

SULFUR AMINO ACID REQUIREMENT OF STARTER, GROWER, AND FINISHER BROILERS DETERMINED USING L-METHIONINE

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Table 1: Experimental set up

Treatments	ROSS 308	% digestible methionine and cysteine in feed		
		Starter (D0-10)	Grower (D10-23)	Finisher (D23-35)
Starter 01	630 birds	0.60	Commercial grower diet (dig Met+Cys: 0.85)	Commercial diet (dig Met+Cys: 0.75)
Starter 02		0.65		
Starter 03		0.70		
Starter 04		0.75		
Starter 05		0.85		
Starter 06		0.95		
Starter 07		1.05		
Grower 01	Pool 1 (630 birds)	Commercial starter diet (dig Met+Cys: 0.95)	0.55	Commercial diet (dig Met+Cys: 0.75)
Grower 02			0.60	
Grower 03			0.65	
Grower 04			0.70	
Grower 05			0.80	
Grower 06			0.90	
Grower 07			1.0	
Finisher 01	Pool 2 (630 birds)	Commercial starter diet (dig Met+Cys: 0.95)	Commercial grower diet (dig Met+Cys: 0.85)	0.50
Finisher 02				0.55
Finisher 03				0.60
Finisher 04				0.65
Finisher 05				0.70
Finisher 06				0.80
Finisher 07				0.90

Table 2: Estimated requirement of dig met plus cys

Parameters	Optimal digestible methionine and cysteine level		
	Starter (D0-10)	Grower (D10-23)	Finisher (D23-35)
Body weight	0.69	0.66	0.56
Daily weight gain	0.69	0.63	0.65
Daily feed intake	0.70	ND	ND
Feed conversion ratio	ND	0.62	0.62
Carcass weight	0.66	0.61	ND
Breast weight	0.66	0.69	0.65
Leg weight	0.65	0.60	ND
Average	0.67	0.64	0.62

ND: Means that model fit was poor for both models

Take home message

According to Aviagen, broilers need 0.95, 0.87, and 0.83% SID Met plus Cys for starter, grower, and finisher phases, respectively, while in this experiment 0.69, 0.66, and 0.62% SID Met plus Cys were required to achieve the maximum performance of Ross 308 broilers. Whether or not these observed lower SID Met plus Cys requirements could be attributed to the stereoisomers of Met should be further elucidated.

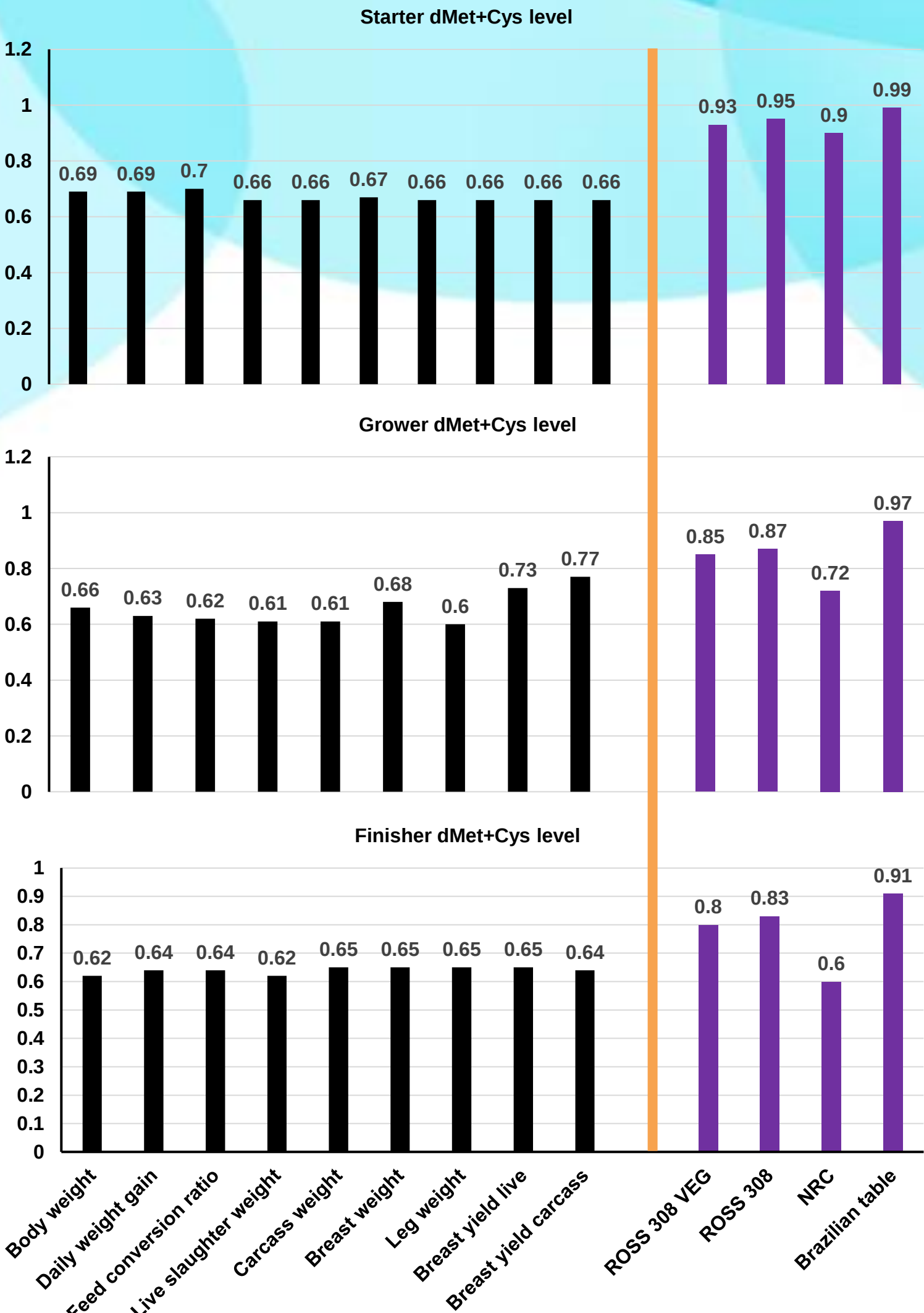
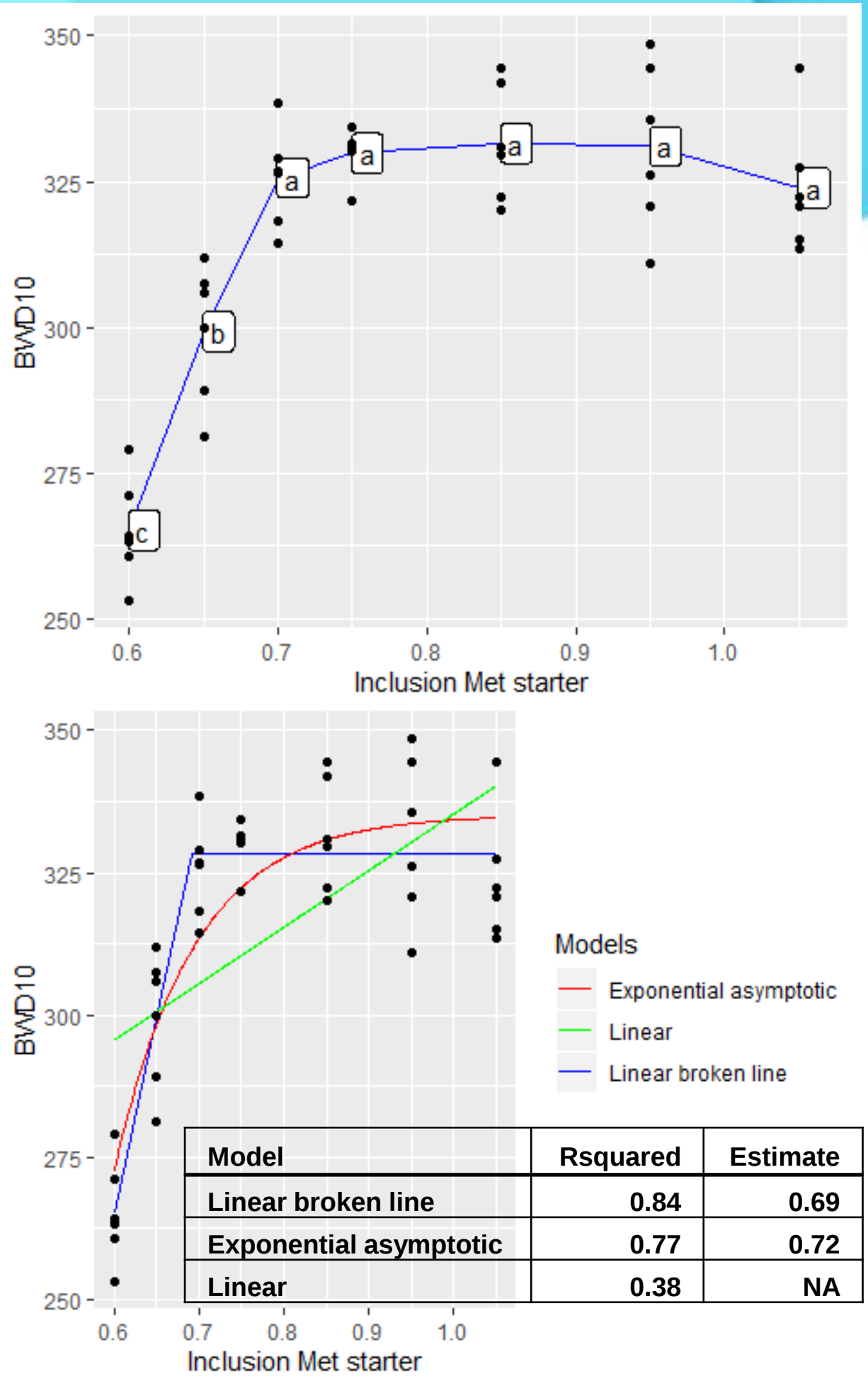


Figure 1: Comparison of estimated data with table values.

Figure 2: An example of response to different levels of L-Methionine and the models used in estimation.



For more details of this experiment please see Millecarn et al. 2021 Poult Sci 100: 910-917.

