



MINISTRY OF JIHAD-E-AGRICULTURE

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## **Synthesis of Organic Form of Zinc via Laboratory Method with Animal Nutrition Usage**

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### **Abstract**

In this research, the method of preparing zinc chelate was studied using raw materials that are available and non-toxic for livestock and poultry. To prepare this organo-metallic chelate, Zinc sulfate salts were used to provide the core, and the methionine and lysine amino acids were used to form shell chelate. The reaction was investigated under various conditions included: temperature, pH, concentration and time, and the best conditions were determined in terms of economics, efficiency, ease of reaction conditions and isolation. The chemical and physical properties of the product include the percentage of mineral matter (using atomic absorption spectroscopy), solubility at different pH (by measuring the residual sedimentation content in the pH range between 3-7) and determining the prepared chelate structure (Using IR absorption spectrophotometer). In the next phase the product was tested by researcher in poultry nutrition section to compare with other forms of Zinc available in markets in order to determine the benefits (such as consumption, bio-availability and adsorption) and defects of the product.

**Key Words:** Nutrition, Zinc, chelate, organic form of metals, aminoacid