



How to Successfully Balance Dairy Rations for LYS and MET

In the [previous SmartMail](#) we examined how feed's Crude Protein (CP) is partitioned into different fractions by the [NRC](#), [CPM](#) and [CNCPS](#) models. We also discussed how the biology in each model estimates the grams of metabolizable protein (MP) and its amino acid profile. It has long been recognized that it is not CP that the cow needs to satisfy requirements - it is the grams of amino acids in the MP that count.

Rations should be balanced with the goal of optimizing concentrations of metabolizable lysine (LYS) and metabolizable methionine (MET) in MP and respecting an ideal LYS to MET ratio. [Whitehouse et al.](#) (2009) applied the indirect dose-response approach used in the NRC 2001 protein sub-model to determine the optimal concentrations of LYS and MET in MP for not only the NRC but also the CPM and CNCPS models. As can be seen in the table below, the optimal LYS and MET concentrations were different for each model. They are much higher for CPM versus the other two models due to the higher microbial contribution predicted by CPM:

		Requirement for maximum milk protein content (% of metabolizable protein)	Lys:Met Ratio	Requirement for maximum milk protein yield (% of metabolizable protein)	Lys:Met Ratio
NRC	Lys	6.80	2.97	7.10	2.82
	Met	2.29		2.52	
CPM	Lys	7.46	2.90	7.51	3.00
	Met	2.57		2.50	
CNCPS	Lys	6.68	2.78	6.74	2.92
	Met	2.40		2.31	

However, in practice, it is often hard to achieve the optimal concentrations of LYS and MET due to restrictions on ingredient availability.

In the next SmartMail, I will discuss target formulation values to aim for when balancing diets for LYS and MET with respect to the three models.

Have Questions?

Please [contact me](#) if you have any questions or would like more information. I will personally respond to all emails.



Daniel Luchini, Ph.D.
Manager - Ruminant Products Technical Services

Visit our website at <http://www.adisseo.com/> for more information.

One Point Royal / 4400 North Point Parkway / Suite 275; Alpharetta, GA 30022
USA - Tel: 678-339-1500 or 800-727-1019 - Fax: 678-339-1600
Canada - Tel: 905-659-9555 or 800-387-2123 - Fax: 888-821-7726

