

ASSESSING THE SURVIVAL RISK OF COWS PRIOR TO DROUGHT

R. TYLER*¶ and G. FORDYCE*

Average annual death rates of 2-15% for beef cows are reported by beef cattle advisors in the dry tropics of north Queensland. Computer modelling shows that reduction of cow deaths is often the most critical strategy for improving the profitability of beef herds in this region. We report a study of cow losses experienced on one north Queensland property in the severe drought of 1982/83 and the factors which influenced losses.

A herd of 802 Brahman cross cows aged 3-11 years were used. Each year, mating was over the first 5-6 months. In July/August, stage of pregnancy, lactation status and condition of cows were assessed. The first deaths occurred in late October 1982 with a severe decline in pasture quality. Supplementary feeding of ad lib. molasses with 9% w/w meatmeal commenced in early November and continued until mid-January when the drought broke. Rainfall of 290mm in 1982 was well below the 877mm, 21-year average.

The 21% loss was typical of losses on similar properties in north Queensland in the 1982/83 drought. An analysis of variance showed that age, pregnancy status and body condition each influenced survival ($P < 0.05$). Cows older than seven years had a greatly diminished probability of survival (prob.=0.70 and 0.52 for 5 to 7- and 10 to 11-year-old cows respectively), probably due to deteriorating dentition. A matrix showing the least squares means for the probability of survival of three- to seven-year-old cows as a function of stage of pregnancy and body condition is given in Table 1. If the diagonal shown is moved to the left or right, survival probability of any group of cows to its left is never greater than that of cow groups to its right. More advanced stages of pregnancy impose greater energy demands, and therefore a greater survival risk.

Table 1. Condition and pregnancy effects on drought survival probability of cows

Pregnancy status	V.Poor	Pre-drought condition score (August 1982)				
		Poor	Bwd.Store	Store	Fwd.Store	Prime
Non-pregnant	0.45	0.50	0.69	0.79	0.87	0.99
Early pregnancy	0.36	0.41	0.61	0.70	0.79	0.90
Mid-pregnancy	0.23	0.28	0.47	0.57	0.65	0.77
Late pregnancy	0.10	0.14	0.34	0.44	0.52	0.64

The results allow objective assessment of the relative survival risk of *Bos indicus* cross cows in drought. North Queensland cattlemen have appreciated that age, pregnancy and condition have an effect on survival, but the relative importance of each has not clearly been understood. In drought management we recommend culling of aged cows, and that cows be drafted according to survival risk using the guidelines shown in Table 1. In the herd studied, drafting off 60% of the highest-risk cows for supplementation 50 days earlier may have saved over 100 cows at a cost of approximately a quarter of their value.

* Qld Dept Primary Industries, Swan's Lagoon, Millaroo, Via Ayr, Qld., 4807

¶ Present address: Qld Dept Primary Industries, GPO Box 48, Gayndah, Qld., 4625