

Case Study

Impact Of MagicGro Solutions On Bunch Weight, Plant Health And Disease Resistance In Banana



Executive Summary

Banana is one of India’s most commercially significant fruit crops, yet farmers across major banana belts continue to face productivity challenges due to soil fatigue, unpredictable weather, and increasing fungal pressure.

To support sustainable banana farming, we introduced a range of MagicGro solutions, to restore soil biology, enhance nutrient uptake, and strengthen plant immunity. Over the last five years, more than 300 farmers across Jalgaon (Maharashtra) and Surat (Gujarat) have integrated MagicGro into their cultivation programs with consistently high field performance.



Overview:

Region	Jalgaon District (Maharashtra) & Surat District (Gujarat), India
Crop	Banana
Farmer Adoption	300+ farmers over 5 consecutive seasons
Climate	Semi-arid to tropical; high susceptibility to fungal infection under humidity
Cultivation Practice	Regular fertilizer schedule + MagicGro Solutions (integrated microbial treatment)

Critical Problems

- Declining soil biological activity affecting nutrient availability
- Irregular fruit development and lower average bunch size
- Rising fungal infections during high humidity periods
- Increasing cultivation cost vs stagnating yield returns



Proposed Solution For Sustainable Banana Farming

The solution was based based on synergistic microbial functions:

<i>Product</i>	<i>Primary Function</i>
MagicGro Super	Strengthens overall plant growth, improves nutrient uptake, enhances photosynthetic efficiency, supports fruit filling & bunch weight
MagicGro Plus B	Increases fungal tolerance, fortifies plant defense pathways, reduces infection damage, supports healthy bunch development

Benefits Observed:

- Rebuilds microbial diversity in the rhizosphere and phyllosphere
- Enhances root nutrient absorption for robust plant structure
- Activates biochemical pathways responsible for stress and disease resistance
- Reduces chances of fungal infection at critical growth stages

Product Application Schedule:

MagicGro Super and MagicGro Plus B were applied alternately every month along with regular fertilizer program without requiring major changes in farmer practice.

<i>Month / Stage</i>	<i>Product</i>	<i>Dosage</i>	<i>Method</i>
Month 1 (Planting / Establishment)	MagicGro Super	500 g / 200 plants	Soil drench
Month 2	MagicGro Plus B	500 g / 200 plants	Soil drench
Month 3	MagicGro Super	500 g / 200 plants	Foliar application + Soil drench
Month 4	MagicGro Plus B	500 g / 200 plants	Foliar application
Month 5	MagicGro Super	500 g / 200 plants	Foliar application
Month 6	MagicGro Plus B	500 g / 200 plants	Soil drench + Foliar application



Key Observations And Results

Parameter	Untreated (Regional Avg.)	MagicGro Super + MagicGro Plus B
Average Bunch Weight	18–20 kg/plant	~25 kg/plant (consistent across 5 years)
Plant Vigor	Moderate	Strong pseudostem & canopy
Uniform Fruit Filling	Low	High uniformity & marketable quality
Fungal Losses	Recurring during rainy season	Strong reduction; minimal loss
Cost of Cultivation	Higher	Lower (less dependence on fungicides)

Final Outcomes

- 91% increase in square formation, leading to improved boll numbers
- 15–20% improvement in boll retention, reducing yield losses during stress periods
- 40% increase in cotton yield per acre under rainfed, drought-prone conditions
- 47% rise in farmer income, driven by higher boll retention and harvest weight
- Enhanced drought and moisture-stress tolerance, validated across multiple talukas in Vidarbha

Overall, the study established MagicGro Super as a powerful and field-proven intervention for sustainably improving cotton productivity. By strengthening plant vigor and resilience especially under rainfed and climate-stress conditions MagicGro Super delivered higher yield and income, offering a reliable pathway to climate-resilient and profitable cotton cultivation.



