Muscle Matters: The Right Protein for Weanlings

Protein, made up of individual amino acids, is essential for muscle, ligament and tissue development and maintenance, especially in young, growing horses. Limiting certain amino acids such as lysine will inhibit this process, but what other amino acids may be limiting in the growing horse? Researchers at the University of Kentucky set out to answer this question.

**Objective:** To compare protein synthesis in weanling horses fed a ration formulated to either meet or exceed current crude protein requirements.

**The Horses:** 6 weanling colts of similar age and weight

**Reduced Crude Protein & Alfalfa Cubes** (met requirements for crude protein)

**BUCKEYE® Nutrition Growth & Alfalfa Cubes** (exceeded requirements for crude protein)

**Diets fed were balanced for lysine and methionine**

**Greater post-meal plasma lysine and methionine but lower threonine**

**Lower post-meal plasma lysine and methionine but higher threonine**

**Whole-body protein synthesis determined**

**Reduced protein synthesis =** Limiting amino acid(s), possibly threonine, not sufficiently provided in the diet

**Greater protein synthesis =** Sufficient amino acid(s) in the diet

**Take Home Message**

Diets that meet crude protein requirements may be deficient in specific amino acids, such as threonine, which are needed for protein synthesis in weanling horses.