

## AN EVALUATION OF ACACIA SALIGNA AS A MAINTENANCE FORAGE FOR SHEEP

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*Acacia saligna* (Golden wreath wattle), a small tree indigenous to Western Australia, has potential for use as a fodder/shelter belt tree in areas receiving between 250 to 600 mm annual rainfall. It can provide green feed of high protein content (10-15%) when grasses and other herbaceous material is limited in quantity and of low nutritive value. This experiment evaluates *A. saligna* as a maintenance forage and assesses two additional supplements, polyethylene glycol (PEG) and sulphur (S), for their potential to overcome the effects of depressed protein digestibility of acacia leaves caused by their high tannin concentrations. Recent studies (1) have indicated that the nutritive value of *Acacia aneura* can be increased by supplementation of PEG to sheep.

### MATERIALS AND METHODS

Thirty mature Merino wethers weighing 43.8 ± 0.24 kg (mean ± s.e.) were individually penned and allocated to one of four dietary treatments: 1, hay; 2, hay and acacia foliage; 3, hay and acacia foliage supplemented with 8 g PEG/d; and 4, hay and acacia foliage supplemented with sodium sulphate (1 g sulphur (S)/d). All animals were fed daily *ad libitum* from 1 to 25 September 1992. Feed intake, *in vivo* dry matter digestibility measurements and liveweight changes were undertaken from 17 to 25 September.

### RESULTS AND DISCUSSION

Total dry matter intakes were higher for sheep fed acacia foliage than for sheep fed hay only, but the total *in vivo* dry matter digestibilities were significantly lower ( $P < 0.05$ ) due to the protein binding actions of the tannins. Supplementation with PEG and S increased the digestibility of the acacia by 9.4% and 3.1% respectively. Consequently, there were no significant differences in total digestible dry matter intake between the different dietary treatments (Table 1). However, animals offered acacia foliage maintained their liveweight over the measurement period, whereas animals offered hay only, lost weight.

Table 1. Mean (± s.e.) total digestible dry matter intakes (DDMI) and liveweight changes for mature wethers.

|                         | Hay only                  | Acacia/Hay               | Acacia/Hay/PEG           | Acacia/Hay/S             |
|-------------------------|---------------------------|--------------------------|--------------------------|--------------------------|
| Total DDMI (g/d)        | 616 ± 19.3                | 620 ± 27.7               | 675 ± 48.0               | 602 ± 20.4               |
| Liveweight change (g/d) | -70.0 <sup>b</sup> ± 30.5 | 48.6 <sup>a</sup> ± 34.5 | 17.3 <sup>a</sup> ± 47.2 | 36.7 <sup>a</sup> ± 30.9 |

Within rows, means with different superscripts differ significantly ( $P < 0.05$ ).

### REFERENCES

1. Eady, S.J., Pritchard, D.A., Martin, P.R., and Martin, M.D.J. 1989. In: Recent Advances in Animal Nutrition in Australia. (Ed D.J. Farrell) (Univ. of New England: Armidale, NSW). p. 27A.