

R&D

Second Winner

■ **Project Title:**

Evaluation of micronutrient deficiencies especially zinc in soils, agricultural products, domestic animals and humans.

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A. Majidi, J. Ghaderi, M. R. Balali , M. H. Sedri, A. Baibordi, Z. Khademi,
Z.Khougar (M.Sc.) .

Abstract:

Zinc is one of the essential elements for plants, animals and humans, but it is deficient in most calcareous soils and consequently in plant, animal and human diets. Hence, zinc deficiency is common in agricultural products and diets of Middle East countries, including Iran. Undesirable farming practices have further contributed to zinc deficiency in plants, domestic animals and humans food chain in these countries. However, general awareness is lacking about the important roles of micronutrients and zinc, in particular, in plant-animal-human nutrition. Application of Zn-fertilizers to the calcareous soils has been associated with improved yield and crop quality for crops and the enhancement of domestic animals and human health. Research results revealed that the application of zinc improved zinc content of grains (enrichment) and enhanced animal and human health. Recently, about 30,000 tons (domestic product) of zinc sulfate have been used in Iran's agricultural sector. During the last 10 years, the importance of balanced application of fertilizers has been promoted with the help and facilities of both the Soil and Water Research Institute as well as of the Soil Science Dept., Tarbiat Modarres University and the need to meet the crops total nutrient requirements has been emphasized and related research activities have been carried out. The efforts have led to the production of chemical fertilizers containing micronutrient especially zinc, in Iran, extensively used by at least every progressive farmer and fruit grower in the country. Nowadays, more than 30 million capsules of zinc sulfate are used annually, whereas in 1996 no one had heard of them. The outcome of this research can be the improvements in the yield and quality of agricultural products as well as upgrading of the consumers' health. Improvements in people's health mean economic improvements and more comforts, energy and vigor for the society as a whole, mostly thanks to the effects of more proper zinc nutrition.