

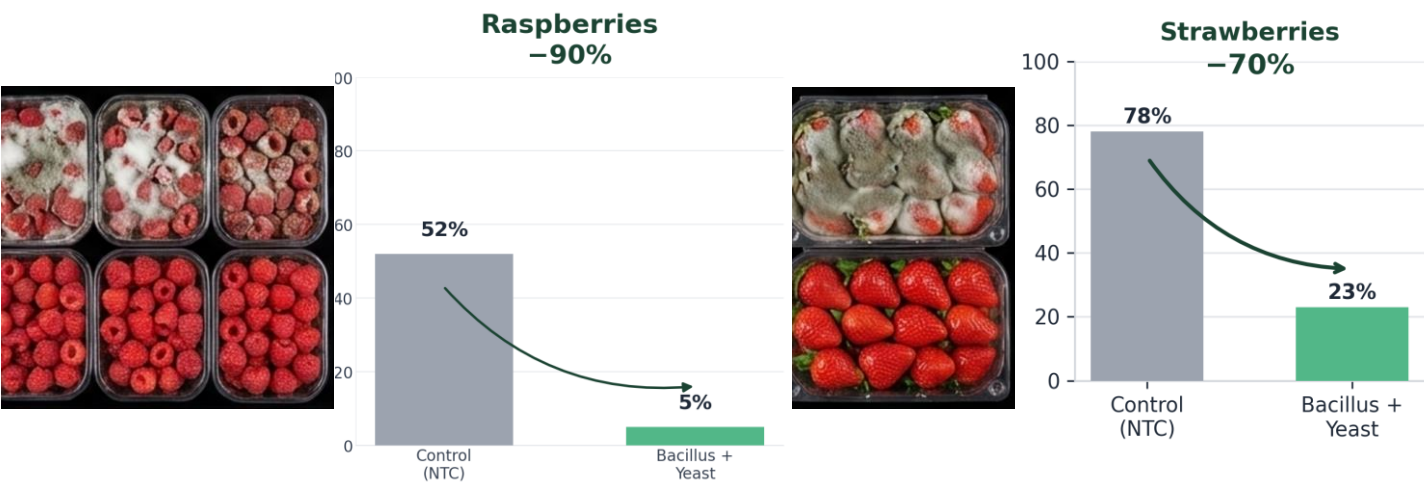
ENGINEERING BEYOND SINGLE MICROBES

A smarter way to keep fresh-produce fresh, engineered by nature, powered by microbiome science.

Concept: Most produce treatments fight one pathogen at a time and lose ground as resistance builds. We take a different approach: **microbiome engineering**.

Our proprietary Bacillus and yeast consortium doesn't just target harmful microbes. It re-engineers the entire microbial community on the fruit's surface, tipping the balance toward long-lasting freshness.

VISUAL RESULTS: DRAMATIC DECAY SUPPRESSION

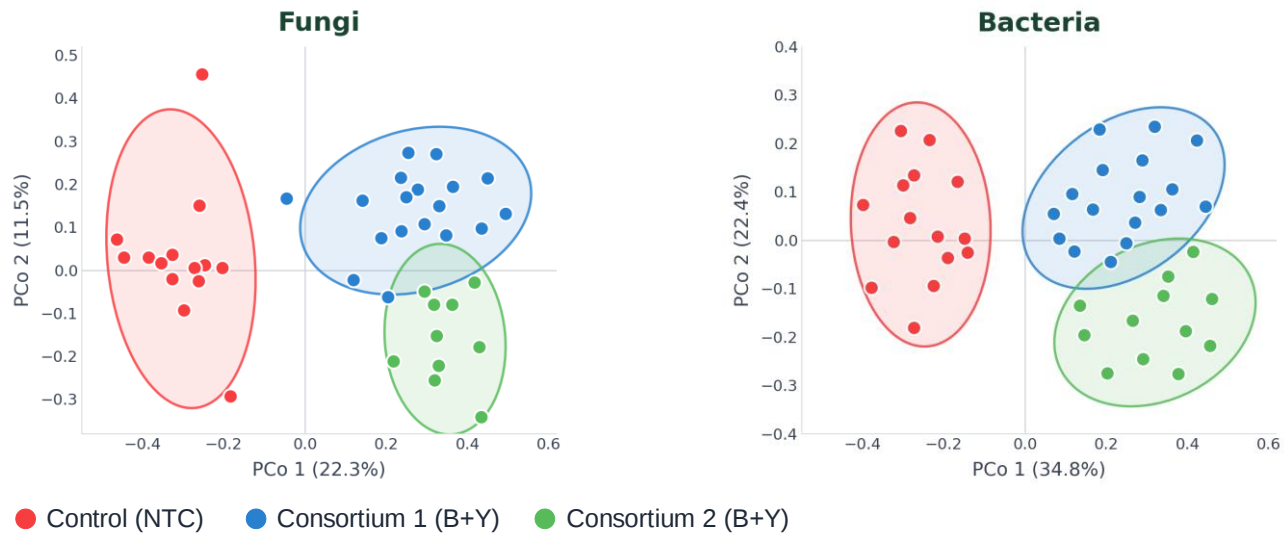


In controlled trials, fruit treated with the Bacillus + yeast consortium showed up to 90% less rot in raspberries and 70% less rot in strawberries, compared to untreated controls (NTC).

-90% Rot Reduction in Raspberries	-70% Rot Reduction in Strawberries	100% → 25% Strawberry Infection Rate
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SCIENTIFIC EVIDENCE: COMMUNITY RESTRUCTURING

Metabarcoding analysis confirms it's not a coincidence. The consortium restructures both the fungal and bacterial communities living on the fruit.



Beta-diversity (PCoA) analysis: treated fruit clusters distinctly apart from untreated controls, evidencing a re-engineered microbiome that drives disease suppression.

THE "SYNERGY ENGINE" MECHANISM

1

Reconfigure the Community

The consortium takes charge, shifting bacterial populations and fungal makeup toward a distinctly healthier microbiome state.

2

Build Ecosystem Resilience

It occupies available space, consumes the nutrients pathogens need, and secretes enzymes that break down fungal cell walls.

3

Suppress Pathogens & Decay

The result: a balanced microbial surface that halts decay naturally, cutting strawberry infection rates from 100% down to 25%.

Ready to extend shelf life — naturally?

Let's talk about bringing microbiome engineering to your supply chain.

www.ducura.com