

# **India Agricultural Micronutrients Market By Form (Chelated and Non-Chelated), By Type (Zinc, Cooper, Boron, Iron, Manganese, Others), By Mode of Application (Soil, Foliar, Fertigation, Others), By Crop Type (Cereals & Grains, Oilseeds & Pulses, Fruits & Vegetables, Others), By Region, Competition, Forecast & Opportunities, 2019-2029F**

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## **Abstracts**

India Agricultural Micronutrients Market is anticipated to project impressive growth in the forecast period. Agricultural micronutrients are essential elements that plants require in small quantities for growth and development. Micronutrients such as zinc, boron, manganese, iron, and copper play a crucial role in plant physiology, influencing various functions from enzyme activity to photosynthesis. Despite their required amounts being minute, any deficiency can hinder plant growth, leading to reduced crop yields. Therefore, farmers often supplement soils with these micronutrients to ensure optimal plant health and productivity.

The Agricultural Micronutrients Market in India is witnessing significant growth, primarily driven by the increased awareness of soil health among farmers and the escalating need to boost crop yield. Given the vast expanse of agricultural land and the diverse crop patterns across the country, micronutrient deficiencies are common, necessitating the application of these elements. Government initiatives promoting balanced fertilization alongside private sector investments in research and development of effective and affordable micronutrient solutions are further propelling the market.

## **Key Market Drivers**

## Growing Soil Health Awareness & Nutrient Deficiency Recognition

One of the primary drivers fueling the growth of the agricultural micronutrients market in India is the increasing awareness of soil health and the recognition of nutrient deficiencies in crops. As farmers and agricultural stakeholders become more cognizant of the crucial role micronutrients play in plant growth and development, there is a growing emphasis on addressing nutrient imbalances in the soil.

Micronutrients, including elements such as zinc, iron, manganese, copper, and boron, are essential for various biochemical processes in plants. When deficient, these micronutrients can limit crop yield, quality, and overall productivity. The awareness of soil health and the impact of micronutrient deficiencies is driving farmers to adopt micronutrient-rich fertilizers and soil amendments to optimize crop nutrition. Government initiatives, educational programs, and collaborations between agricultural extension services and the private sector contribute to disseminating information about micronutrient deficiencies. As a result, the increasing recognition of the importance of agricultural micronutrients is a key driver propelling the growth of the micronutrients market in India.

## Expanding Intensive Agriculture & High-Cropping Systems

The intensification of agriculture and the widespread adoption of high-yielding cropping systems contribute to the demand for micronutrients in India. High-yielding crop varieties and intensive farming practices often lead to increased nutrient uptake by crops, depleting micronutrient levels in the soil. This depletion creates a need for micronutrient supplementation to sustain crop yields and maintain soil fertility.

In regions where multiple cropping cycles are common, the demand for micronutrients is particularly pronounced. Continuous cultivation without adequate replenishment of micronutrients can result in soil nutrient imbalances, affecting the health and productivity of crops. Farmers practicing intensive agriculture recognize the importance of micronutrient management to ensure the sustained fertility of their fields and achieve optimal crop yields. As the trend of high-cropping intensity continues, the demand for agricultural micronutrients is expected to grow, making them essential components of modern agricultural practices aimed at maximizing productivity.

## Increasing Crop Diversification & Specialty Crops

The diversification of crops and the cultivation of specialty crops contribute to the

demand for micronutrients in India. Traditional staple crops like rice and wheat are being complemented by the cultivation of fruits, vegetables, oilseeds, and other high-value crops. Different crops have varied micronutrient requirements, and the shift towards a more diversified agricultural landscape necessitates targeted micronutrient management.

Specialty crops often have specific micronutrient needs for optimal growth, fruiting, and nutritional quality. Micronutrient deficiencies in these crops can have pronounced effects on yield and marketable quality. Farmers engaged in the cultivation of specialty crops recognize the importance of micronutrient supplementation to meet the unique nutritional demands of these plants. The increasing diversification of crops contributes to the expanding market for micronutrients, as farmers seek customized nutrient solutions to support the growth of a wide range of crops with distinct nutritional requirements.

### Adoption of Precision Agriculture Technologies

The adoption of precision agriculture technologies is driving the demand for micronutrients in India. Precision agriculture involves the use of technologies such as GPS, sensors, and data analytics to optimize crop management practices, including nutrient application. These technologies enable farmers to precisely assess the nutrient status of their fields and apply micronutrients in a targeted and efficient manner.

Precision agriculture allows for site-specific nutrient management, ensuring that micronutrients are applied where they are needed most. This targeted approach minimizes nutrient wastage, reduces environmental impact, and optimizes the cost-effectiveness of micronutrient application. As farmers embrace precision agriculture, the demand for micronutrients as part of precision nutrient management strategies is on the rise. The integration of precision agriculture technologies with micronutrient management reflects a modern and technology-driven approach to optimizing crop nutrition and productivity.

### Key Market Challenges

#### Soil Testing Infrastructure & Accessibility

A significant challenge in the agricultural micronutrients market in India is the inadequate infrastructure for soil testing and limited accessibility to soil health services. Soil testing is essential for accurately assessing the nutrient status of agricultural soils,

including micronutrient levels. However, in many regions of India, there is a lack of well-established soil testing facilities, and farmers often face challenges in accessing timely and reliable soil health information.

To address this challenge, there is a need for investments in the development of soil testing laboratories, especially in remote or underserved agricultural areas. Mobile soil testing units, technology-driven soil analysis tools, and initiatives to make soil testing more affordable and accessible can contribute to overcoming this challenge. Government support and private sector participation are essential for building a robust soil testing infrastructure that facilitates informed micronutrient management by farmers. By improving soil testing accessibility and infrastructure, the agricultural micronutrients market can better align with the specific needs of diverse agricultural regions in India.

### Complexities in Micronutrient Interactions & Formulations

The complexities in micronutrient interactions and formulations pose a significant challenge in the agricultural micronutrients market. Micronutrients often interact with each other, as well as with soil components and other agronomic inputs, in ways that influence their availability to plants. Achieving the right balance and formulating micronutrient products that ensure optimal plant uptake can be challenging.

Research and development efforts are necessary to address these complexities and develop micronutrient formulations that are stable, effective, and compatible with various soil conditions. The challenge also extends to ensuring that micronutrient formulations meet the specific requirements of different crops and agro-climatic regions. Collaboration between agronomists, soil scientists, and micronutrient manufacturers is essential for advancing research and development in micronutrient formulations. By addressing the complexities associated with micronutrient interactions, the agricultural micronutrients market can offer products that provide reliable and consistent results for farmers.

### Key Market Trends

#### Adoption of Precision Agriculture Practices

A prominent trend shaping the agricultural micronutrients market in India is the increasing adoption of precision agriculture practices. Precision agriculture involves the use of advanced technologies, such as satellite imagery, sensors, and GPS-based systems, to optimize farming practices. In the context of micronutrients, precision

agriculture enables farmers to precisely analyze and manage the nutrient needs of their crops.

Through the integration of precision agriculture technologies, farmers can assess soil conditions, monitor crop health, and determine micronutrient deficiencies with a high degree of accuracy. This information allows for targeted micronutrient application, optimizing the use of these essential elements and minimizing wastage. Precision agriculture not only enhances the efficiency of micronutrient utilization but also contributes to sustainable and resource-efficient farming practices. The trend towards precision agriculture in the context of micronutrients reflects a broader movement towards data-driven decision-making and technology adoption in Indian agriculture, providing farmers with tools to optimize nutrient management for improved crop yields and quality.

### Rising Demand for Customized Micronutrient Solutions

A notable trend in the Indian agricultural micronutrients market is the increasing demand for customized micronutrient solutions tailored to specific crops, soil types, and agro-climatic conditions. Different crops have distinct micronutrient requirements, and soil characteristics vary across regions. As farmers seek to address micronutrient deficiencies more effectively, there is a growing preference for micronutrient formulations that are customized to meet the specific needs of different crops and soils.

Manufacturers in the agricultural micronutrients market are responding to this trend by developing and promoting customized micronutrient blends. These formulations consider factors such as soil pH, organic matter content, and crop-specific nutrient demands. The customization trend aligns with the broader shift towards precision agriculture and targeted nutrient management, allowing farmers to optimize micronutrient application for diverse crops grown in varying agro-ecological zones. By offering a range of customized micronutrient solutions, the agricultural micronutrients market in India is catering to the evolving needs of farmers and supporting the sustainable intensification of agriculture.

### Segmental Insights

#### Form Insights

Based on the Form, in the Indian Agricultural Micronutrients Market, Chelated micronutrients are currently dominating over Non-Chelated micronutrients. This is

mainly due to their higher efficiency and effectiveness in plant absorption. Chelated micronutrients, with their unique structure, form stable complexes with the nutrients, preventing them from interacting with other elements in the soil. As a result, they provide a sustained and controlled release of essential nutrients, ensuring optimal uptake by the plants throughout their growth stages.

Moreover, the stability and controlled release of chelated micronutrients further contribute to their long-lasting impact on soil fertility and nutrient availability. This not only enhances crop yields but also promotes overall plant health and vigor. Farmers and agricultural professionals highly prefer chelated micronutrients due to their proven track record in delivering consistent results and improving the overall quality of crops. By harnessing the power of chelated micronutrients, farmers can achieve sustainable and profitable agriculture while minimizing the risks associated with nutrient deficiencies. The ability of chelated micronutrients to improve nutrient uptake, reduce nutrient loss, and promote balanced plant growth makes them an indispensable tool for modern farming practices.

## Type Insights

Based on type, in the Indian Agricultural Micronutrients Market, Zinc has emerged as the predominant micronutrient due to its essential role in addressing the widespread deficiency of Zinc in soils across the country. This deficiency has a significant impact on crop yield and quality, making it crucial to find effective solutions. The increased demand for Zinc-based micronutrients stems from the need to combat this deficiency and enhance agricultural productivity. By incorporating Zinc-based micronutrients into soil treatments, farmers can optimize nutrient uptake, promote healthy plant growth, and ultimately achieve higher crop yields. These micronutrients provide the necessary support for plants to develop strong root systems, improve water and nutrient absorption, and increase resistance to diseases and pests. The result is not only improved crop yields but also enhanced crop quality, leading to better market value and profitability for farmers.

Furthermore, the use of Zinc-based micronutrients contributes to sustainable agriculture practices by reducing the reliance on chemical fertilizers. This not only benefits the environment but also helps maintain the long-term health and fertility of the soil. By adopting such innovative solutions, the Indian Agricultural Micronutrients Market is paving the way for a more efficient and sustainable agricultural sector. The dominance of Zinc in the Indian Agricultural Micronutrients Market is a direct response to the prevalent Zinc deficiency in soils. By addressing this deficiency through the use of Zinc-

based micronutrients, farmers can unlock the full potential of their crops, achieve higher yields, and contribute to the overall growth and sustainability of the agricultural sector in India.

## Regional Insights

The Western region of India, specifically the states of Maharashtra and Gujarat, holds a significant stronghold in the Indian Agricultural Micronutrients Market. This dominance can be attributed to several factors. The region's agriculture practices are characterized by their intensity and efficiency, with farmers employing advanced techniques to optimize yield and productivity. Additionally, there is a high level of awareness among farmers in Maharashtra and Gujarat regarding the importance and benefits of using micronutrients in their agricultural practices. This knowledge empowers them to make informed decisions and adopt micronutrient-rich fertilizers and supplements to enhance crop quality and nutrition. The government of India has implemented supportive policies that incentivize and encourage the use of micronutrients in agriculture, further boosting the market's growth in the Western region.

## Key Market Players

Aries Agro Ltd.

Coromandel International Ltd.

Zuari Agrochemicals Ltd.

BASF India Ltd.

Deepak Fertilisers and Petrochemicals Corporation Ltd.

Clean Agro Fertilizer And Chemical Pvt. Ltd.

Yara Fertilisers India Pvt. Ltd.

Indian Farmers Fertiliser Cooperative Ltd.

Roop Rasayan Industries Pvt. Ltd.

DCM Shriram Farm Solutions

## Report Scope:

In this report, the India Agricultural Micronutrients Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

### India Agricultural Micronutrients Market, By Form:

Chelated

Non-Chelated

### India Agricultural Micronutrients Market, By Type:

Zinc

Cooper

Boron

Iron

Manganese

Others

### India Agricultural Micronutrients Market, By Mode of Application:

Soil

Foliar

Fertigation

Others

### India Agricultural Micronutrients Market, By Crop Type:



Cereals & Grains

Oilseeds & Pulses

Fruits & Vegetables

Others

India Agricultural Micronutrients Market, By Region:

North

South

West

East

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the India Agricultural Micronutrients Market.

Available Customizations:

India Agricultural Micronutrients Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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