

EFFECT OF ENTRY TIME TO A DAILY STRIP ON DAILY WEIGHT GAIN AND NITROGEN BALANCE

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Objective:

Assess the effect of entry time on daily weight gain and nitrogen balance in calves grazing a winter oat pasture on individual daily strips.



Results & Discussion:

There were no statistical differences ($P > 0.05$) in DMI between treatments (B1= 4.99 ± 0.98 (M) and 4.97 ± 0.56 (A) kg DM d⁻¹; B3= 4.71 ± 0.19 (M) and 4.66 ± 0.53 (A) kg DM d⁻¹). Entry time did not statistically affect DWG ($P > 0.05$) (M = 730 ± 190 and A = 790 ± 140 g d⁻¹). In B2 and B3 animals on treatment A had a numerically higher DWG (21 %; 790 vs. 650 g d⁻¹) than animals on M. The lack of treatment effect in B1 was probably due to a higher herbage mass in B1 than in B2 and B3. There were no statistical differences between treatments ($P > 0.05$) in N intake, N faecal excretion, N urine excretion or N retention.

Nitrogen balance in Holstein-Friesian calves grazing winter oats on individual daily strips with different entry time: 8:30 (M) or 14:30 h (A).

		Treatments		S^2^*	P
		M	A		
N Balance (g kg ^{-0.75} d ⁻¹)	<i>Intake</i>	3.03	2.67	0.26	0.37
	<i>Faeces</i>	0.67	0.74	0.02	0.55
	<i>Urine</i>	1.64	1.56	0.05	0.61
	<i>Retained</i>	0.71	0.38	0.16	0.29

S^2^* = Pooled variance

Materials & Methods:

Animals & diet: 24 Holstein Friesian male calves (132.9 ± 6.31 kg BW), grazing winter oat on individual daily strips (54-d experiment). Animals were randomly assigned to 1 of 3 blocks which differed in herbage DM mass (5256 ± 597 ; 2556 ± 741 ; 2863 ± 769 kg DM ha⁻¹ for B1, B2 and B3, respectively).

Treatments: entry time to an ungrazed daily strip at 8:30 h (M) or at 14:30 h (A).

Diet composition & DM intake: Diet composition and dry matter intake (B1 and B3) was estimated by the *n*-alkane technique. Twice a day for 10 days, animals were orally dosed with cellulose pellets containing 140.66 and 146.00 mg pellet⁻¹ of C₃₂ in B1 and B3, respectively.

Ingestive behaviour: twice on each animal of B1 (n=8), during the nitrogen balance, ingestive behaviour was recorded for 24 h using IGER solid-state behaviour recorder.

Nitrogen balance & weight gain: Nitrogen intake (B1) was estimated considering: **a)** individual DMI, **b)** N content of lamina and pseudostem and **c)** the main grazing events through the day. Faecal and urine nitrogen excretion (B1) were measured by total collection of faeces and urine. For daily weight gain (DWG; B1, B2 and B3), calves were weighed on d 1 and d 54 after a 48-h fast.

Statistical analysis: Dry matter intake and BW data were analysed by ANOVA according to a complete randomised block design. Nitrogen balance was analysed by a *t* test.

