WEANER SUPPLEMENTATION AND MANAGEMENT IN THE VICTORIA RIVER DISTRICT OF THE NORTHERN TERRITORY

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SUMMARY

Two groups of Droughtmaster Brahman/Shorthorn cross calves (minimum liveweight 95 kg) were weaned in June 19816 (mid dry season) at the Victoria River Research Station (Kidman Springs), N.T. The average liveweight of both groups was 152 kg.These animals were run in spelled native pasture paddocks with one group given access to Ultrapro 40@, a complete supplement block based on molasses, lupins and urea. Supplementation continued until the onset of the wet season (January 1987). All animals were then put together in one paddock without any supplement. Liveweight and condition scores were recorded at monthly intervals during the supplementation period and also in April and June 1987. During the supplementation period the treated animals gained 133 g/hd/day compared with the control group gain of 30 g/hd/day (P<O.OI). The supplemented group had a 23 kg average liveweight advantage over the control group after the 6 months of supplementation (178 cf. 155 kg). This difference had been reduced to 11 kg (233 cf. 222 kg) by June 1987 after a further 6 months without supplementation. Keywords: weaners, supplementation, management .

INTRODUCTION

Survival of young cattle in the (dry season can be a major problem on pastoral properties in the Northern Territory. McCosker et al (1984) at Mt. Bundey, N.T., reported an average death rate of 28% among Brahman cross weaners running on native pastures with introduced legumes and access to NPN supplement blocks. Death rates were found to be related to weaning weight. Unpublished data of D. J. Robertson reported weaned animals on average, were some 19 kg lighter than their unweaned counterparts at turnoff age (3½ - 4 y.o.). Weaned animals lost more weight during their first dry season and gained at a slower rate during the following wet compared with unweaned animals. Although some compensation was apparent in subsequent years the weaned animals were still significantly lighter at turnoff age.

The use of supplements for weaners may be one way of overcoming any setback due to weaning. This is particularly so in Northern Australia where the native pastures provide inadequate nutrition for stock for the greater part of the year.

Research on young cattle has shown that good responses to supplements on native pastures can be achieved. Holm et al. (1981) found significant responses to dry season urea supplementation and year round phosphorus supplements at Fitzroy Crossing, W.A.. Winter (1987) using salt, pasture burning and a urea and mineral supplement reported annual weight gains of 135 kg with steers at Manbulloo, N.T.

Despite these results, supplementation of weaners is not widely practiced in the northern part of the N.T. This is possibly due to uncertainty on the part of producers regarding the economics of supplementation.

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This situation is apparent in the Victoria River District where some pastoralists who have practiced weaning on a large scale have had significant losses due to poor performance of weaners during the late dry season.

This paper reports a weaner supplementation trial carried out to investigate the response of weaners to a supplement in the Victoria River District and the implications for weaner management.

MATERIALS AND METHODS

The trial was carried out at the Victoria River Research Station (Kidman Springs), 220 km south west of Katherine. The station is in the semi-arid tropics and has a mean annual rainfall of 700 mm falling mainly from November to April. There are two main soil types on Kidman Springs viz a cracking clay soil (Ug 5.22) and red calcareous soils (Gc 1.22)(Northcott 1971). The clay soils are dominated by ribbon grass (Chrysopogon fallax) and Flinders grass (Iseilema fragile). Shrubs and trees include conkerberry (Carissa lanceolata), bauhinia (Lysiphyilum cunninghamii) and rosewood (Terminalia volucris) (Foran et al. 1985). The red soils are dominated by limestone grass (Enneapogon spp.) and bunch spear grass (Heteropogon contortus). The main tree species are silver leaf box (Eucalyptus pruinosa), bloodwood (E. terminalis) and conkerberry.

Droughtmaster Brahman/Shorthorn cross calves were weaned (liveweight≧95 kg) in June 1986. They were branded, ear tagged, vaccinated for Botulism, earmarked, castrated and dipped. The animals were then handled for three days before being placed into their respective paddocks. The two paddocks used contained native pasture with both red and black (clay) soils, and had been spelled the previous wet season. Rainfall during this wet season was 505 mm and in the following season was 480 mm. The animals grazed these paddocks at a rate of 1 beast:10 ha approximately. The two treatment groups, supplemented (n=85) and unsupplemented (n=106), ran in different paddocks with monthly rotations.

The supplemented group were allowed ad lib. access to Ultrapro 40® from the second week of July. This lick block is composed of molasses 30%, lupins 31% and urea 11% (42% maximum crude protein) and a complete range of minerals. The lupins were formaldehyde treated to minimise rumen degradation of the protein. Consumption was measured by weighing the blocks twice weekly. Excessive consumption of the blocks in October 1986 to levels exceeding 400g/hd/day forced rationing to be introduced to limit consumption to 150g/hd/day for the remainder of the feeding period.

Fasted liveweights and condition scores were recorded at the beginning and end of the feeding period and at each monthly rotation. Supplementation ceased at the onset of the wet season (mid January 1987) when the animals were combined into one group and confined to a single paddock. Data were recorded in April and June 1987 to monitor performance post supplementation.

Liveweights and average daily gains were analysed for treatment effects by analysis of variance. There were no differences due to sex.

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RESULTS

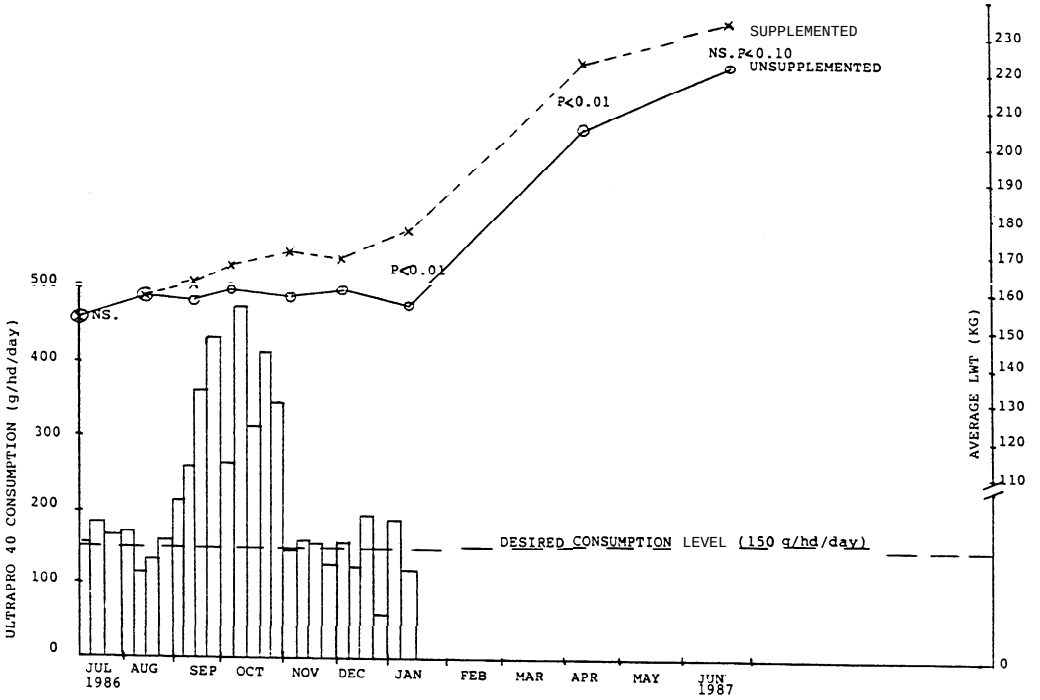

FIGURE 1. LIVEWEIGHT AND SUPPLEMENT CONSUMPTION OVER TIME OF WEANERS AT VICTORIA RIVER RESEARCH STATION.

Live weights of both the supplemented and unsupplemented groups, including significance levels, are shown in Fig. 1. Weekly consumption of the supplement is also shown. The supplemented animals accepted the blocks readily and intake was satisfactory throughout the supplementation period.

Supplemented weaners had higher rates of gain over the feeding period (133 *v 30* g/day; P<0.01). The unsupplemented animals compensated during the following wet season *(435 v 350* g/day; P<0.01) but over the whole year from June 1986 to June 1987 the supplemented animals had higher average daily gains (228 v 209 g/day; P<0.01). There were no differences between steers and heifers, and sex did not interact with the effects of supplementation. Only one death occurred during the time of the trial. This was thought to be due to infection or blood loss from castration.

DISCUSSION

Despite the below average rainfall the previous wet season, the performance of the control group was marginally better than similar animals recorded in previous years at Kidman Springs, which lost weight from weaning to the onset of the wet season (D. J. Robertson unpublished). The lighter season may have benefitted the weaners by limiting growth and maintaining better nutritive value in the pasture. The supplemented group performed as well as unweaned calves recorded by D. J. Robertson (unpublished). After supplementation had ceased the control group gained weight at a higher rate than the supplemented group.

In his comparison of weaned and unweaned animals D. J. Robertson (unpublished) found no compensation and unweaned calves continued to grow at a faster rate than their weaned counterparts. This would indicate the need for supplementation to continue into the wet season if a growth rate advantage is to be maintained in supplemented animals.

The cost of the supplement over the feeding period averaged $18/head. At the time of writing the value of weaner class animals was quoted as 85¢/kg liveweight (Oliver 1987). With a liveweight advantage of *23* kg this would just cover costs. The compensatory gain of the control group however, reduced the liveweight advantage to 11 kg after 6 months post supplementation. Current values indicate a 5% saving in deaths would be needed to cover the cost after the compensatory gain. This may make supplementation of weaners less attractive to producers given the maintainance of liveweight during the dry season and absence of deaths due to malnutrition of the control group in this study.

The performance of the control group may indicate some merit in the practice of wet season spelling of paddocks for weaners in the Victoria River District. It may also help alleviate some concern regarding the relative merits of weaning. The high death rates and weight losses in weaners reported by McCosker et al. (1984) at Mt. Bundey are problems which may face producers in the Top End of the N.T., however given adequate seasonal and paddock conditions this should not be as severe in the Victoria River District.

Overall this study has demonstrated that weaners on native pastures in the Victoria River District of the N.T. will respond well to a supplement in their first dry season. It has also demonstrated that with adequate pasture conditions weaners may survive and maintain liveweight without supplementation and exhibit compensatory gains during the following wet season.

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