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What is the uses of basic copper chloride in feed industry?

Copper is one of the most critically important of the trace minerals that are essential elements in numerous enzymes that support metabolic functions in most organisms. Since the early 1900s, copper has routinely been added to animal feedstuffs to support good health and normal development. Starting in the 1950s, there was increasing focus on the issue of bioavailability of trace mineral supplements which led to copper sulfate pentahydrate becoming the predominant source. Because of its high water solubility, and thus hygroscopicity, CuSO4 leads to destructive reactions in feed mixtures. These are notoriously destructive in hot, humid climates. Recognition that basic copper chloride would reduce feed stability problems led to issuance of patents on the use of the compound as a nutritional source.

Subsequently, animal feeding studies revealed that the alpha crystal form of basic copper chloride has a rate of chemical reactivity that is well matched to biological processes. The strength of the bonds holding copper in the alpha crystal polymorphs could prevent undesirable, anti-nutritive interactions with other feed ingredients while delivering controlled amounts of copper throughout the active zones in the digestive tract of an animal.

Success in producing alpha basic copper chloride on a large scale allowed for the widespread application of basic copper chloride in the feed thereby supplying the copper requirements of all major livestock groups. This form of the compound has proven to be particularly suitable as a commercial feed supplement for use in livestock and aquaculture due to its inherent chemical and physical characteristics. Compared to copper sulfate, the alpha crystal form of basic copper chloride provides many benefits including improved feed stability, less oxidative destruction of vitamins and other essential feed ingredients; superior blending in feed mixtures, and reduced handing costs. It has been widely used in feed formulations for most species, including chickens, turkeys, pigs, beef and dairy cattle, horses, pets, aquaculture and exotic zoo animals.