Article title: Using milk mid-infrared spectroscopy to estimate cow-level nitrogen efficiency metrics

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Supplementary Table 1. Prediction performance[1] for predicting nitrogen intake (Nintake; grams of nitrogen per day), nitrogen use efficiency (NUE), and nitrogen balance (Nbal; grams of nitrogen per day) with partial least squares regression using either morning (am), evening (pm), or a combination of a.m. and p.m. spectra jointly with other model features like milk yield (MY), days in milk (DIM), and parity (par).

Trait	Prediction variables	Spectra type								
		am			pm			am pm		
		RMSEV	r	RPIQ	RMSEV	r	RPIQ	RMSEV	r	RPIQ
Nintake	Spectra	97.61	0.51	1.56	92.95	0.57	1.64	91.32	0.59	1.67
	Spectra + MY	84.23	0.67	1.81	79.54	0.71	1.92	79.97	0.72	1.93
	Spectra + DIM	97.71	0.51	1.56	92.87	0.58	1.64	91.23	0.60	1.67
	Spectra + MY + DIM	83.91	0.67	1.82	79.57	0.71	1.92	78.81	0.72	1.94
	Spectra + MY + par	81.74	0.69	1.87	78.01	0.73	1.96	77.16	0.73	1.98
	Spectra + MY + par + DIM	81.44	0.70	1.87	77.94	0.73	1.96	77.04	0.73	1.98
NUE	Spectra	3.43	0.70	2.10	3.33	0.72	2.17	3.26	0.74	2.22
	Spectra + MY	2.93	0.79	2.47	2.84	0.81	2.54	2.76	0.82	2.62
	Spectra + DIM	3.39	0.71	2.13	3.32	0.72	2.18	3.25	0.74	2.26
	Spectra + MY + DIM	2.93	0.79	2.47	2.85	0.81	2.54	2.77	0.82	2.61
	Spectra + MY + par	2.86	0.81	2.53	2.81	0.81	2.57	2.72	0.83	2.66
	Spectra + MY + par + DIM	2.86	0.80	2.53	2.81	0.81	2.57	2.71	0.83	2.66
Nbal	Spectra	83.48	0.55	1.61	79.02	0.61	1.70	78.10	0.63	1.72
	Spectra + MY	78.29	0.62	1.71	73.47	0.68	1.83	73.27	0.68	1.83
	Spectra + DIM	83.57	0.55	1.61	79.06	0.61	1.70	78.14	0.63	1.72
	Spectra + MY + DIM	78.11	0.63	1.72	73.54	0.68	1.82	73.06	0.68	1.83
	Spectra + MY + par	76.11	0.65	1.76	72.01	0.69	1.86	71.61	0.70	1.87
	Spectra + MY + par + DIM	75.93	0.65	1.77	72.20	0.69	1.86	71.63	0.70	1.87

[1]RMSE = root mean square error; RMSEV = root mean square error in validation data set; r = Pearson correlation between actual and estimated values; RPIQ = ratio of performance to interquartile distance.