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CATTLE GROWTH RATES ON BLACK SPEARGRASS COUNTRY: A CONTEMPORARY ASSESSMENT

M.F. Quirk[1], *V.L. Hansen*[1], *R.J. Wilson*[1] *and R. Tyler*[2]

[1] QDPI, Brian Pastures Research Station, Gayndah Qld 4625
[2] QDPI, Gayndah Qld 4625

ABSTRACT

Early measurements of cattle growth rates on native pasture in the black speargrass region indicated only modest potential for beef production (80 to 100 kg LWG/head/yr). To provide a contemporary assessment of animal production, we measured annual liveweight gains of Zebu-cross steers grazing ten commercial paddocks. Paddocks were selected to represent major land systems and weight gains of steers were recorded for up to 7 years. Average annual liveweight gain varied from 116 kg/hd on metamorphic rolling hills to 167 kg/hd on andesitic rises and floodplains, all much higher than earlier reports would suggest. Also, there was large variation between and within land systems, so generalisations about regional productivity should be viewed with caution.

INTRODUCTION

The southern black speargrass region of Queensland (subtropical tallgrass: Tothill and Gillies (1992)) is typically eucalyptus woodland or open forest with a herbaceous understorey in which black speargrass (*Heteropogon contortus*) is prominent. Historically, native pastures in this region have been viewed as having only modest potential for beef production (Alexander and Beattie 1968, Shaw and 't Mannetje 1970), with most reports indicating that speargrass country could support only 80 to 100 kg/head of annual liveweight gain (ALWG) at stocking rates of 3 to 6 ha per beast. As a result, the dominant research paradigm was the replacement or augmentation of these pastures with exotic legumes and grasses. However, most cattle within the region are still grazed on native pastures. Anecdotal reports, data from on-property trials and examination of turn-off ages and weights indicated that native pastures in the region could support cattle growth rates much higher than those traditionally expected. To present a clearer picture of contemporary cattle growth rates we measured the annual liveweight gains of steers grazing commercial paddocks on the major land systems of the inland Burnett, which is centrally located within the southern speargrass region.

MATERIALS AND METHODS

We present preliminary results for ten paddocks, these being representative of three major Land Resource Areas (LRAs) of the inland Burnett (Maher 1993). At each paddock, the ALWG of consecutive drafts of steers (20-100 hd per draft) was measured for up to 7 years. Soil (land unit) maps (1:15,000) were prepared for each paddock through a combination of field survey and photo-interpretation. Vegetation measurements on each land unit were also collected but are not considered here. Daily rainfall records were collected from sites usually within 2 km of the respective paddocks.

RESULTS

Mean ALWG for paddocks varied from 116 kg/hd, on a paddock of rolling low metamorphic hills, to 167 kg/hd on a paddock with a combination of undulating andesitic rises and floodplains. As expected, there was large variation in ALWG between years within a site, with the standard error for paddock means varying between 10 and 20 kg. When data is aggregated to land resource areas (Table 1), estimates of 'typical' ALWG vary from 118 kg/head on upland sediments to 139 kg/head on volcanic uplands. However, there was relatively large variation among sites within the granite hill and volcanic upland LRAs.

Table 1. Annual liveweight gains and stocking rates for three land resource areas of the inland Burnett.

Land Resource Area (typical soils)	Number of paddocks	No. of site-year data points	Range of stocking rates (ha/steer)	Mean ALWG (kg/head); (range across sites)
Upland sediments (solodics, lithosols)	3	19	4 - 7	118 (116-121)
Granite hills (sands, lithosols, podzolics)	3	15	4 - 5	136 (121-151)
Volcanic uplands (clays, solodics, lithosols)	4	26	3 - 5	139 (121-167)

From 1985 to 1995, summer rainfall in each year was either below average or close to average across the region. Winter rainfall was more variable, with about half the years below average and half above average.

DISCUSSION

Contemporary growth rates of cattle on these black speargrass lands are clearly much higher than those reported from earlier studies. Further, there is large variation between land types, even within LRA mapping units, such that generalisations about regional productivity should be viewed with caution. Our data confirm anecdotal evidence and perceptions of producers regarding the potential of various land types to grow or finish cattle. Our findings also question the advantages of pasture replacement or augmentation on the more inherently productive land types: possible advantages to individual animal performance may have been overstated in the past.

What is behind the discrepancy between our data and earlier assessments of animal production? Several factors may be involved, probably acting together. For example, in our study, there was: (1) exclusive use of adapted Zebu-cross cattle (most earlier studies used British breeds), (2) more favourable rainfall patterns for pasture quality (less in total but better distribution), and (3) higher potential ALWG because cattle grazed larger, more heterogeneous paddocks than those used in most earlier studies. We conclude that a commitment to monitoring of animal (and pasture) productivity within the context of commercial practice is important for successful research and development programs.

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