

# [***Addressing zinc shortage to boost agricultural quality, soil health***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:6BS5-RFP1-DY9P-X0KY-00000-00&context=1516831)

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**Body**

India has ensured the food security of her vast populace by way of achieving record agriculture production and making food grains available either free or at nominal prices to the poorer strata of society. However, this has not ensured nutritional security. Multi-nutrient deficiency continues to affect a vast segment of the population. The deficiency becomes further acute in the case of micronutrients. For example, zinc deficiency, especially in children, is resulting in stunted growth, weak immune systems, and even mental ***health*** issues.

The remedies available for addressing the zinc deficiency are food supplements, food fortification, and biofortification of crops with zinc. Food supplements and food fortification are a little difficult and will have limited reach for the poorer strata of the population. Biofortification of crops can be carried out in two ways: genetic biofortification, which involves developing seed varieties that can assimilate more zinc in food crops, and by way of agronomic fortification, which involves the application of zinc as fertilizers, especially in zinc-deficient ***soils***. Genetic fortification is a very sound way and long-term solution but it takes time with continuous research and development of new varieties of food crops. Indian agriculture research institutes under the Indian Council of Agriculture Research and state agriculture universities are developing varieties of rice, wheat, and millets enriched with zinc and iron.

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Agronomic fortification is the fastest way of increasing the availability of zinc in ***soils*** and in turn increasing the zinc content of food crops. Even fortified varieties will require ***soils*** enriched in micronutrients. It means good ***soil health*** is a prerequisite for growing crops enriched in micronutrients.

There is widespread deficiency of zinc in Indian ***soils***, especially in agriculture-intensive areas of the rice-wheat system. According to reports of long-term experiments, about 37 per cent of Indian ***soils*** are affected by zinc deficiency. There is a positive correlation between the deficiency of zinc in ***soils*** and human ***health***. Zinc is the 5th most important plant nutrient after nitrogen, phosphate, potash, and sulphur.

Zinc content of crops increases crop yields and improves the quality of products. There is also favorable economics for farmers with appropriate pricing of zinc fertilizers.

Recommendations for the application of zinc fertilizer are available for various crops. There are a number of zinc fertilizers included in the Fertilizer Control Order (FCO). These include zinc sulphate, zincated NPKs, DAP, SSP, and micronutrient mixtures. The government has also approved customized fertilizers fortified with zinc based on proven responses for specific crops and areas. It may be appropriate to clarify that fertilizers are covered under the Essential Commodity Act and the FCO has been issued under the Act, which specifies, amongst other things, fertilizer products that can be sold for agriculture use in the Indian market, meaning thereby that no fertilizer products can be sold without its inclusion in the FCO.

Production and marketing of zinc fertilizers are quite fragmented. Supply of zinc fertilizers, especially zinc sulphate by large manufacturers, will help to improve availability and quality of zinc products. Production and sale of fertilizers fortified with zinc have not taken off for a variety of reasons. Production of zincated urea may be difficult in large conventional urea plants. There will be a requirement for additional facilities to incorporate zinc starting with urea in solution form. Pricing and subsidy policies for fertilizers need changes to encourage fortified fertilizers. For example, urea with 2 per cent zinc has been allowed an additional maximum retail price (MRP) of 10 per cent. The controlled MRP of urea is so low that the incremental MRP is grossly inadequate to cover the additional cost of fortification with 2 per cent zinc. There are also issues both in the production and pricing of complex fertilizers fortified with zinc.

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Further, the major source of zinc at present is zinc sulphate. While fertilizers attract 5 per cent GST, zinc sulphate sold as fertilizer attracts 12 per cent GST. This increases the cost of zinc application and needs to be reduced to 5 per cent GST. Import of raw materials should also attract 5 per cent or lower customs duty. In addition to lowering the cost of zinc fertilizers, there is also a need for increasing awareness amongst farmers about the importance of zinc. ***Soil*** testing should always include micronutrients in addition to primary and secondary nutrients.

Addressing the issue of zinc deficiency in Indian ***soils*** can increase crop yields, improve the nutritional quality of crops, and improve human nutrition. Availability of quality products at appropriate prices along with extension services can help to improve ***soil health***. Large fertilizer manufacturers should be persuaded to manufacture and sell micronutrient fertilizers and popular fertilizer products fortified with micronutrients. They can help to increase the availability of quality products at the doorstep of farmers. Both the Centre and State Governments should adopt appropriate policies and strategies to increase zinc content in Indian ***soils***.

(Author is former Additional Director General of Fertiliser Association of India.)

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