

Photoperiod effects on growth of red deer (*Cervus elaphus*) stags

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In the presence of *ad libitum* high quality feed, growth rate in red deer (*Cervus elaphus*) stags is less in winter compared with spring. Although increasing daylength is responsible for accurately timing the spring increase in growth, whether the autumnal reduction in growth is responsive to photoperiod is not known. The aim of this study was to determine the effects of holding red deer stags during their first year of life to the summer solstice photoperiod (16L:8D). Early-born male calves were weaned before the summer solstice, fed *ad libitum* and allocated to one of two treatments (n = 4) as follows; either confined to individual pens under simulated natural photoperiod conditions or held

at 16L:8D in separate lightproof rooms. Liveweight, food intake and testis diameter were measured weekly. The simulated natural photoperiod deer had cycles of live weight, food intake and testis diameter typical of early-born male deer. In contrast the 16L:8D group did not reduce growth in winter and did not show rapid growth in spring (Fig. 1). This lack of seasonality was reflected in intake. Testis diameter increased to a peak in summer and did not regress. It may be red deer stags require exposure to short or decreasing days to initiate normal physiological cycles. A photoperiodic cue in autumn seems necessary to initiate low winter growth.

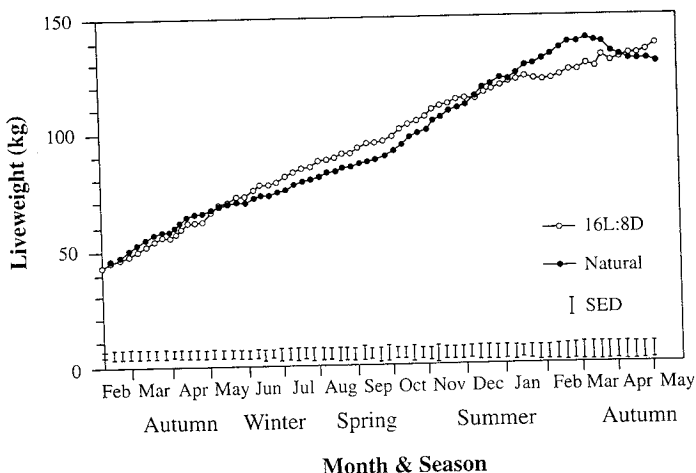


Figure 1. Liveweight of red deer stags in natural and 16L:8D photoperiods.