

# Industry Outlook

AGRI BIOTECH COMPANIES

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Managing Director

## MICROSUN BIOPLANTS

Growing a Greener Future with  
Innovative Tissue Culture Technology

₹150





COVER STORY

Industry Outlook TOP 10  
**AGRI BIOTECH  
COMPANIES** 2024

# MICROSUN BIOPLANTS

## Growing a Greener Future with Innovative Tissue Culture Technology

India's agricultural biotechnology market is advancing rapidly and is focused on increasing crop yields, growing disease resistance, and optimizing farming. As global food security demands increase, biotechnology is critical to meet this demand, especially in India where agriculture is the key. Traditionally, suckers have been used for banana cultivation, which leads to inconsistent yields and disease vulnerability. Uniform plant growth, quality, and disease resistance are challenging for farmers, especially for export markets. To improve productivity, reduce risks, and meet domestic and global demands in an efficient manner, high-yield, disease-resistant planting materials are needed. It is critical for the future of banana cultivation.

Harikrishna Pothina  
Managing Director

A major player in tissue culture Banana plant production and supply, Microsun Bioplants (India) Pvt Ltd has emerged as a solution provider to these challenges. The company has a robust capacity to produce 25-30 million tissue culture plantlets per year and is a key supplier of virus-free, disease-resistant plants. Using tissue culture technology, each plant produced is uniform in growth, yield, and quality, as this technique allows mother plants to be cloned. Microsun Bioplants is responding to the need for high-quality planting material for the agricultural sector by providing genetically consistent and healthy plants especially as demand for bananas continues to grow both domestically as well as internationally.



One of the biggest benefits of Microsun Bioplants is that it enables uniform crop growth. Microsun Bioplants' tissue culture plants are different from the traditional ones, where farmers use suckers from multiple mother plants with different characteristics, so that all the plants in a field grow at the same rate, mature at the same time, and produce consistently. "The uniformity of the crop is

a key requirement for export quality, and this not only simplifies harvesting but also improves the market value of the crop. It also uses tissue culture, so the plants are free of the common viruses and diseases that plague banana crops, increasing the chances of success for farmers with less risk," says Harikrishna Pothina, Managing Director, Microsun Bioplants.



### Advanced Tissue Culture Technology

Advanced tissue culture techniques allow Microsun Bioplants to produce disease-free banana plants. The first step is to select elite, high-yielding mother plants, from which small meristematic parts are removed and grown in a laboratory. These parts are multiplied, rooted, hardened, and then readied to be planted in the field. This rigorous process takes nearly a year, and the company's commitment to this process means that the planting material can yield three times more than conventional methods.

This technology is a game changer in terms of uniformity. Banana farmers have traditionally suffered from erratic plant growth and uneven harvest times. However, Microsun Bioplants' grow predictably, in sync, which leads to more efficient farming and harvesting.

### Timely and Reliable Supply Chain

Timely delivery of plants is one of the most pressing issues for farmers. With planting schedules often determined by avoiding adverse weather conditions like high wind or summer heat, plants must get delivered on time. To tackle this problem, Microsun Bioplants produces year-round and ensures farmers get their orders when they need them so that they can plant at the right time. They need this capability precisely because they plan their planting schedules with a fine toothcomb, taking care to avoid losses and get the most yield from what they plant.

### Environmental and Sustainability Benefits

Besides improving the yield and quality of crops, tissue culture has several environmental benefits. In water-scarce regions of India, Microsun Bioplants' plants are grown through drip irrigation, which reduces water usage

by as much as 90 percent. Furthermore, the plants do not need a lot of chemical intervention because they are disease-resistant, which reduces pesticide use. In addition, the company is promoting biodiversity by preserving elite banana plant varieties to support more sustainable agricultural practices in the country.

### Support for Farmers and Training Program

Microsun Bioplants not only provides high-quality plantlets but also helps farmers through the entire cultivation process. The company provides step-by-step support from field preparation to fertigation to ensure the best results. This covers care of the plants, fertilizer schedules, and pest management recommendations, among other things. Technical support does not stop at planting, as farmers continue to get help as crops grow.

The company also helps in education as it provides training programs for students at both undergraduate and postgraduate levels. Tissue culture practice involving media preparation, plant propagation, and hardening is provided to students from national and international institutions. The students benefit from these programs, and so does India's biotechnology sector as a whole.



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### Wider Impacts of Tissue Culture on Agriculture

The adoption of tissue culture technology in agriculture generally and in banana cultivation in particular is part of a wider trend to modernize traditional farming methods. Mass production of disease-free, genetically consistent plants is made possible by tissue culture which is critical

to ensure food security in the face of climate change and increasing population pressure. With regards to banana farming, Microsun Bioplants' plants have raised yields by up to three times, which has a huge impact on farmers' income.

Government initiatives such as the National Horticulture Mission are employing subsidies and farmer education programs to promote tissue culture. Due to this, a higher number of farmers are shifting to this method to boost crop productivity and meet the growing need for good quality banana crops, majorly for the export markets. India's exports of bananas have been growing consistently, with market destinations including Iran, Iraq, and the United Arab Emirates. Traditional banana cultivation is not able to meet these demands and tissue culture can provide a solution for scaling up production.



### Future Growth and Expansion

Experts are predicting a doubling of banana cultivation in the coming years, making the future of banana cultivation in India look a lot more prosperous. Microsun Bioplants, which already has a dominant share of the market, wants to expand its production capacity to meet the increasing demand. Currently, the company is working to expand its research and development capabilities to better improve the quality of its plants and to identify new crop varieties.

Microsun Bioplants is also helping to create jobs in the agriculture sector, employing more than 400 people in its laboratory and nursery operations. The company's presence is not only limited to direct employment, it also supports a wider network of farmers, transporters, and vendors and in the process promotes the economic growth of rural regions. [\[1\]](#)

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IS PROUD TO PRESENT

**MICROSUN BIOPLANTS**

AS ONE OF THE

TOP 10

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2024

*in acknowledgement of its unwavering focus and dedication  
to achieve excellence in quality and delivery in this field.*

*Sudhakar Singh*

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Managing Editor  
Industry Outlook