

## THE PERFORMANCE OF YOUNG CATTLE GRAZING LUPIN STUBBLE

G.B. ROBERTS\*, P.A. KENNEY\* and G.H. SMITH\*

Lupin stubble can be valuable for sheep but there is a risk of lupinosis (Crocker et al. 1979). There seems to be a reduced risk of lupinosis with dry cattle (Roberts 1982) but less is known of the effect of grazing lupin stubble on their production. This experiment assessed the value of lupin stubble for fattening steers during summer in N.E. Victoria.

There were nine treatments: steers grazing mature annual pasture at 1.4 /ha or lupin stubble at 1.0, 1.5, 2.0, 3.0, 5.0, 6.5, 7.5 and 8.0 /ha. Forty yearling Hereford steers of 297 (SD 9.2) kg were allotted, using stratified randomization of liveweight, to the plots which they grazed for five weeks.

Measurements of available pasture, stubble and lupin grain were made at the beginning and end of the experiment. The animals were weighed weekly and carcasses at slaughter. Blood samples were taken at the end of weeks 1, 4 and 5 and assayed for serum enzyme gamma glutamyl transpeptidase -  $\gamma$  GT level.

Liveweight gain and carcass weight were directly related to initial available lupin grain per steer ( $P < 0.01$ , Fig. 1) and were inversely related to stocking rate ( $P < 0.05$ ).

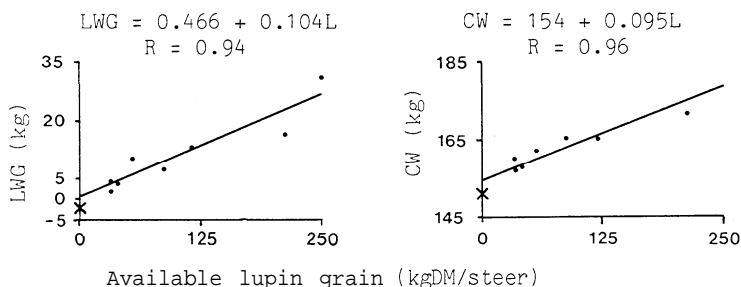


Figure 1 Effect of initial available lupin grain per steer (L) on liveweight gain (LWG) and carcass weight (CW) of steers grazing lupin stubble (•) compared to steers grazing mature annual pasture (x)

The steers on lupin stubble all gained weight up to the end of week 4. Those at 5/ha or greater then lost weight although the mean availability of stubble was still 2.3 tDM/ha at the end of week 5. The available lupin grain declined from 250 kgDM/ha initially to between 40 and 90 kgDM/ha at the high stocking rates and 100 to 130 kgDM/ha at the low stocking rates at the end of week 5. The mean performance of steers at pasture did not differ ( $P > 0.05$ ) to that predicted for lupin stubble with no grain (Fig. 1). The mean available pasture was 2.6 tDM/ha. High  $\gamma$  GT levels occurred only at the final sampling in 10 of the 16 steers at the higher stocking rates. There was mild liver damage in some of these instances. However, these factors were not related to liveweight change.

Clearly the cattle gained weight very well for the time of the year provided the available lupin grain did not decline below about 100 kgDM/ha. The cattle could also reduce the availability of lupin grain well below this level, but at the expense of weight gain. With greater utilization there was also a tendency towards lupinosis; presumably because the cattle were forced to eat more of the lupin stems where the toxin is mainly produced.

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\*Vic. Dept. of Agric., Rutherglen Research Institute, Rutherglen, Vic. 3685.