the ewes were grazed on their respective plots during the growing season (approx. May to October) and then run, as one flock on dry non-oestrogenic pasture for the remaining period which included mating in February. All plots sown to subterranean clover remained comparatively pure (> 90% sown cultivar) and clover dominant (> 80%) throughout the experiment.

Lambing results for the 3 non-oestrogenic (control) plots, Wimmera Rye, Serradella and Kondinin Rose, were similar and have been pooled in Table 1 below. Results were also similar on the Dinninup-Rose mixture and the Dinninup plots as the former quickly became Dinninup dominant. Results for these two plots were also pooled.

TABLE 1

Per cent ewes lambing (to ewes joined)/No. of ewes joined

Year	Pasture Type				
	Non-oestrogenic Controls	Subterranean Clover			
		Woogenellup 0.15 [†]	Geraldton 0.79 [†]	Dinninup 1.19 [†]	Dwalganup 1.30 [†]
1967	91/117	76 [*] /37	87/38	78 [*] /79	89/37
1968	73/98	84/32	78/37	72/71	56/34
1969	86/90	69/29	***56/36	***53/64	***30/33
1970	59/85	41/27	42/33	**35/63	***6/31
1971	84/82	63 [*] /27	**53/30	***41/59	***8/26
1972	85/62	67/24	**52/21	***38/47	***0/22

† % Formononetin, 1966.

Significantly different from Control: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Compared with the Controls, highly significant reductions in the percentages of ewes lambing occurred in treatments involving cultivars high in formononetin. This effect was marked in the Dinninup treatment and most severe in the Dwalganup treatment. There were no significant effects on the percentage of ewes twinning (to ewes lambing) and only minor effects on percentage lamb mortality (to lambs born). In the latter case, relatively more lambs died in the Geraldton ($p < 0.001$) and Dinninup ($p < 0.05$) treatments in 1971.