

Timing and variation of supplement intake by breeding cows in the extensive rangelands of northern Australia

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Supplementation of rangeland cattle with loose-licks or lick-blocks providing urea in the dry season and phosphorus during the rainy season (Louw 1979) has become foundational to successful cattle breeding in northern Australia. Little is known of the between-animal variation in supplement intake in a commercial environment or associated differences in animal performance. As an initial step in study of supplement responses in northern Australia, the between animal variation in supplement intake and the diurnal variation in accessing supplement were evaluated.

A herd of over 305 breeding cows was provided with lick blocks throughout the dry season of 2019 and their access to blocks was remotely monitored over the latter part of the dry season (11/08/19 – 11/11/2019). Cattle could only access water at 2 points in the 7615 ha paddock of sandy forest in Queensland's southern gulf, and at each water point, lick block stations provided urea blocks (U: 40% urea), Sulphur blocks (S: 12%S) and Phosphorus blocks (P: 12%P). Blocks of each type weighing 40 or 100kg were placed on the weighing platforms (Simanungkalit *et al.* 2020) which allowed the presence of animals at the blocks to be detected by one of 4 aerials above the blocks, which could energise the RFID ear tag of cows accessing the lick block. At each water point there were 3 platforms providing U, 1 platform providing S, 1 platform providing P and either 1 or 2 platforms providing U + 1.25% 25OHD (Hy-D®). All block weighers were calibrated with 400 kg load at commencement and all block attendance data was automatically time-stamped and relayed via the internet to a central database. While data are considered for 305 cattle, a small number of cattle without RFID tags were likely to also be present in the paddock.

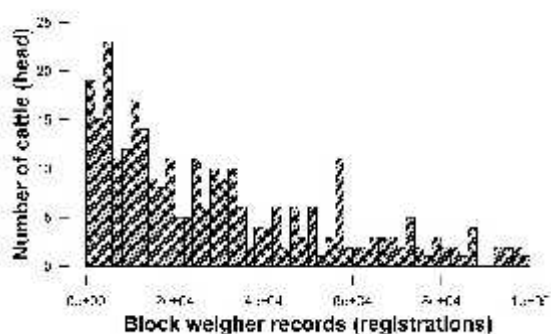


Figure 1. Frequency histogram of rangeland cows accessing lick blocks over 92 days (excludes 12 cows of > 10⁵ registrations)

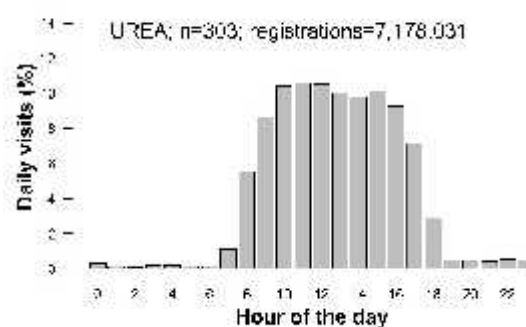


Figure 2. Diurnal frequency of visits of rangeland cows to 40% urea block over 92 days

Of the 305 cows studied, only 9 recorded 0-1000 registrations at any block and only 12 cows recorded more than 1×10^5 registrations including 2 cows with more than 2×10^5 registrations (Figure 1). The CV of registrations per cow was 86% if outliers were excluded or 111% using all 305 cows which is at the higher end of reported values (Bowman and Sowell 1997). The diurnal pattern of accessing blocks (Figure 2) is consistent with the behavioural habit of animals grazing overnight then coming to water after daylight and resting near the water where they could access lick blocks until late afternoon.

References

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