

## OVEN-DRIED GLIRICIDIA LEAF (*GLIRICIDIA SEPIUM*) IS UNPALATABLE TO SHEEP AND GOATS

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Although gliricidia leaf is a potentially useful source of protein, its feeding value is sometimes lowered by its low palatability. This low palatability has been observed in some parts of the world (eg Somalia: Madany 1992; Kenya: Kaitho 1997), but not elsewhere such as in Sri Lanka and Colombia (Lowry 1989). The palatability of Australian gliricidia was unknown, therefore choice tests were conducted in which it was paired with calliandra (*Calliandra calothyrsus*), albizia (*Albizia chenensis*) and leucaena (*Leucaena leucocephala* cv. Tarramba) to study its relative acceptance by sheep and goats compared to these more palatable fodder trees.

Six sheep and six goats (mean liveweight  $\pm$  s.d.  $35 \pm 2.3$  kg and  $36 \pm 2.9$  kg respectively) were used to compare the six combinations of leaf in a latin square design. Fodder tree leaf (actually leaf plus rachis) samples were dried, then offered in pairs in a feed trough divided into two compartments. Test samples (200 g of each leaf type) were given at 0700, for 15 minutes. During the experiment the animals were maintained on 800 g grass hay daily and any uneaten residue was removed at 1700 to allow overnight fasting. Fresh water and multiminerals blocks were also provided *ad lib*.

The nitrogen (N), neutral detergent fibre (NDF) and condensed tannin (CT) contents (DM basis) of gliricidia, calliandra, albizia and leucaena, were respectively 2.9, 3.3, 3.7 and 2.8% N; 40.4, 50.8, 62.8 and 31.3% NDF; 7.7, 5.2, 3.3 and 5.0% CT. Intake rates, by both sheep and goats, of albizia and calliandra decreased when they were paired with leucaena (the most palatable), and increased when paired with gliricidia (the least palatable). Intake rates of tree leaves (least square means obtained by pooling all measurements) are reported in Table 1.

**Table 1. Overall intake rates (least square means) of albizia, calliandra, gliricidia and leucaena leaf when fed to sheep and goats**

	Sheep		Goats	
	Intake rate (g DM/minute)	s.e.	Intake rate (g DM/minute)	s.e.
Albizia	6.35 <sup>a</sup>	0.667	7.78 <sup>a</sup>	0.719
Calliandra	4.86 <sup>a</sup>	0.667	7.41 <sup>a</sup>	0.719
Gliricidia	-1.17 <sup>b</sup>	0.667	1.21 <sup>b</sup>	0.719
Leucaena	12.13 <sup>c</sup>	0.667	13.37 <sup>c</sup>	0.719

Within columns, least square means with similar notations are not different ( $P > 0.05$ ).

The acceptability of fodder tree leaves may be influenced by their contents of secondary compounds such as tannins and coumarin, and also by their NDF content. Both CT and NDF may have influenced the palatability of these fodder trees. For example, leucaena was the most palatable and had the lowest NDF value although it contained a moderate level of CT. Gliricidia was the least palatable and had the highest CT although its NDF content was moderate. These Australian-grown fodder trees can be ranked in an increasing order of palatability, for both sheep and goats: gliricidia, calliandra, albizia and leucaena. This is similar to the ranking reported for Kenyan tree foliages by Kaitho (1997).

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