ProMin

Proteinated Trace Minerals

Improved Mineral Nutrition

Trace minerals play an important role in animal nutrition. For over 70 years, animal feeds have been supplemented with trace minerals because these minerals are essential for animal health, growth, lactation and reproduction. The key with mineral supplementation is supplying adequate quantities of trace minerals (not too much or too little). As shown in Figure 1, performance will increase as trace mineral intake increases *until* the animal reaches its peak level. After the peak level is reached, performance will level off and then start to decrease as trace minerals continue to increase. It is important to find the *right trace mineral* that will help the animal reach its **peak performance level**.

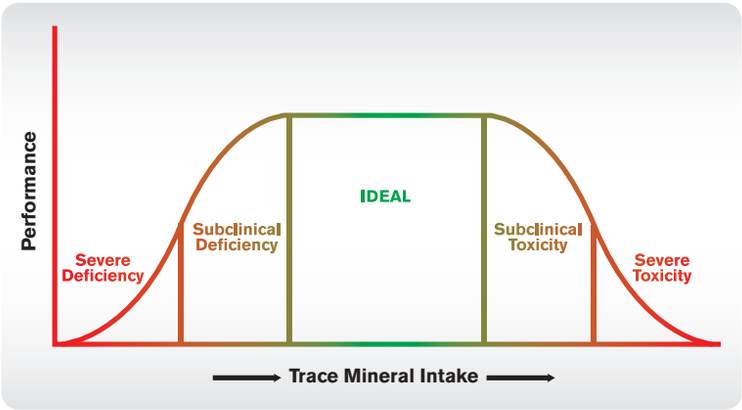

Figure 1. Relationship between trace mineral intake and animal responses

Reaching Peak Performance

Part of a sound nutrition program is providing trace minerals in the animal diet either in inorganic or organic form. Inorganic trace minerals (metal ion is attached to an inorganic escort like sulfate) are generally less expensive and more concentrated. In order to support peak performance organic or proteinated trace minerals can be used to supplement the trace mineral nutrition. Organic trace minerals (metal ion is attached to an organic escort like an amino acid, a peptide or a polysaccharide) are generally more expensive on a dollar per pound basis and are less concentrated than most inorganic sources. **Research has proven that organic trace minerals better fit the animal's trace mineral requirements by providing better availability when the animal needs them.** The animal can up regulate or down regulate the amount of mineral absorbed, helping the animal reach peak performance.

Organic trace minerals can either be complexes or chelates. Complexes have only one attachment point between the metal and the organic escort (i.e., amino acid complex). Chelates have multiple attachments between the organic escort and the metal ion (i.e., Promins). Proteinates are a type of chelate where the mineral is chelated with short-chain peptides and amino acids derived from hydrolyzed (broken down) proteins. The multiple bonds in proteinates hold the minerals in a readily available form until the animal needs to absorb it.

Choose ProMin proteinated trace minerals – available when the animal needs them to reach their peak performance level.

ProMin Porteinated Trace Minerals

FEATURES	BENEFITS
Stable Bond	ProMin minerals will maintain their structure at varying pH levels so the animal can use the minerals when it needs them
Absorbed Easily	The animal's system can up regulate or down regulate the amount of minerals absorbed, helping it reach its peak performance level

Brookside Agra | O'Fallon, IL USA
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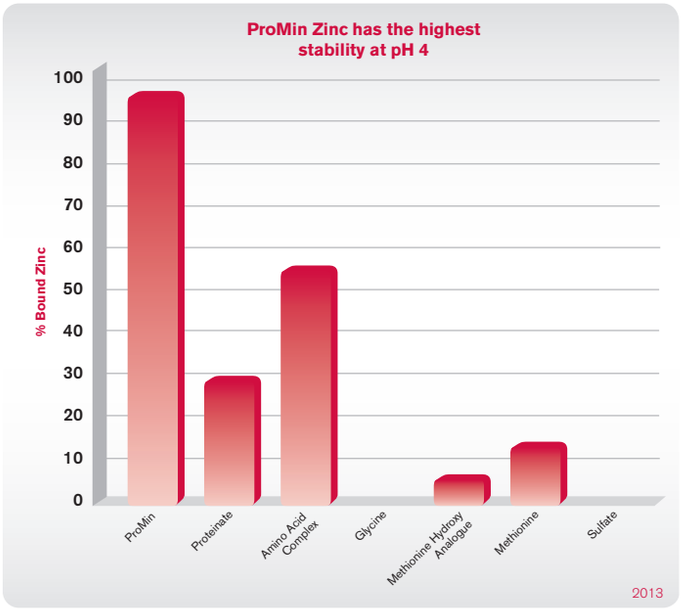
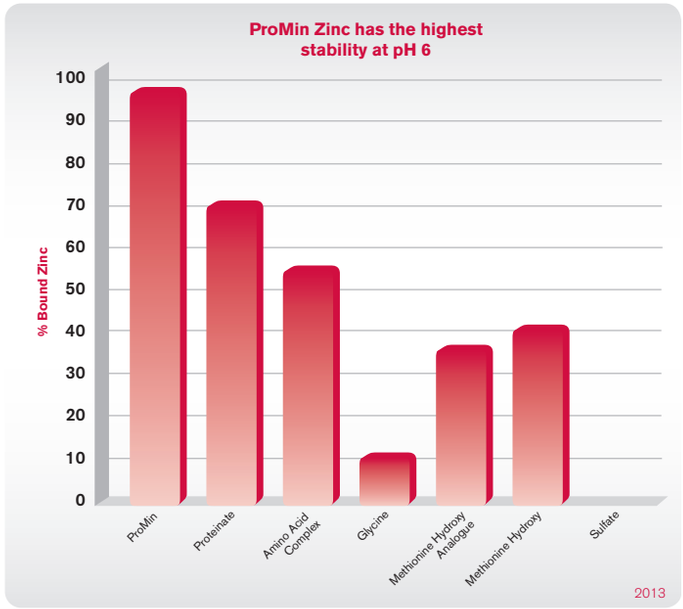
The Importance of Stability

The pH of the gastrointestinal tract ranges from 1 to 2 in the stomach and can go up to 7.2 as digesta moves through the digestion process. It is very important to have a trace mineral that will survive this pH shift and the digestive degradation attempts until reaching the target absorption site. ProMin proteinated trace minerals provide a greater potential of increased stability when subjected to varying pH levels. The multiple bonds in ProMins increase the potential for utilization by the animal. ProMin's durability is demonstrated in graphs below. Graph 1 shows the percent of ProMin Zinc still bound at pH 4 and Graph 2 shows the percent still bound at pH 6. In both examples, the percent of zinc still bound is above 90 percent!





ProMin Product Portfolio

PRODUCT NAME	TYPE OF PRODUCT
ProMin Zn 15%	Zinc Proteinate
ProMin Mn 15%	Manganese Proteinate
ProMin Cu 15%	Copper Proteinate
ProMin Mg 10%	Magnesium Proteinate
ProMin Fe 15%	Iron Proteinate
ProMin Co 10%	Cobalt Proteinate

Limited custom blends available.

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