

# The chemistry of Zinpro. Why it matters

Peter Stark, PhD

*VP of Product Development at Zinpro*

## **Zinpro Advantage**

My presentation will discuss three areas, what is unique about the Zinpro complex, how we evaluate organic trace minerals from a chemical standpoint and review various OTM's using some of this methodology. The overall theme is from a medicinal chemistry standpoint. I will be delving into chemistry properties, uptake, absorption and metabolism. Zinpro forms a complex with amino acids. This complex achieves all the key features required for a successful OTM. It is soluble, stable at stomach pH and taken up from the intestine as the complex. Once our mineral is absorbed into circulation our minerals are still in a different form that allows for better utilization and a longer time in circulation. All of these factors lead to Zinpro performance minerals superior animal performance. I will also explore what is important in the design of an OTM to give the audience better tools to differentiate what is real and what is not in trying to differentiate the various options. Key factors are solubility of the mineral and ligand (together), the stoichiometry of the metal and ligand, the stability of the metal and ligand and the route of uptake, absorption and utilization of the metal. I will then use these criteria to discuss the problems associated with some of the OTM's on the market. For example, proteinates are mainly inorganic metal and what little metal is bound to protein/peptide will dissociate during the digestion process. Acids such as propionic and hydroxy acids have too weak of a bonding to survive the stomach acid as will become ionic inorganic metal during digestion. Glycinates form a good bond and are soluble but since there is no side chain for bonding recognition with the amino acid transporters it has poor uptake in a competitive environment. These concepts will be illustrated with experimental data. Taken in totality it will demonstrate clearly the Zinpro advantage.