

Observations on Bali Cattle (*Bos sondaicus*) Reproduction in Timor-Lesté

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Improving beef cattle productivity in Timor-Lesté will potentially increase rural income and overall economic growth (Rio, 2001). The aim of this study was to obtain basic information on the reproductive performance of Bali Cattle in Timor-Lesté. Rainfall data for this study was obtained from the Defence Meteorological Support Unit, (2000), while cattle data were obtained during 2008 (May to August) from a survey of 60 animals from each of 11 villages in Lautem and Ambeno districts (total 1,320 cattle. Reproductive data were obtained by direct observation of the cattle and interviews with the cattle owners (77 in Lautem and 65 in Ambeno). Results are described below and presented in Table 1. The data collected was a “snapshot” at the time of observation, but retrospective data was also collected.

In Lautem District, farmers owned an average of 11.0 cattle, with a range from 2 to 65 head, while in the Ambeno District, the average herd size was 23.9 head with a range from 3 to 560 head. Less than half as many animals under 1 year of age were observed in Lautem compared to Ambeno (10.5% vs 22.8%). There are a large percentage of cows over 4 years of age (36.8% in Lautem and 45.5% in Ambeno). There were significantly less males in Lautem than in Ambeno (26.9% vs 36.0%, $p < 0.001$), and there were nearly half as many older males (over 4 years) in Lautem compared to Ambeno (11.9% vs 20%). The percentages of cows that calved over the age of 3 years were 22.1% and 58% for Lautem and Ambeno respectively. Individual data was collected on 851 cows of breeding age (396 in Lautem, and 455 Ambeno). A total of 421 calves were born to these cows, reflecting an overall calving rate of 48.90% (40.6% in Lautem and 57.1% in Ambeno).

Table 1. Rainfall, month of calving and conception for the districts of Lautem and Ambeno, Timor-Lesté

District	Lautem (n=660)			Ambeno (n=575)		
Month	Rainfall (mm/month)	% cows Conceiving *	% cows Calving	Rainfall (mm/month)	% cows conceiving *	% cows calving
January	228	3.3	19.4	295	3.8	3.7
February	182	3.9	10.3	275	3.0	7.3
March	194	3.5	8.6	181	1.7	8.9
April	207	19.4	8.9	45	3.7	19.1
May	305	10.3	12.0	36	7.3	16.2
June	264	8.6	13.5	10	8.9	12.9
July	126	8.9	7.3	11	19.1	11.0
August	34	12.0	5.8	7	16.2	7.7
September	36	13.5	3.5	2	12.9	4.9
October	25	7.3	3.3	28	11.0	3.8
November	91	5.8	3.9	62	7.7	3.0
December	214	3.5	3.5	131	4.9	1.7
Total	1906	100.0	100.0	1083	100.0	100.0

* Month of conception based on a gestation period of 9 month.

The low calving rate observed probably reflects a combination of birth rate and calf mortality rate since the “snapshot” was taken early in the calving season, and included calves “at foot” that had survived from the previous season. Reproduction in Ambeno may be constrained by calves being born during the dry season. The month of conception in Ambeno appears to be related to rainfall. The drier season conditions in Ambeno compared to Lautem delay the first calving, reducing lifetime productivity. Reproductive efficiency may be improved by culling older cows.

Defence Meteorological Support Unit, Australian Bureau of Meteorology (2000) .

Rio N (2001) The status of the East Timor agricultural sector 1999, Chr. Michelson Institute, Working paper 7, pp.1-38.

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