OBSERVATIONS ON POST WEANING PERFORMANCE OF BRAHMAN CROSS ANIMALS IN THE DARWIN DISTRICT OF THE NORTHERN TERRITORY

T.H. McCOSKER*, A.R. EGGINGTON** and F.W. DOYLE***

SUMMARY

Only 36% of the properties surveyed in 1982 in the Darwin, Elsey and Gulf districts of the Northern Territory practised some weaning. Less than 10% of these weaned greater than 90% of total brandings. The increase in cattle control as a result of disease eradication programmes is, however, bringing about a change of attitude towards weaning. This paper reports on two major problems associated with weaning on Mount Bundey Station which, if widely experienced and not countered, will no doubt set back weaning as a husbandry practice in the Top End.

Losses from three weaner drafts were 32%, 24% and 31%, and averaged 28% over 923 animals. Losses were strongly related to weaning weight below 150 kg. Weaning above 150 kg reduced losses from 33% to 18% and absolute mortality to an estimated 8% to 13%. Growth rate in the year subsequent to weaning was less than half that of 2 year old animals, thereby delaying heifer mating and steer turnoff by one year. Inadequate nutrition is thought to be the primary cause of both effects, with dingoes and disease probably being secondary causes of death due to weak condition.

INTRODUCTION

Weaning in the northern pastoral districts of the Northern Territory is generally increasing. In the Darwin district in 1979 approximately 20% of properties attempted some weaning (B.D. Ford, pers.comm.), whereas in a 1982 survey Ford et al (in press) found that 50% of pastoral leases were attempting some weaning. In the Elsey and Gulf district weaning attempts were made on 44% of properties in 1977 (Michelle 1978), 24% of properties in 1979 (Michelle and Stockwell 1982) and 31% of properties in 1982 (Michelle, in press). In the Victoria River District some weaning was practised on 64% of properties surveyed in 1977 (Robertson and Hill 1978), 63% of properties in 1979 (Robertson 1980) and 74% of properties in 1982 (Robertson, in press). Holt and Bertram (1981) reported that 95% of Barkly Tableland properties were doing some weaning in 1980. The proportions of branded calves weaned varied widely between properties in these surveys.

Only two experiments have been reported on weaning in the extensive beef industry of north Australia and both were done in Queensland (Arthur and Mayer 1975; Boorman 1981). Both strongly recommended early weaning (5 months for Arthur and Mayer and 3-5 months for Boorman) for its effects on breeder survival and subsequent increase in branding rates of 14-15%. Arthur and Mayer (1975) found no substantial mortality for weaning weights down to 114 kg on Mitchell/Flinders grass country. Boorman (1981) on poorer Tropical Tallgrass country recommended feeding early weaners with a molasses/meatmeal mixture.

On Mount Bundey Station in the Darwin district of the Northern Territory two major post weaning problems have been identified. These are high mortality and low growth rates in the year subsequent to weaning. This paper outlines the extent of these problems.

* W. R. Grace, Mount Bundey Station, Adelaide River, N.T.
** N.T.D.P.P., Mount Bundey Station, Adelaide River, N.T.
*** Camp Creek Station, Batchelor, N.T.

important than nutrition in lighter weaners.

Sex appeared to have no effect on weaner mortality. In both weanings followed by 5 months dry season, the males had higher (39% in July 1980 and 28% in April 1981) losses than females (28% and 19% respectively). The September 1981 group, however, lost more females (37%) than males (29%). Overall no significant difference between the sexes was observed.

It is important to note that these data apply to high grade Brahman weaners in the 5-7 month age bracket. The experience of other research groups (Arthur and Mayer 1975; D.J. Robertson, pers.comm.; Winks et al 1978) indicates that on better country Shorthorn and lower grade Brahman cross animals can adequately survive lower weaning weights than shown here. The reason for this may be twofold. Firstly, the better nutrition available at the other sites is probably the major reason. Secondly, the Brahmans are heavier on a weight for age basis and a heavier minimum weaning weight would therefore mean a similar aged calf.

The losses reported here are somewhat startling and an outline of probable causes is warranted. Firstly, clean musters were not achieved. Secondly, there is no doubt that dingoes were a major cause of loss. Rankine and Donaldson (1968) also found that dingoes appeared to be the main cause of neonatal loss in calves on a north Queensland property. Loss from dingo attack, however, may have been the secondary cause on Mount Bundey as dingoes are more likely to attack light animals already weakened by malnutrition or disease. Normal internal parasite burdens were below clinical levels in the July 1980 group (Eggington et al 1984). Recent discoveries of coccidiosis in weaners at Swans Lagoon (Parker et al, in press) also indicate an avenue requiring local investigation as post weaning diarrhoea was observed in all groups.

Poor Growth

TABLE 2 Annual weights and weight changes

Group	Dates (month/year)	Initial Weight (kg)	Weight Change (kg)
July 1980	7/80 to 5/81	143	62
April 1981	4/81 to 4/82	151	47
September 1981	9/81 to 4/82	144	34
Poor Nutrition 1980 non-weaned	6/80 to 4/81	131	58
Good Nutrition 1980 non-weaned	6/80 to 4/81	131	128
1978 Steers (2 y.o.)	11/79 to 7/80	149	121
1980 Steers (2 y.o.)	5/81 to 4/82	178	130

Table 2 shows that the weaning to end of wet season liveweight change of the three groups was less than half that of two year old steers. This indicates that yearlings did not compensate for either low weaning weight or dry season weight loss. This is at variance with the results of Arthur and Mayer (1975) who found that early weaned calves (5 months) compensated in the following wet season to reach yearling weights similar to late weaned calves (8-9 months).

MATERIALS AND METHODS

The performance of three separate weaner groups was followed until April or May of the year subsequent to weaning. The weaners were high grade Brahman cross cattle and each group averaged 5 to 7 months of age at weaning. All groups came from the same paddocks of origin. The groups were identified by their weaning dates which were July 1980 (n=376), April 1981 (n=387) and September 1981 (n=160).

The animals were branded and drenched, individually tagged, weighed and sexed and the males castrated at time of weaning. Following a period of yarding and handling, they were run on native pasture with access to NPN lick blocks and the legumes Stylosanthes humilis and Calopogonium mucunoides. The July 1980 group was run with a beast area of 2.6 ha, while the two 1981 groups had access to approx. 15 ha per beast. Dingoes were prevalent in both years and were baited. Due to the extensive nature of the operation, 'losses quoted are not absolute and must be put in the context of 90-95% mustering efficiency.

RESULTS AND DISCUSSION

Mortality

Losses were very high, being 32%, 24% and 31% for the July '80, April '81 and September '81 groups respectively. The mean loss for the three groups was 28% over 923 animals. Weaning weight was shown to be a major factor in these losses (see Table 1).

TABLE 1 The relationship between weaning weight and subsequent losses

Weaning Weight (kg)	July 1980		April 1981		Sept. 1981		Total	
	No.	% Lost	No.	% Lost	No.	% Lost	No.	% Lost
<110	39	82	-	-	21	76	60	80
110 to 129	88	42	19	64	40	43	147	45
130 to 149	147	23	182	24	45	22	374	21
<150	274	38	201	44	106	41	581	33
150 to 169	77	18	130	18	29	10	236	17
170 to 189	23	13	47	23	18	11	88	18
>190	2	50	9	22	7	29	18	28
>150	102	18	186	19	54	13	342	18
TOTAL	376	32	387	24	160	31	923	28
Length of Dry Season	5 months		5 months		0.5 months			

Table 1 indicates the trend was similar for the three drafts irrespective of stocking rate, season or weaning time. The mean loss from 581 animals weaned below 150 kg was 33% compared to a loss of 18% for the 342 animals weaned above 150 kg. The data therefore suggest that weaner losses could be substantially reduced by not weaning below 150 kg.

Both the July 1980 and April 1981 groups had a five month dry season following weaning. The September 1981 group, hoever, was weaned only two weeks before the onset of the wet season. Table 1 shows that the length of the dry season had no effect on losses in the lighter weaners (<150 kg). Losses, however, were less in the heavier animals (>150 kg) weaned just prior to the onset of the wet season. Improved nutrition would therefore be a factor in reducing mortality of weaners over 150 kg. Other factors, such as disease or predators, were apparently more

The yearling data are also at variance with those of Winks et al (1978) who found little difference between weaning to yearling and yearling to two year old growth rates. Two year old growth rates in that study were similar to those in Table 2. The major economic effect of such poor growth rates in yearlings is to delay turnoff and heifer mating by one year.

The weight changes of two small but comparable non-weaned 1980 groups are also shown in Table 2. The poor nutrition group, which received an NPN + mineral supplement late in the 1980 dry season, did not show any weight advantages over the weaned group. The good nutrition group, which was supplemented with NPN + minerals throughout the year, gained at a similar rate to 2 year old steers. These data, although limited, indicate that only non-weaned animals on good nutrition display a growth rate advantage and further indicate the role of nutrition in calf performance.

CONCLUSIONS

Poor nutrition relative to other districts is thought to be the primary cause of both problems. This is despite the availability of legume based pasture and NPN and mineral supplements. Cattle thus weakened are more likely to be affected by disease and/or predators, which are thought to be the actual cause of death. However, some disease factor which currently remains unidentified cannot be discounted. Weaning above 150 kg is expected to reduce actual mortality to 8-13%, after taking the mustering efficiency into account.

If the recent surge of interest in weaning is to maintain impetus or expand, then the problems of weaner nutrition must be addressed. The need for research is urgent as the majority of managers who are beginning to wean are only doing so on a minority of their brandings. If the problems outlined above are widespread on poor country, then weaning will regress as a management practice before the advantages to reproduction begin to show. An inability to wean below 150 kg is also likely to dilute the reproduction effects.

We would suggest that the relative roles of NPN, rumen stimulating energy and bypass protein in weaner nutrition require investigation with particular reference to the extremely low native and improved pasture dry matter digestibilities common to the area.

REFERENCES

ARTHUR, B.A. and MAYER, B.G. (1975). Qld.Ag.J. 101 (2) : 216
BOORMAN, J. (1981). Cattlemen's Union and QDPI Beef Cattle Husbandry Information Leaflet.
EGGINGTON, A.R., McCOSKER, T.H. and BAINBRIDGE, M.H. (1984). Proc.Aust.Soc.Anim. Prod. 15:
FORD, B.D., WESLEY-SMITH, R.N., LEMCKE, B.G. and AUSTIN, J.D. (In Press). NTDPP Tech.Bull.
HOLT, R.M. and BERTRAM, J.D. (1981). NTDPP Tech.Bull. No.41.
MICHELLE, V.J. (1978). NTDPP Tech.Bull.
MICHELLE, V.J. and STOCKWELL, T. (1982). NTDPP Tech.Bull. No.52.
MICHELLE, V.J. (1984). NTDPP Tech.Bull. (In press).
PARKER, R.J., BOOTHBY, K., POLKINGHORNE, I. and HOLROYD, R.G. (In Press). Aust.Vet. J.
RANKINE, Mrs.Glen and DONALDSON, L.E. (1968). Proc.Aust.Soc.Anim.Prod. 7:138.
ROBERTSON, D.J. and HILL, B.A. (1978). General Report, AIAB. Northern Territory.
ROBERTSON, D.J. (1980). NTDPP Tech.Bull. No.35
ROBERTSON, J.A. (1983). NTDPP Tech.Bull.
WINKS, L., O'ROURKE, P.K. and SMITH, P.C. (1978). Aust.J.Exp.Ag.Anim. Husb. 18:500.