

## LIFETIME WOOL. 12. ESTIMATING PASTURE HEIGHT FOR USE IN GRAZFEED TO PREDICT EWE PERFORMANCE

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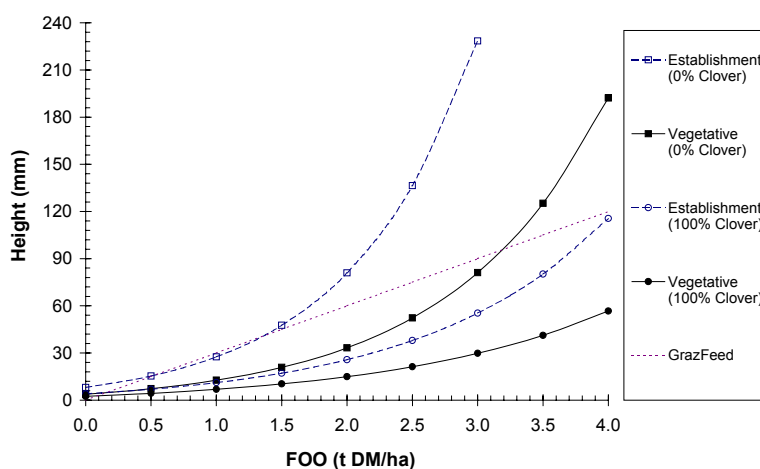
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Functions relating pasture mass and height to feed intake usually apply to relatively uniform, grass-dominant pastures with a significant perennial component. However, most pastures in south-western Australia contain a high proportion of subterranean clover which is likely to increase as grazing intensifies to improve pasture utilisation and increase profitability. Because of the prostrate nature of the clover, especially under grazing, the relationship between mass and height is likely to differ from that for grasses. In addition, the different morphology of pastures early in the establishment phase, compared with the later vegetative phase (vegetative), may also affect these relationships. Given the effect of pasture height on feed intake in the GrazFeed<sup>®</sup> feed budgeting program, there is a need to investigate the relationship between pasture mass, height and species dominance.

Pasture mass was maintained at target amounts of feed on offer (FOO; t DM/ha), as described by Hyder *et al.* (2004). On 3 occasions in 2002 (1 July – establishment; 19 August and 1 October - vegetative), and 2 occasions in 2003 (3 June and 30 June - establishment), estimates of FOO and composition (% clover, grass and broadleaf weeds) were made in quadrats at 30-45 positions along transects in each of 20 plots. The mean sward surface height (mm) was measured in each quadrat using a ruler.



**Figure 1. Relationship between feed on offer (FOO) and height for pastures comprising 0% or 100% clover during establishment or vegetative stages. Equations: Establishment: Height =  $\exp(2.40 + 1.01 \cdot \text{FOO} - 0.46 \cdot \text{Clover} - 0.30 \cdot \text{FOO} \cdot \text{Clover}) - 3$  ( $r^2 = 0.67$ ), Vegetative: Height =  $\exp(1.91 + 0.84 \cdot \text{FOO} - 0.22 \cdot \text{Clover} - 0.24 \cdot \text{FOO} \cdot \text{Clover}) - 3$  ( $r^2 = 0.76$ ).**

Regression analysis shows a curvilinear relationship (Figure 1) between pasture height and FOO that varies significantly ( $P < 0.001$ ) with clover composition and stage of development. Of particular importance is that lower heights are generally predicted for vegetative pasture up to about 3 t DM/ha than from the linear relationship (*viz.* 30 mm per t DM/ha) that is used in GrazFeed<sup>®</sup> to estimate the default height. Pasture heights above about 90 mm are unlikely to affect herbage intake, but the data indicate that, in this environment, this height is not reached in vegetative pastures until FOO lies between 3 and 5 t DM/ha, depending on the clover percentage. The more erect plants in the establishment stage reach this height between 2 and 3.5 t DM/ha.

HYDER, M.W., GORDON, D.J. and TANAKA, K. (2004). *Anim. Prod. Aust.* 25, (This proceedings).

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