

Water consumption by rusa stags

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There is very little information on the water requirements of farmed deer. No data has been published for the main farmed species of rusa deer (the Javan rusa, *Cervus timorensis russa*, and the Moluccan rusa, *C. t. moluccensis*). The experiment reported here was designed to provide some baseline data for these animals.

The experiment was conducted between 8 June and 3 July, 2001. Eight mature Javan x Moluccan rusa stags (128 ± 12.8 kg; mean \pm SD) were confined in metabolism pens. All displayed the behaviour characteristic of the rut (breeding season). The stags were given, ad lib, a good quality lucerne hay and water (570 mg/L total dissolved solids). Mean maximum and minimum temperatures were 23 and 8°C. For each deer, feed DM (105°C for 24 h, in duplicate) and water intakes were measured for two, 4 day periods, after 18 d adaptation. Feed and water were offered at 0800 and 1600 h and residues (feed and water) were measured at 2 h intervals between 0800 and 2000 h on the day of feeding in one period, or at 12 h intervals in the other. Total feed and water refusals were collected or measured immediately prior to 0800 h on the following day.

Overall mean drinking water intake was 6.4 ± 2.01 L/d (mean \pm SD), with a mean water:DM ratio of 3.13 ± 0.312 L/kg. When the stags were monitored every 2 h they ate 7% more DM ($P = 0.065$). Sampling interval had no effect on drinking water intake ($P = 0.129$) or the drinking water:DM ratio ($P = 0.446$). Within-animal, between-day variation in water intake was low, with CV = 12.6%. Although between-animal variation in DM intake (DMI) was large (CV = 24.7%), variation in the drinking water:DM ratio was much less (CV = 10%). The relationship between drinking water and DM intakes was linear ($P < 0.0001$).

Sampling interval (h)	DMI (g/d) ¹	Drinking water intake (L/d) ¹	Total water intake (L/d) ¹	Drinking water: DM ratio (L/kg) ¹
2	2104 \pm 516	6.7 \pm 1.98	7.2 \pm 2.09	3.18 \pm 0.333
12	1970 \pm 516	6.1 \pm 2.12	6.5 \pm 2.23	3.08 \pm 0.303

¹mean \pm SD.

Free-ranging Timorese rusa deer (*C. t. timorensis*) eating dry pasture were estimated to drink 1 to 2.5 L/d (1). Water intake by red deer (*C. elaphus*) eating air-dry food may vary between 3.5 and 5.3 L/d (2,3). The water:DM ratio of red deer (5) varies between 3.3 (winter) and 2.6 L/kg DM (summer). Javan and Moluccan rusa deer may have a greater water demand than the temperate red deer.

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