

MicrobeBio®

REVOLUTIONIZING  
COMMERCIAL  
FARMING:  
MICROBEBIO 100%  
ORGANIC MICROBIAL  
SOLUTIONS  
POWER PREMIUM  
INTERCROPPING  
SYSTEMS FOR  
HIGHER YIELDS,  
SUPERIOR QUALITY,  
AND GENERATIONAL  
SOIL HEALTH





## Orchard Soil **Regeneration Cropping**



As a microbial company focused on sustainable intensification and regenerative practices, Microbebio evaluated countless systems that balance productivity with long-term ecosystem health. Intercropping—growing two or more compatible crops simultaneously on the same land—stands out as a proven strategy for commercial farming. It maximizes land-use efficiency, diversifies income streams, spreads production risks, and naturally mitigates pests and diseases through increased biodiversity and complementary resource use.

When paired with MicrobeBio's advanced 100% organic microbial solutions, intercropping transforms into a powerhouse for producing premium crops: higher yields, better-tasting and nutrient-dense produce, enhanced shelf life, robust natural pest and disease control, and significantly improved soil fertility for future generations. MicrobeBio, a leading microbial technology company, develops specialty biofertilizers, biopesticides, and biofungicides using plant growth-promoting microorganisms (PGPMs)—including nitrogen-fixers, phosphate-solubilizers, potassium-mobilizers, mycorrhizal fungi, and biocontrol strains. These microbes colonize roots and soil, unlocking nutrients, stimulating growth hormones, boosting photosynthesis, inducing systemic resistance, and suppressing pathogens organically.



# **THE SCIENCE OF INTERCROPPING SUCCESS: 20 PROVEN COMMERCIAL COMBINATIONS**

Intercropping thrives when crops have complementary growth habits, nutrient demands, rooting depths, and maturity timelines, minimizing competition while maximizing synergies. Key principles include proper spacing (inter-row and intra-row), diverse nutrient cycling, and biodiversity for ecological stability.



## Maize + Beans

MAIZE OFFERS SUPPORT/  
SHADE; BEANS FIX N.

SPACING:

**MAIZE 75 CM × 25-30 CM;**

**BEANS BETWEEN ROWS**

**50 CM × 10-15 CM.**



## Maize + Groundnuts

GROUNDNUTS SUPPRESS  
WEEDS, FIX N. SPACING:

**MAIZE 75 CM × 25-30 CM;**

**GROUNDNUTS 45-50 CM**

**× 10-15 CM.**



## Banana + Beans

BEANS BOOST N  
BEFORE CANOPY  
CLOSURE. SPACING:  
**BANANA 3 M × 3 M;**  
**BEANS 50 CM × 15 CM.**



## Banana + Ginger

GINGER BENEFITS FROM  
SHADE/MOISTURE.  
SPACING:  
**BANANA 3 M × 3 M;**  
**GINGER 30-40 CM ×**  
**20-25 CM.**



## Cassava + Ginger



MAIZE PROVIDES EARLY HARVEST. SPACING:  
**CASSAVA 1 M × 1 M;**  
**MAIZE 75 CM × 25-30 CM.**



## Beans + Cassava



BEANS ADD FERTILITY/  
INCOME. SPACING:  
**CASSAVA 1 M × 1 M;**  
**BEANS 50 CM × 15 CM.**

## **SORGHUM + COWPEAS**

COWPEAS FIX N, SUPPRESS WEEDS. SPACING: SORGHUM 75 CM × 20 CM; COWPEAS 60 CM × 20 CM.



**Millet + Groundnuts**

## **COFFEE + BANANAS**

BANANAS SHADE/PROTECT YOUNG COFFEE. SPACING: COFFEE 2.5 M × 2.5 M; BANANA 3 M × 3 M.



**Sorghum + Cowpeas**

## **MILLET + GROUNDNUTS**

GROUNDNUTS REDUCE EROSION. SPACING: MILLET 60–75 CM × 20 CM; GROUNDNUTS 45 CM × 10–15 CM.



**Coffee + Bananas**



Coffee + Beans



Cocoa + Plantain



Cocoa + Cassava



## COFFEE + BEANS

(YOUNG PHASE) — BEANS PROVIDE N/INCOME. SPACING: COFFEE 2.5 M × 2.5 M; BEANS 50 CM × 15 CM.

## COCOA + PLANTAIN

PLANTAIN TEMPORARY SHADE. SPACING: COCOA 3 M × 3 M; PLANTAIN 3 M × 3 M.

## COCOA + CASSAVA

(EARLY) — CASSAVA FOR INCOME. SPACING: COCOA 3 M × 3 M; CASSAVA 1 M × 1 M.

## MANGO + GROUNDNUTS

GROUNDNUTS IMPROVE  
SOIL IN ORCHARDS.

SPACING:

**MANGO 8 M × 8 M;**  
**GROUNDNUTS 45 CM ×**  
**10-15 CM.**



Mango + Cowpeas

## COCONUT + PINEAPPLE

PINEAPPLE USES WIDE  
SPACING/SHADE TOLERANCE.

SPACING:

**COCONUT 8-9 M × 8-9 M;**  
**PINEAPPLE 90 CM × 30-45**  
**CM.**



Mango + Groundnuts

## MANGO + COWPEAS

COWPEAS ADD N/COVER.

SPACING:

**MANGO 8 M × 8 M;**  
**COWPEAS 60 CM × 20 CM.**



Coconut + Pineapple



**Coconut + Banana**



**Oil Palm + Maize**



**Cassava + Oil Palm**



## COCONUT + BANANA

BANANA FOR EARLY INCOME/  
COVER. SPACING:

**COCONUT 8-9 M × 8-9 M;  
BANANA 3 M × 3 M.**

## OIL PALM + MAIZE

(EARLY) — MAIZE FOR  
INCOME. SPACING:

OIL PALM 9 M × 9 M;  
MAIZE 75 CM × 25-30 CM.

## OIL PALM + CASSAVA

(EARLY) — CASSAVA  
MATURES QUICKLY.  
SPACING:

OIL PALM 9 M × 9 M;  
CASSAVA 1 M × 1 M.



## Tomato + Onion

**ONION REPELS  
PESTS; DIFFERENT  
ROOT ZONES.  
SPACING:**

**TOMATO 75–90 CM ×  
45–60 CM;  
ONION 30 CM × 10 CM.**



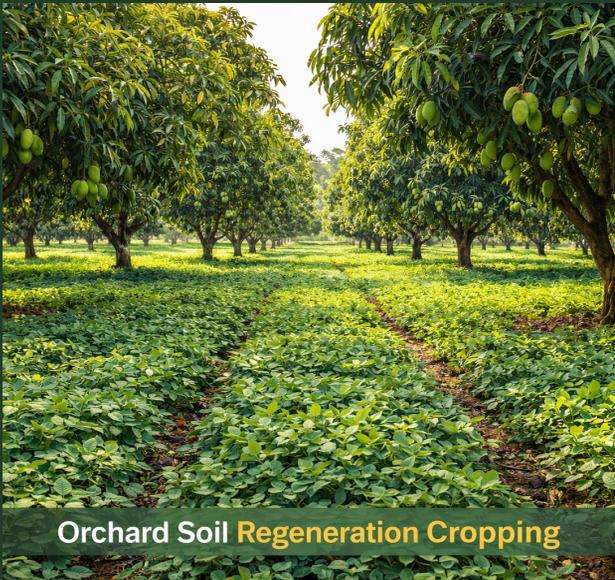
## Cabbage + Lettuce

**LETTUCE EARLY  
MATURITY. SPACING:**

**CABBAGE 60 CM × 60 CM;  
LETTUCE 30 CM × 30 CM.**

These systems boost land equivalent ratios (LER) often >1.2–1.6, meaning 20–60% more productivity per hectare than monocultures.

# MICROBEBIO AMPLIFIES INTERCROPPING BENEFITS: PREMIUM CROP OUTCOMES



Orchard Soil **Regeneration Cropping**

MicrobeBio's microbial consortia (e.g., Nature Phenom series, Rhizo Activator, Hydro Activator, X-series biocontrols) integrate seamlessly into intercropping. Applied as soil/seed treatments, granulars, or foliar sprays, they:

**Enhance Yields** — Trials show 12–25% increases in biomass/yield; intercropping + biofertilizers boost grain yields ~23% via better nutrient cycling and root synergies.

**Improve Taste & Quality** — Higher Brix, antioxidants, vitamins from optimized nutrient uptake and hormone stimulation → premium, flavorful produce.

**Extend Shelf Life** — Balanced nutrition firms cell walls, slows senescence, reduces post-harvest losses.

**Control Pests/Diseases** — Biocontrol strains (X2 fungi, X3 insects, X5 biofungicide) outcompete/suppress pathogens; diversity + microbes reduce pest pressure 20–30%.

**Build Generational Soil Health** — Increase organic matter, remediate salinity/heavy metals, sequester carbon, improve structure/water retention for resilient future cropping.



# MICROBEBIO 100% ORGANIC VS. TRADITIONAL CHEMICAL FERTILIZERS/ PESTICIDES: **SUPERIOR FOR HUMAN, ANIMAL, AND ENVIRONMENTAL HEALTH**

Traditional synthetics deliver short-term boosts but degrade soils (compaction, nutrient lockup, reduced biology), pollute waterways, emit GHGs, and leave residues. Workers face exposure risks; consumers ingest potential endocrine disruptors/neurotoxins; livestock consume contaminated forage; wildlife suffers from runoff.

MicrobeBio's organic microbial solutions excel:

**Zero Toxic Residues** — Produce is clean, safe for direct consumption/ processing; no interference with beneficial microbes.

**Human Health** — Eliminates spray hazards; boosts crop nutrient density (vitamins/antioxidants) for better diets;

supports regenerative practices reducing pollution-linked diseases.

**Animal Health** — Residue-free byproducts safer for feed; healthier ecosystems protect pollinators/wildlife.

**Environmental Edge** — Enhances biodiversity, sequesters carbon (up to 25% more in trials), minimizes runoff/ emissions, remediates degraded soils.

**Economic Sustainability** — Cuts chemical inputs 20–50%, lowers costs, builds fertility over time—ideal for commercial viability.

In intercropping, MicrobeBio magnifies natural synergies: legumes fix N amplified by PGPMS; diverse roots/ microbes improve nutrient/water efficiency; biodiversity + biocontrols slash pest needs.



## **THE PATH TO PREMIUM, SUSTAINABLE COMMERCIAL FARMING**

Intercropping with MicrobeBio delivers high-yield, premium-quality crops while regenerating soil for generations. Farmers gain diversified income, resilience, and market premiums for clean, nutrient-rich produce. This approach aligns with global demands for sustainable, health-focused agriculture.

Explore [MicrobeBio.com](https://www.microbebio.com) for products, guides, and trials tailored to your intercropping system. Transition to microbial-powered farming—higher profits, healthier people/ animals, thriving soils.



**MicrobeBio<sup>®</sup>**

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**#MicrobeBio #OrganicFarming #RegenerativeAgriculture #Intercropping #SustainableAgriculture #Biofertilizer #SoilHealth #PremiumCrops  
#OrganicMicrobes #FarmFuture #MicrobialSolutions #HighYieldFarming #NaturalPestControl #SoilRegeneration #CleanAgriculture GenerationalFarming #OrganicProduce**



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