**A pasture and crop sequence for intensive beef cattle production**

G.B. Robbins and K.B. Addison

"Brian Pastures" Pasture Research Station, Gayndah, Qld. 4625.

An intensive system of beef production at "Brian Pastures" Research Station, Gayndah, Queensland aims to produce "finished" cattle of 450 kg liveweight at 22 months of age. In the system, various pastures and crops are used in a forage sequence based on the results of past experiments.

Nitrogen - fertilized green panic pasture is grazed by 60 weaner crossbred steers from June to November (Scattini 1969). This pasture is grown with grain sorghum and Rongai lablab in a 10 - course ley rotation. Each year there are 5 x 5 ha green panic and 5 x 5 ha cropped paddocks varying in age from one to five years. From December to mid-April the steers graze native pasture with access to 6 ha of Peru leucaena as a protein supplement during March and April when native pasture quality is decreasing (Addison 1970). After harvesting sorghum for grain and lablab for hay the crop residues are grazed during late autumn. The steers are then "finished" on lablab chaff and milled sorghum grain fed in equal proportions (Hendricksen and Myles personal communication) for about 100 days.

**TABLE 1. Pasture and crop sequence; animal ages, and liveweight gains (LWG).**

| Period | Forage | Area (ha) | Animal age (months) | Average LWG (kg $hd^{-1}$) 1976/7 | 1977/8 | 1978/9 |
|---|---|---|---|---|---|---|
| Jun-Aug | Sown pasture | 25 | 8 - 11 | 22 | 24 | 29 |
| Sep-Nov | Sown pasture | | 11 - 14 | 51 | 16 | 61 |
| Dec-Feb | Native pasture (NP) | 60 | 14 - 17 | 48 | 65 | 48 |
| Mar-mid Apr | NP + leucaena | | 17 - 18 | 45 | 23 | 17 |
| mid Apr-May | Crop residues | 25 | 18 - 20 | 14 | 28 | 40 |
| Jun-Aug | Crop products | | 20 - 22 | 98 | 69 | 81 |
| Final liveweight (kg $hd^{-1}$) | | | | 453 | 384 | 453 |

From 1976 to 1978 animal production on green panic was affected by pasture age, with average gains on first year pastures 77% greater than on fifth year pastures. Measurements suggest animal production was limited by quality rather than quantity of available pastures. Low liveweight gains occurred in spring 1977 (Table 1) when rainfall was 32% below average.

Crop yields were variable. Yields of sorghum grain ranged from 105 t ha -1 and lablab hay from 107 t $ha^{-1}$ for the 1978 and 1979 harvests respectively.

Addison, K.B. (1970). Proc. XI Inter. Grassi. Congr. pp. 789.

Scattini, W.J. (1969). M. Agr. Sc. Thesis, University of Queensland.