



Insights From DR. John

QUESTION: I've been adding a trace mineral supplement to our diet of King Feed and hay, is it worth doing?

Dr.'s Response:

Below is a spreadsheet that compares nutrient levels in daily total equine diets that are composed of (1) 6 lbs of your King Feed + 14 lbs of Hay or (2) same diet as (1) plus 2 oz/day of Trace Minerals. I have also listed National Resource Council (NRC) "adequate levels" and "maximum tolerance".

Formulation	6 lb/hd/day/ King Feed	Plus 2 oz/day/ supplement	ADEQUATE LEVEL	MAX TOLERANCE
			NRC	NRC
COPPER, PPM	26.9	45.5	10.00	800.00
Copper Chelate, PPM	5.4	24.4	10.00	800.00
ZINC, PPM	86.8	140.2	40.00	500.00
Zinc Chelate, PPM	15.4	69.8	40.00	500.00
SELENIUM, PPM	0.23	0.44	0.10	2.00
IODINE, PPM	0.42	0.63	0.10	5.00
VITAMIN A, KIU/kg	4.2	5.8	2.0-3.0	16.0
VITAMIN E, IU/kg	59.4	140.3	50-80	1000
BIOTIN, mg/kg	0.23	3.02	n/a	n/a
LYSINE, %	0.48	0.55	0.25-0.36	n/a

In summary, the diet without the added trace minerals are more than adequate, but adding the Trace Minerals still results in nutrient levels well below maximum tolerance.

I did try running a total diet for light work based on ONLY your Grass Hay plus 2 oz of the trace minerals. This diet resulted in deficiencies in

Calcium, Phosphorus & Digestible Energy. This emphasizes the point that it can be difficult to meet "whole body" nutrient requirements with only a hoof supplement. NOTE: the "n/a" on biotin: To date, there are no published (peer-reviewed scientific) studies documenting biotin deficiency, toxicity or minimum requirements in horses. That being said, a study based on supplementing 20 mg/hd/day of biotin for AT LEAST 9 MONTHS, did improve hoof wall integrity.

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