

## LIVE WEIGHT PRODUCTION OF SHEEP GRAZING DRYLAND PASTURES

Lincoln University's Dryland Pastures Research Team collected yield and botanical composition of six dryland pastures over nine years. Their findings are reported in fact sheet 106, 'Production and persistence of dryland pastures'. This fact sheet summarises the live weight (LW) produced in sheep grazing those pastures and recommends how production can be maximised.

### KEY MESSAGES

- Spring is the critical period for dryland farmers in regions exposed to summer/autumn droughts. About two thirds of annual live weight production from the grass pastures occurred in the spring period.
- To finish priority stock as 'prime' at weaning, cocksfoot pastures, containing sub clover as their main clover, with white as a secondary clover, are recommended to complement lucerne.
- When comparing animal production, total live weight gain/ha is a more accurate measure than live weight gain/head, because it takes into account inter-animal variation and changes in stocking rate.

### BACKGROUND INFORMATION

- Live weight was measured over eight years (Years 2-9), but not in Year 1.
- In Years 2-7 pastures were grazed by 11-35 ewe hoggets/ha in spring then replaced with 13-39 weaned lambs/ha.

- In Years 8 and 9 pastures were stocked at 7-13 ewes/ha, with twin lambs at foot, followed by weaned lambs.
- Stocking rates were altered to match feed supply and animal demand throughout grazing.
- Pastures were de-stocked when water stress or winter temperatures limited pasture growth and it fell below animal demand.

### LIVE WEIGHT PRODUCTION RESULTS

Total animal LW production from the experiment is summarised in the table below.

Table 1: Total live weight produced over 8 years (t LW/ha)

Pasture	LW production (t LW/ha)
Lucerne	7.9 <sup>a</sup>
Cocksfoot/sub clover	7.3 <sup>b</sup>
Cocksfoot/balansa	5.4 <sup>c</sup>
Cocksfoot/white	5.7 <sup>c</sup>
Cocksfoot/Caucasian	5.8 <sup>c</sup>
Ryegrass/white	5.8 <sup>c</sup>

Values followed by the same letter are not different

- In Years 2-7, under the hogget/weaned lamb system, there was 443 kg/ha (CF/Wc) to 1165 kg/ha (Luc) of live weight produced annually (see Figure 1).
- In Years 8 and 9, LW production per hectare ranged from 709 kg/ha (RG/Wc) to 1285 kg/ha (CF/Sub) for ewes with lambs in spring followed by the weaned lambs for the rest of the year.



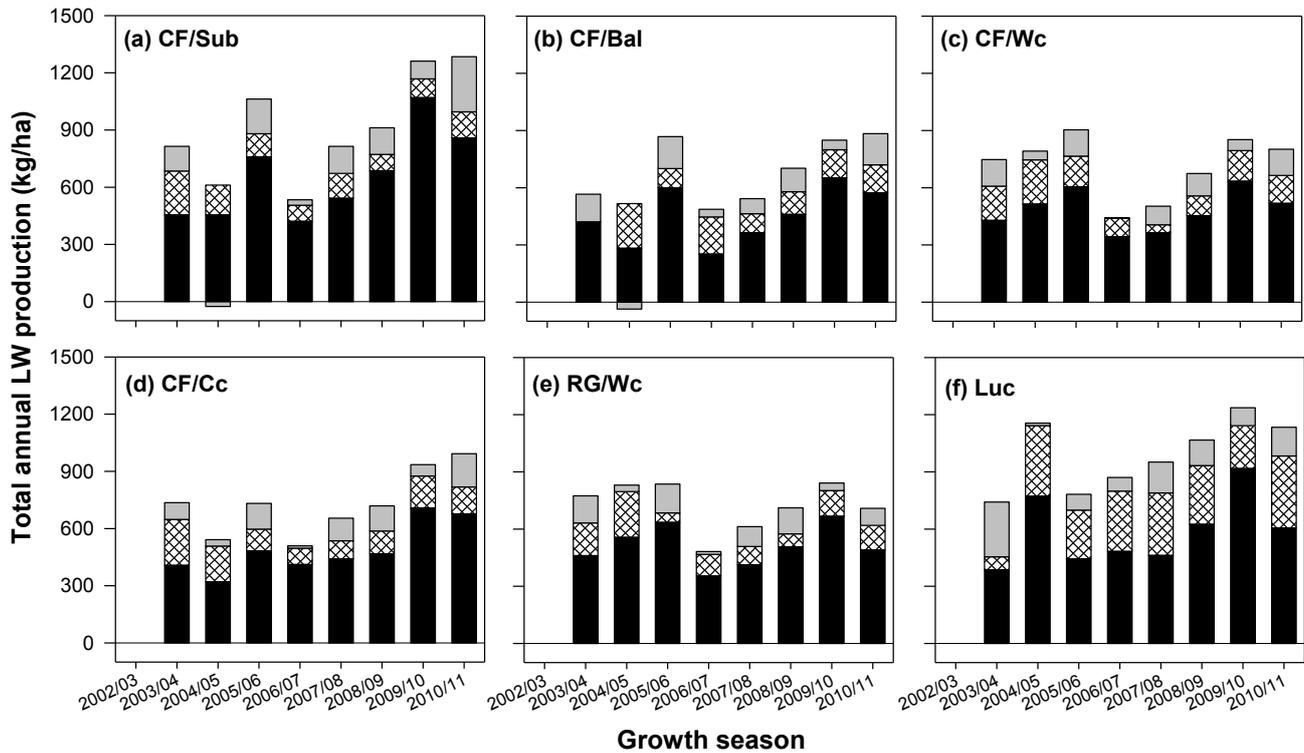


Figure 1: Total live weight production (kg/ha) from grazed dryland pastures in spring (■), summer (▨) autumn (■): (a) CF/Sub, (b) CF/Bal, (c) CF/Wc, (d) CF/Cc, (e) RG/Wc and (f) Luc.

## TIMING OF LIVE WEIGHT PRODUCTION

- Grass-based pastures produced 64 (CF/Bal) - 70% (RG/Wc) of their annual LW between late August and the end of November. Over the same period 59 - 67% of total annual dry matter yield was produced.
- Lucerne monocultures produced about 57% of annual LW in spring and a further 30% in the summer period. About 47% of annual lucerne dry matter yield was produced in spring, with a further 35% in summer.
- About 12% annual LW was produced between March and June for all pastures.
- Live weight gains per head of ewe hoggets and weaned lambs grazing lucerne averaged 51% (spring), 85% (summer) and 61% (autumn) faster than the stock grazing the grass-based pastures.
- In spring, the CF/Sub pastures had more grazing days per hectare, which meant spring LW production on CF/Sub was greater than, or similar to, lucerne in 7 out of 8 years.
- In Years 8 and 9, twin lambs at foot grew between 250 g (CF/Wc) and 350 g/head/day (RG/Wc) pre-weaning. In Year 9, when only about 10% of the originally sown pasture remained, RG/Wc lambs grew at 348 g/head/day. However, the RG/Wc pasture supported 35-50% fewer lambs than the other grass-based pastures which resulted in lower LW production per hectare.

## QUANTITY VS QUALITY

- In spring of Years 4-7 there were strong relationships between LW produced and total spring yield, which showed approximately 7.3 kg LW per 100 kg DM/ha.
- Because spring feed quality was high (ME > 11.0, CP > 17), the total quantity of feed was more important than the average quality (ME and CP) in explaining the differences in LW.

## MORE INFORMATION

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