Corrigendum to “Effects of high-starch or high-fat diets formulated to be isoenergetic on energy and nitrogen partitioning and utilization in lactating Jersey cows” (J. Dairy Sci. 103:4378–4389)

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Tissue energy was calculated incorrectly. The corrected equation is listed below, as well as a corrected Table 3, with corrected tissue energy (**TE**) and NE_L values calculated using tissue energy (corrected text shown in bold).

Tissue energy (Mcal of NE_L /d) = positive residual energy $\times k_G/k_T$ or negative residual energy $\times k_T$, [5]

where k_T is the efficiency of utilizing body reserve energy for milk production and k_G is the efficiency of utilizing ME intake for tissue gain. Values of 0.82 and 0.75 were used for k_T and k_G , respectively (NRC, 2001).

Table 3. Effects of a high-starch (HS) or high-fat (HF) diet fed to lactating Jersey cows on energy partitioning and utilization

Item ^{1,2}	Treatment ^{3,4}		SEM ⁴	P-value
	HS	HF		
Gas				
O ₂ consumption, L/d	4,048	4,120	136	0.59
CO ₂ production, L/d	4,410	4,345	193	0.67
CH ₄ production, L/d	391	388	27	0.83
RQ	1.09	1.05	0.012	<0.01
Component, Mcal/d				
Feces	26.0	31.7	1.16	<0.01
Methane	3.70	3.66	0.26	0.83
Urine	2.07	2.44	0.11	0.04
HP	20.6	20.7	0.74	0.81
Milk	19.1	18.9	1.48	0.82
TE	5.46	2.87	1.18	0.16
TE _P	0.53	0.50	0.25	0.92
TE_F	4.91	2.29	1.04	0.12
Fraction, Mcal/d				
GE	76.7	80.0	3.23	0.20
DE	50.7	48.3	2.56	0.23
ME	46.4	43.5	1.88	0.18
NE_L⁵	33.3	30.5	1.38	0.18
Fraction, Mcal/kg of DM				
GE	4.43	4.54	0.012	<0.01
DE	2.93	2.74	0.035	<0.01
ME	2.60	2.41	0.030	<0.01
NE_L	1.86	1.69	0.039	0.01
Efficiency				
ME/DE	0.888	0.876	0.003	0.05
Milk/ME	0.428	0.454	0.017	0.26
HP/ME	0.449	0.478	0.014	0.19
TE/ME	0.112	0.063	0.022	0.16
TE _P /ME	0.010	0.013	0.005	0.70
TE_F/ME	0.101	0.050	0.020	0.10
NE_L/ME	0.715	0.702	0.009	0.37

¹RQ = respiratory quotient (CO₂ production/O₂ consumption, L/L); HP = heat production [$3.866 \times O_2 + 1.200 \times CO_2 - 0.518 \times CH_4 - 1.431 \times N$ (Brouwer, 1965)]; TE = tissue energy; TE_P = tissue energy as body protein; TE_F = tissue energy as body fat.

²Milk yield, DMI, and BW measured during collection period (Table 6) were used to calculate corresponding energy components and fractions.

³n = 24 for feces, urine, milk, gross energy (GE), and digestible energy (DE), n = 22 for all other variables.

⁴Least squares means; largest standard error of treatment mean is listed.

⁵NE_L = $0.080 \times BW^{0.75}$ + milk energy + tissue energy corrected for efficiency of conversion to milk energy (NRC, 2001).

REFERENCE

Morris, D. L., T. M. Brown-Brandl, K. E. Hales, K. J. Harvatine, and P. J. Kononoff. 2020. Effects of high-starch or high-fat diets formulated to be isoenergetic on energy and nitrogen partitioning and utilization in lactating Jersey cows. J. Dairy Sci. 103(5):4378–4389. <https://doi.org/10.3168/jds.2019-17638>.