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1. Gross energy efficiency

2. Net energy efficiency

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1. Residual energy intake
2. Residual feed intake

$$\text{REI} = \frac{\text{NEI} - (\text{NE}_m + \text{NE}_l + \text{NE}_{\text{preg}} + \text{ER})}{\text{ER} + \text{NE}_{\text{preg}} + \text{NE}_l + \text{NE}_m}$$

$$( \quad / \quad ) \qquad / \qquad ( \quad )$$

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%

$$k_f \quad k_l \quad k_m$$

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$$Y_{ijklmn} = \mu + HYS_j + P_k + M_l + a_m + Pe_n + e_{ijklmn}$$

( ) j HYS<sub>j</sub> μ

$$M_l \left( \quad \right) k$$

$$a_m \left( \quad \right) \quad l \left( \quad \right)$$

$\text{Be}_m$  ( $m = 1, 2, \dots$ )

Pe<sub>m</sub> III

$$e_{ijklmn} \quad m$$

m n

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DFREML

### 1. Within animals regression model

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			(%)		
/	/	/		(Mcal/d)	
/	/	/			(kg)
/	/	/			(kg)
/	/	/			(kg)
/	/	/	(kg)	%	
/	/	/			(kg/d)
/	/	/			(kg/d)

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#### 1. Componenet traits

(BW)		(REI)		%	DMI	BW	REI	مفت
* (PY)	(FY)	(FCM)	MY					
PY	FY	FCM	MY	DMI	BW	REI	مفت	
/	/	/	/	/	/	/	/ ± /	REI
/	/	/	/	/	/ ± /	/	/	BW
/	/	/	/	/ ± /	/	/	/	DMI
/	/	/	/ ± /	/	/	/	/	MY
/	/	/ ± /	/	/	/	/	/	FCM
/	/ ± /	/	/	/	/	/	/	FY
/ ± /	/	/	/	/	/	/	/	PY

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