

Dry Matter and Nutrient Intake of Pregnant Holstein-Gyr Cows Fed *ad libitum* or at Maintenance Level in Different Stages of Gestation

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Dry matter intake is a fundamental parameter in determining the performance of dairy cows and considered necessary to get better models to predict nutritional requirements. Advances in Holstein-Gyr dairy cattle nutrition during pregnancy are necessary. This trial aimed to evaluate the effects of feeding level and stage of gestation on dry matter and nutrient intake of crossbred dairy cattle. Forty four multiparous Holstein × Gyr pregnant cows from Embrapa Dairy Cattle were used. On d 40 of gestation, cows were housed in individual pens (30 m²) to 1 of 2 nutritional treatments: *ad libitum* level (AL) (n = 20) and maintenance level (ML, 1.15% BW) (n = 24). Cows were fed corn silage and concentrate at the ratio of 93:7 as total mixed ratio, dry matter (DM) basis (111 g crude protein / Kg DM; 497 g neutral detergent fiber / Kg DM) twice a day. The amounts of corn silage and concentrate supplied were recorded daily. Dry matter and nutrient intakes were evaluated at 118, 145, 178, 209, 236 and 267 days of gestation. Means were analyzed using the LSMEANS option of SAS and were considered significant when $P < 0.10$.

Table 1. Voluntary intake (kg/d) in Holstein × Gyr cows on different stage of gestation and nutritional treatments

Nutritional treatments	Stage of gestation (d)						P-value
	118	145	178	209	236	267	
Dry matter							
Ad libitum	12.3b±0.31	12.7ab±0.31	13.5a±0.31	12.0b±0.34	9.22c±0.40	7.73d±0.52	<0.001
Maintenance	6.63±0.27	6.49±0.27	6.46±0.27	6.25±0.30	6.12±0.37	6.34±0.43	0.27
P-value	<0.001	<0.001	<0.001	<0.001	<0.001	0.03	
Organic matter							
Ad libitum	11.4b±0.29	11.8ab±0.29	12.5a±0.29	11.1b±0.32	8.50c±0.37	7.12d±0.48	<0.001
Maintenance	6.13±0.25	6.00±0.25	5.98±0.25	5.88±0.28	5.78±0.34	5.86±0.40	0.27
P-value	<0.001	<0.001	<0.001	<0.001	<0.001	0.03	
Crude protein							
Ad libitum	1.36b±0.03	1.40ab±0.03	1.47a±0.03	1.32b±0.04	1.08c±0.04	0.85d±0.06	<0.001
Maintenance	0.73±0.03	0.71±0.03	0.70±0.03	0.69±0.03	0.67±0.04	0.68±0.05	0.26
P-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Neutral detergent fiber							
Ad libitum	6.34b±0.16	6.56ab±0.16	6.95a±0.16	6.17b±0.18	4.72c±0.20	3.96d±0.14	<0.001
Maintenance	3.39±0.14	3.34±0.14	3.33±0.14	3.22±0.15	3.19±0.19	3.24±0.22	0.32
P-value	<0.001	<0.001	<0.001	<0.001	<0.001	0.04	

Ad libitum-fed Holstein × Gyr cows had greater ($P < 0.01$) DMI (kg/d) at 145 and 178 d comparing to those at 236 and 267 d of gestation. The difference between ad libitum and maintenance level reduced from d 118 to d 267. Comparing DMI observed at 150 d, which is considered approximately half part of gestation and the last SG studied, the decrease was about 40%. Thus, we recommend a different diet in the late gestation due this period be characterized as the most expenditure in energy and CP requirements due to fetal development (Bell 1995). There was no effect of days of gestation on DM, CP, NDF intakes for cows fed at maintenance level. While for cows fed ad libitum, dry matter and nutrient intakes decreased ($P < 0.0001$) as pregnancy advanced.

Bell, A. W. (1995). *J. Animal Sci.* **73**, 2804.

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