

Post Weaning Effects of Supplementing Bali Cattle (*Bos Sondaicus*) Calves Prior to Weaning in Villages of West Timor, Indonesia

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The high mortality and slow growth rate of Bali Cattle (*Bos sondaicus*) can be alleviated through supplementation during the dry season, in their first 6 months of life, as described by Jelantik *et al* 2008).

The aims of this experiment were to determine the appropriate level of supplementation required, and to measure to what extent the advantage of supplementation remained after it ceased.

The calves described in this experiment are a subset of the calves reported on by Jelantik *et al* (2008), with observations being extended into the following wet season. The experiment was conducted for a period of 280 days (148 days dry season, 132 days wet season) between July 2007 and April 2008, and involved 249 Bali calf-cow pairs recruited from the Kupang District, West Timor, Indonesia. The calves were born during the dry season between May and August 2007. The selected calves were randomly allotted into four treatment groups that were supplemented at 0% (controls), 1%, 2%, and 3% of their body weight. Supplementation ceased in December when there was sufficient fodder from the summer rains. Calves were weighed every 2 weeks to measure daily live weight gain (LWG). Only LWG data were analysed using SAS (SAS Institute, 2000) software. Results are presented in Table 1.

Table 1. Live weight gain (LWG) of Bali Cattle calves during the wet season (December – April) following dry season (July – November) supplementation at 0% (control), 1%, 2%, or 3% of the calf's body weight

	Level of supplementation (% body weight)				SEM	p
	0% (control)	1%	2%	3%		
Number of calves	58	95	55	41		
Estimated birth weight (kg)	13.0	13.0	13.0	13.0		
LWG in the dry season (g/d)	68 ^a	100 ^b	151 ^c	183 ^c	0.82	0.001
Cumulative LWG (kg) in dry season	10.1	14.7	22.3	27.1		
Estimated live weight at end of dry season (kg)	23.1	27.7	35.3	40.1		
LWG in the wet season (g/d)	71 ^a	228 ^c	115 ^b	191.4 ^c	0.63	0.001
Cumulative LWG (kg) in wet season	9.3	30.1	15.2	25.3		
Estimated live weight (kg) at the end of the wet season	32.4	57.9	50.4	65.4		

Within rows, values followed by different superscript letters are significantly different ($P < 0.05$)

The results reported in this paper indicate that the advantage of supplementing calves in their first 6 months is maintained for at least 4 months after supplementation ceased and there was no evidence of compensatory growth. Indeed, the cumulative weight advantages of supplementation during the dry season of 4.6kg, 12.2kg and 17.0kg increased in the following wet season to 25.5kg, 18.0kg, and 33kg for the calves supplemented at 1%, 2%, and 3% of body weight respectively. These results suggest that the advantage of supplementing calves in the first 6 months is retained into the second year, resulting in a larger adult body size and younger first calving. These results indicate that supplementation at 1% calf body weight is ideal. However, supplementation at 2% calf body weight is the recommended level since supplementation at 1% calf body weight did not reduce calf mortality below control levels, while supplementation at 2% reduced calf mortality to less than 1% (Jelantik *et al* 2008) and improved growth rate adequately. This research was funded by The Australian Centre for International Agricultural Research, project LPS/2006/005.

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