

## Shallow autumn cultivation improves burr medic pastures

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Spineless burr medic (*Medicago polymorpha* var *brevispina*) is well adapted to a range of mildly acid medium textured soils in the wheatbelt of Western Australia. These include the red-brown sandy loams of northern and eastern regions and the grey clay soils of southern regions. These soils often display hardsetting characteristics and newly formed burrs are not readily incorporated into the soil surface. In these circumstances second year regeneration can be poor since burrs tend to dry out before seeds can germinate. This effect is particularly noticeable in situations where there is an uneven break to the season. In 1986, a set of trials was designed to test whether a shallow autumn cultivation before the break of the season could improve medic establishment.

### Methods

A Serena burr medic pasture was selected on a grey clay soil near Pingrup, Western Australia. The pasture was established in 1985 and produced a seed yield of 540 kg/ha. The effect of three times of cultivation to 2.5 cm over the late summer/early autumn period was compared. Pasture regeneration and dry matter production was measured in July, six weeks after the break of the growing season.

### Results and discussion

Medic establishment and dry matter production was increased by 50% with any cultivation treatment before the break of the season. In addition there was a more even spread of germination and field observation suggested roots nodulated at a faster rate on cultivated plots. The density of ryegrass was also increased at the early times of cultivation. Cultivation after the break of the season resulted in a substantial loss of plant numbers, particularly of the medic component.

**Table 1. Pasture establishment counts (plants/m<sup>2</sup>) and dry matter production (kg/ha) following autumn cultivation of a first year Serena medic pasture - July 1, 1986.**

Treatment	Medic		Ryegrass		Total	
	plants/m <sup>2</sup>	DM	plants/m <sup>2</sup>	DM	plants/m <sup>2</sup>	DM
No cultivation	3,004	338	2,207	195	5,211	532
Cultivated 4/3/86 (after false break)	4,643	529	3,140	385	7,783	914
Cultivated 7/5/86 (before true break)	4,665	521	2,899	308	7,564	829
Cultivated 19/5/86 (after true break)	1,643	246	2,159	338	3,802	584
LSD p < 0.05	1,291	125	505	156	1,500	171

N.B. Break os season 14/5/1986      DM - Dry Matter

A shallow cultivation before the break of the season could be a valuable management technique to increase production of second year medic pastures.