Driving the Future of Thai Agriculture with Bio-Innovation and Deep Tech

AGREENOVATION

Agricultural Green Innovation

Solutions for National Sustainability

Green Inno Thai

Vision

Leading the Transition from Chemical-Based to Bio-Driven Agriculture

Deep Tech Innovator

Advanced R&D & Industrial Production

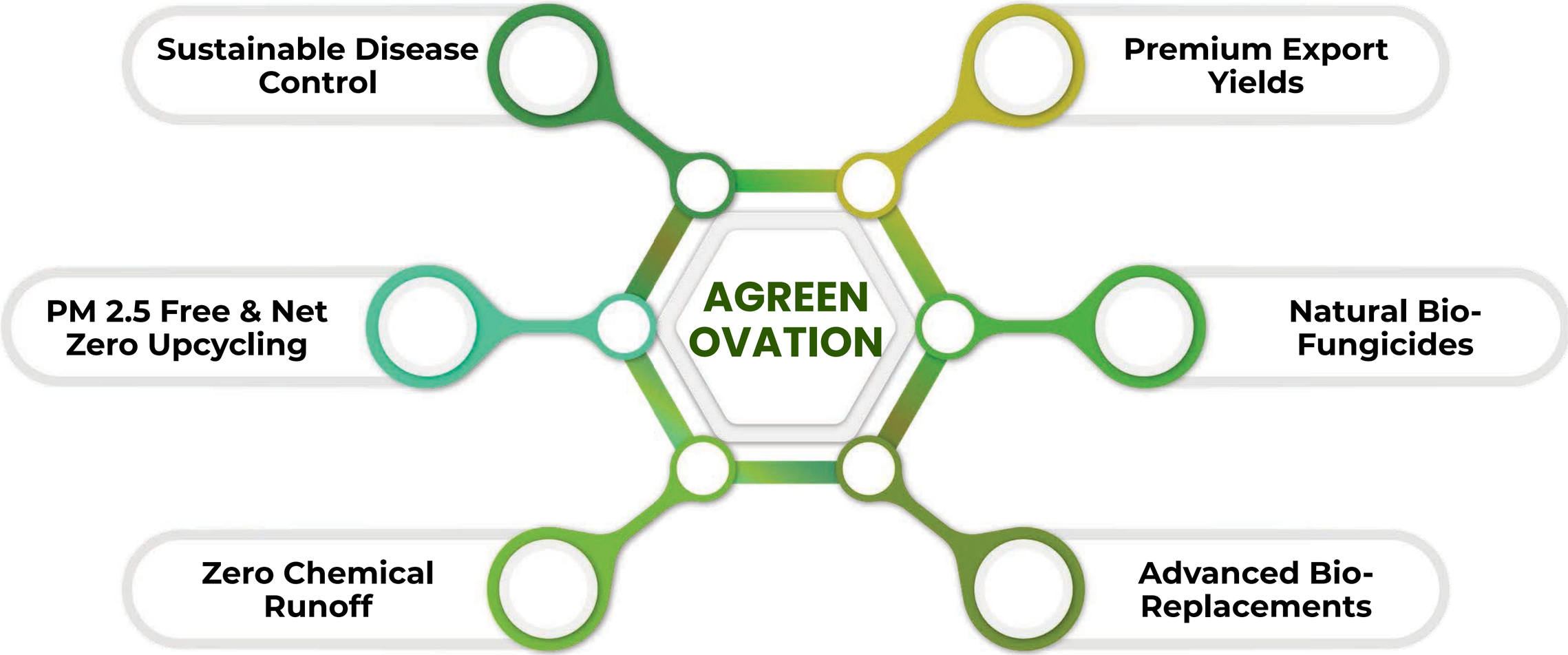
Tangible Results

Chemical Replacement & Yield Maximization

Sustainable Future

Zero-Residue Ecosystem & Global Standards

Core Capabilities & Technologies



The Green Inno Thai Innovation Ecosystem

Outcome
National Food Security & Sustainable Impact

Engine
R&D and Collaboration

Framework
BCG Economy Model

Foundation
ESG Principles

THE FOUNDATION:
OUR COLLABORATION ECOSYSTEM

We believe that true innovation stems from synergy. Our “**Triangle of Collaboration**” combines our private sector agility with the deep expertise of government agencies and leading academic institutions to accelerate development and create real-world impact.

Private sector

Government Agencies

Academic Institutions

National Agri-Crisis

4 Critical Challenges
Holding Back Thai Agriculture

Fertilizer Dependency

Volatile prices & 100% import dependency

Soil Degradation

Acidic soil & microbial depletion from chemical overuse

PM2.5 & Climate Change

PM2.5 from crop burning & rising GHG emissions

Global Trade Barriers

Export pressure from CBAM & Zero Residue regulations

Green Inno Thai Solution

Bioreplacement

The Sustainable Way Forward

- Performance Equivalency
- Waste to Wealth / Circular Economy
- Scalability & Stability
- Unlocking Global Trade Barriers

Biotech Innovators

We are Innovators, Not Just Traders:

- Creators, Not Just Consumers
- Science-Backed Solutions
- Scalable Innovation: From Lab to Land
- Value Chain Upgrader

Our Core Biotech Solutions

Agricultural Biologicals

Replacing chemical inputs with high-efficiency microbes and natural extracts.

Upcycling Ag-Waste

Turning "Trash" into "Treasures" From Agricultural Waste to Soil Wealth

Zero Residue Yields

Elevating crop quality to meet global trade standards.

Upcycling Ag Waste

Building A Zero Waste Rice Ecosystem

Upcycling Ag-Waste:
Building a Zero-Waste Rice Ecosystem

Synbota Technology

(Microbial Consortium)

Advance Biochar

(Slow-Release innovation)

Bio-Herbicide

(The Future Pipeline)

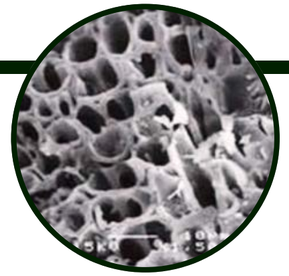
Upcycling Ag-Waste:
Building a Zero-Waste Rice Ecosystem

Synbota Technology
(Microbial Consortium)

A stubble-degrading microbial innovation (Tech Transfer from the Department of Agriculture) that decomposes rice straw in just 7-10 days. It returns essential N-P-K to the soil, offering a sustainable solution to stop crop burning and eliminate PM 2.5.

Advance Biochar
(Slow-Release innovation)

Upcycling up to 2,000 tons/day of rice husks into highly porous biochar. It acts as a slow-release nutrient carrier, minimizing fertilizer loss and restoring long-term soil health



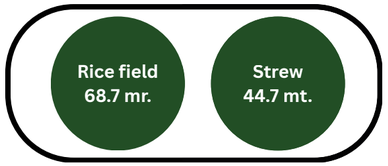
Bio-Herbicide
(The Future Pipeline)

A joint research initiative with Naresuan University (Supported by TISTR): Converting rice bran residue into a powerful bio-herbicide, completing our ultimate Zero-Waste loop.

Stubble Solution

Zero Burning Agriculture

The Crisis

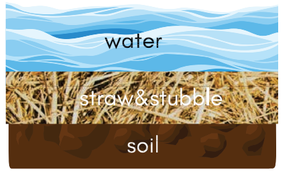


Thailand's Rice Area & Strew Volume

The Air Quality Crisis

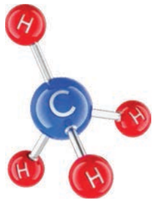
The Net Zero Barrier

The Hidden Global Warmer 28xCO2



Water logging

Anaerobic condition
Straw decompose by methanogens



Methane (CH4) release

Source: DOAE, TGO

The Deeptech & Green Impact

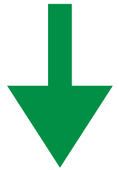
Deeptech

Tetra-biotics formulation
Government-Backed Innovation (DOA)

Accelerated Degradation

Green Impact

The Zero-Waste Results



Reduces chemical fertilizer usage by 20-30%
1.292 THB/rai

Source: DOA, CMU-DC

Biochar Revolution

Beyond Biomass Energy

The Current Reality

Raw material | Current Utilize | MIssing Link

The Deep Tech Leap

Deep Tech | Green Impact

Bio-Herbicide Innovation

Zero Chemical Farming

The Missing Link

The Overlooked Challenge

The By-Products

Defatted Rice Bran
Undervalued raw material

Downcycled into animal feed or compost for less than 10 THB/kg.

Toxic&Harmful Residues
in soil/water ecosystem

The Chemical Threat

>4,000 patients/year

>฿20 Billion cost in healthcare & economic loss

Severe Health Risk
number of patients and costing

The Deeptech & Green Impact

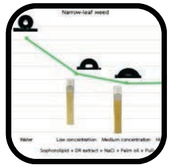
Deeptech

Allelopathy & Nano-Emulsion Technology

- Bioherbicide
- Biosurfactant

Green Impact

The Proven Results



Biological Super Spreader

Rapid Action (3 days)

Source of health impact data: Ministry of Public Health (MoPH) & Thailand Pesticide Alert Network (Thai-PAN)

Agricultural Biological

The Total Bio-Shield Ecosystem

Agricultural Biological

The Total Bio-Shield Ecosystem

The Yield Threat

Chemical Dependency & Resistance

Locked Soils & Degraded Land

Weakened Plant Immunity

Deep Tech & Green Impact

Advanced Microbiome Engineering

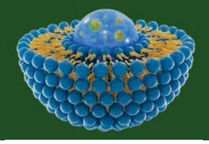
- **Biocontrol Agents:**
  - Antagonistic Microbes
  - Insecticidal Microbes
- **Biofertilizer**

Tech Transfer: DOA

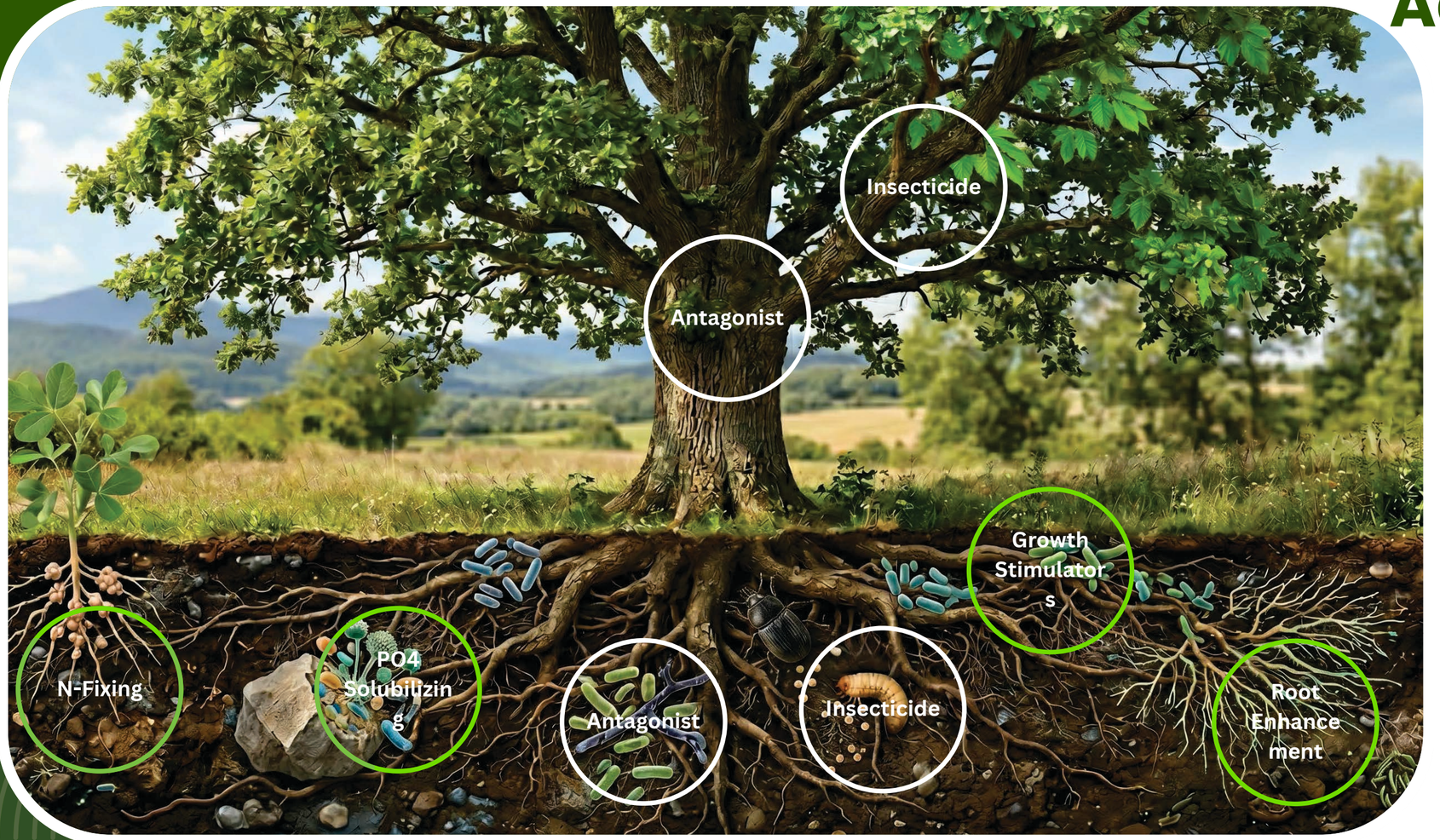
The Deep Tech Breakthrough

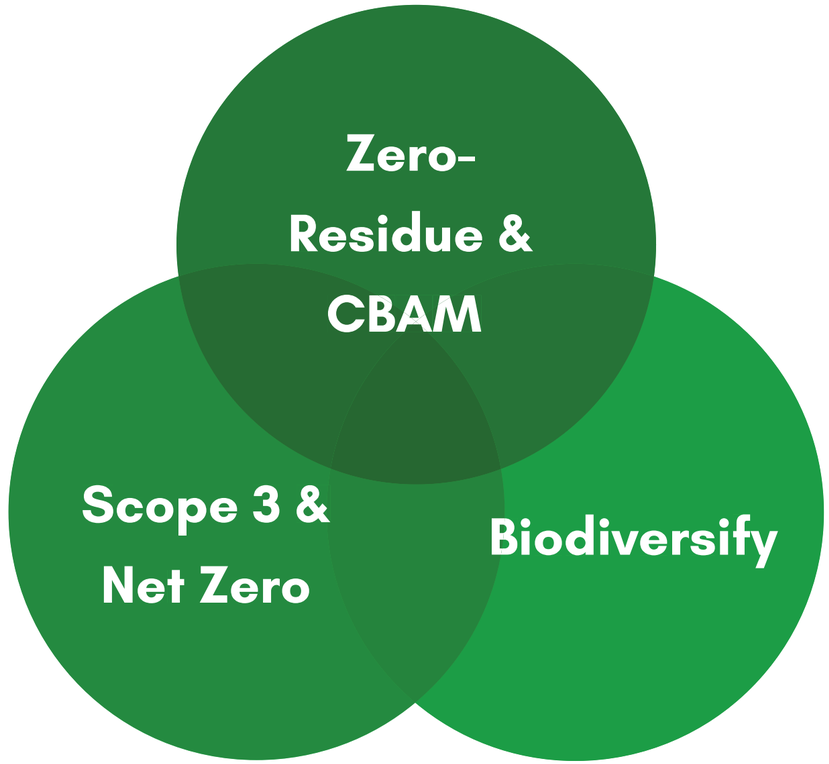
Nano Phyto COS

Glyco Phyto Shield Nano Conjugation Technology



Advance Microbiome Engineering





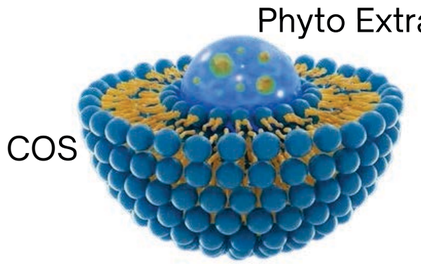
Green Impact

Pathogens	% Inhibition
Phytophthora spp.	90.26
Pythium spp.	79.22
Fusarium sp.	76.79
Phomopsis sp.	76.30
Phoma spp.	73.21

"Nano Phyto COS is an advanced bio-protectant that uses nano-technology to instantly boost plant immunity and suppress pathogens, ensuring premium yields with zero chemical residue."

The Deep Tech Breakthrough

Nano Phyto COS - Advance Bio Protectant



Nano Phyto Chito Oligosaccharide Encapsulation

- **Nano Delivery System**
- **Dual Action Defense**
- **Premium Yield Protection**

Zero Residue Yields

Maximizing Crop Potential

Zero Residue Yields

Maximizing Crop Potential

The Yield Limit: Hidden Cost

Chemical Stress

Overuse of chemical stimulants causes rapid tree degradation & soil damage.

Inefficient Application

High product loss from wash-off & poor leaf absorption wastes money

Weather Volatility

Climate extremes stunt growth and lower crop quality

The Deeptech & Green Impact

Advance Plant Elicitor

Unlocking Crop Potential

Li-COS

Lipo Chito Oligo Saccharide

GlyPhy Con

Glyco Phyto Shield Nano Conjugation

Rapidly recovers stress & exponentially boosts fruit sizing, color, and sweetness (e.g., Durian)

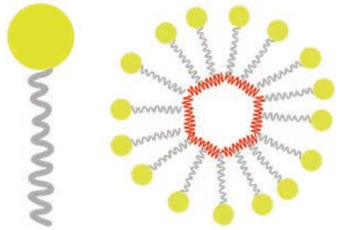
NANO-SOS

Nano-Synoligo saccharide

Natural latex enhancer. Replaces Ethephon and sustainably prolongs tree lifespan.

Synbiobot Technology

Smart Adjuvant



Maximizes dispersion & deep cellular penetration. Prevents wash-off, reduces waste, and amplifies all input efficacy

ใส่รางวัล

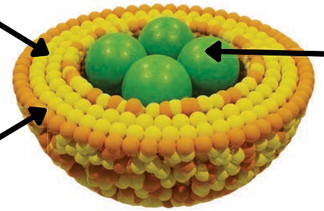
Fruit Expansion:
≥ 20%
weight increase

Premium Starch Content:
38-40%
accumulation

Glyco Phyto Shield Nano Conjugation

Synsaccharide
COS, Glucose Fructose, Sucrose, Sorbitol

- Bio-shield
- Instant Energy
- Immune Booster



Phyto Extract
- Anti-pathogens

17 Amino Acids
- Bio-transport

Antifungal Efficacy (7 Days)

Control

Synsaccharide
Effectively Inhibits Fungal Growth

Other Commercial Foliar Sugars
Promotes Fungal Growth

Li-COS Technology

Natural Plant Elicitor

Visual Evidence

The Technology
Lipo-Drive & Plant Vax Mechanisms

Technology

A synergistic integration of Lipid molecules and Chitooligosaccharide (COS)

Mechanism

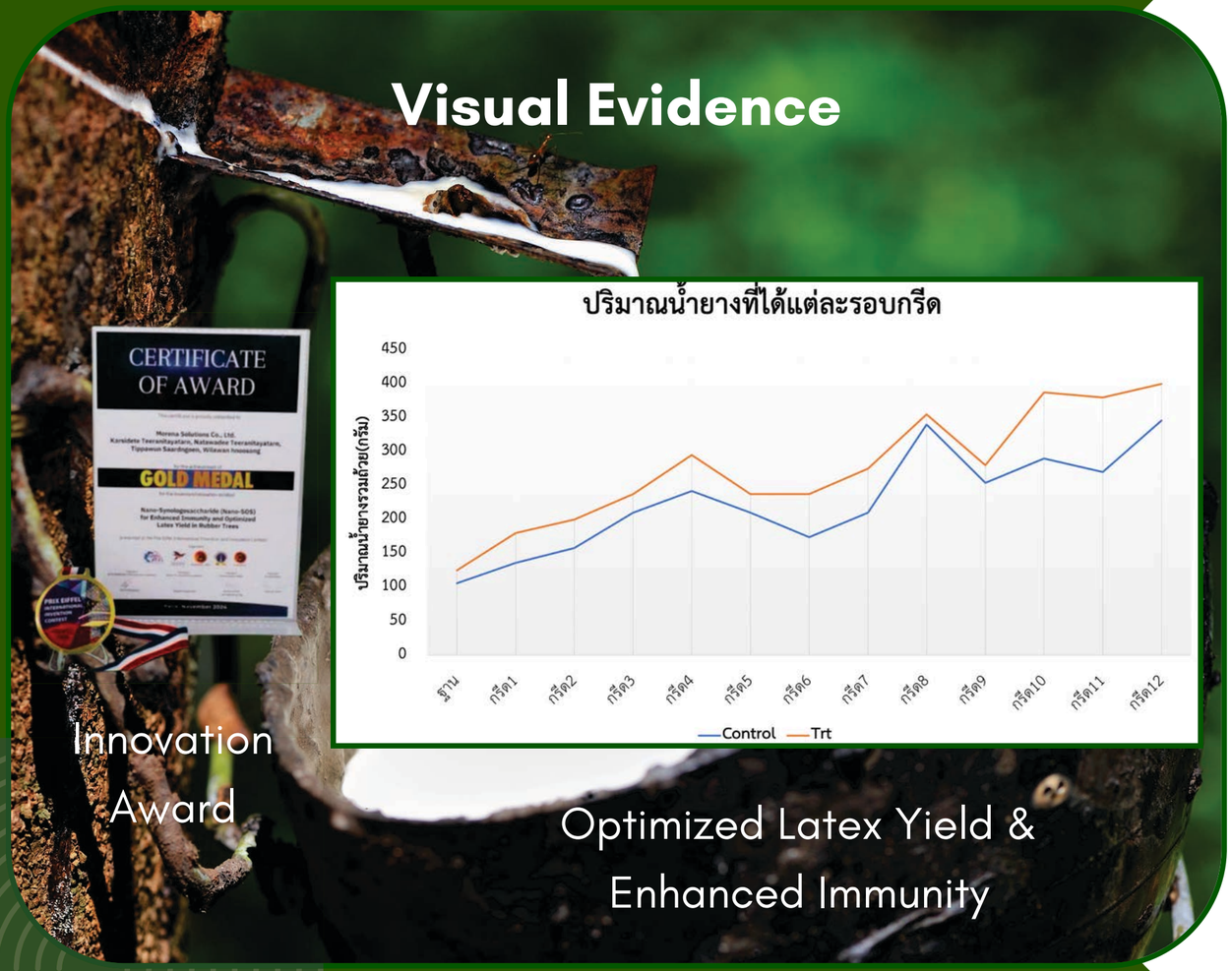
Cellular Lipid-Intake & Immunity Activation

NANO-SOS

Zero Chemical Farming

Deep Tech & Proven Results

Visual Evidence



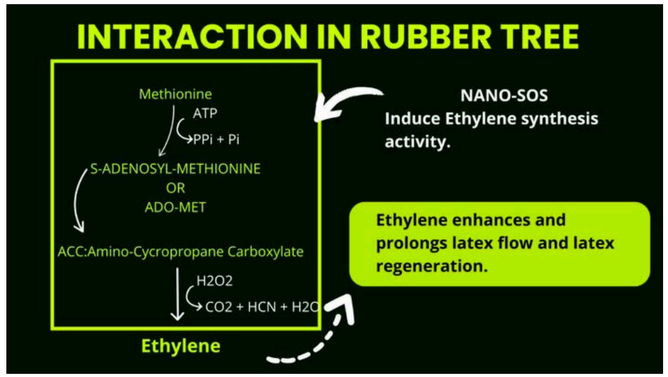
Innovation Award

Optimized Latex Yield & Enhanced Immunity

Technology

Nano-Synoligo saccharide Elicitor+Precusor

Mechanism



Proven Results

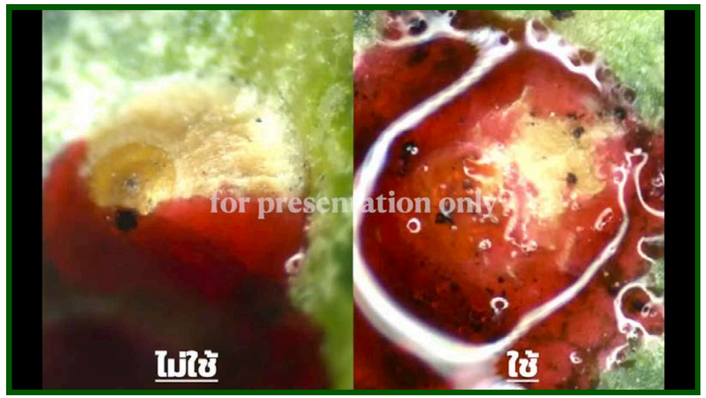
- 100% Chemical Replacement
- Sustainable Yield
- Global Recognition

Synbiobot

The Intelligence Delivery System

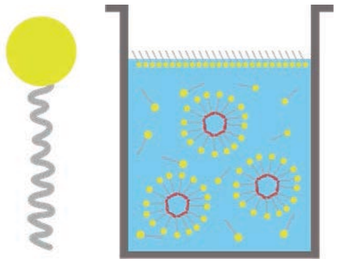
Visual Evidence

Efficacy Comparison



Deep Tech & Proven Results

Technology



Organo-silicone

Proven Results

- Zero Wash-Off
- Maximizing ROI

Mechanism

Dispersion

Coverage

Adhesion

Penetration

Maximizing ROI
through Agricultural Innovation

3 Pillars of Financial Growth

Zero-Waste Efficiency

Premium Value Creation

Asset Longevity

National-Scale Production Readiness

Translating Deep Tech Innovations into Commercial Reality

Industrial Scale Production & QC

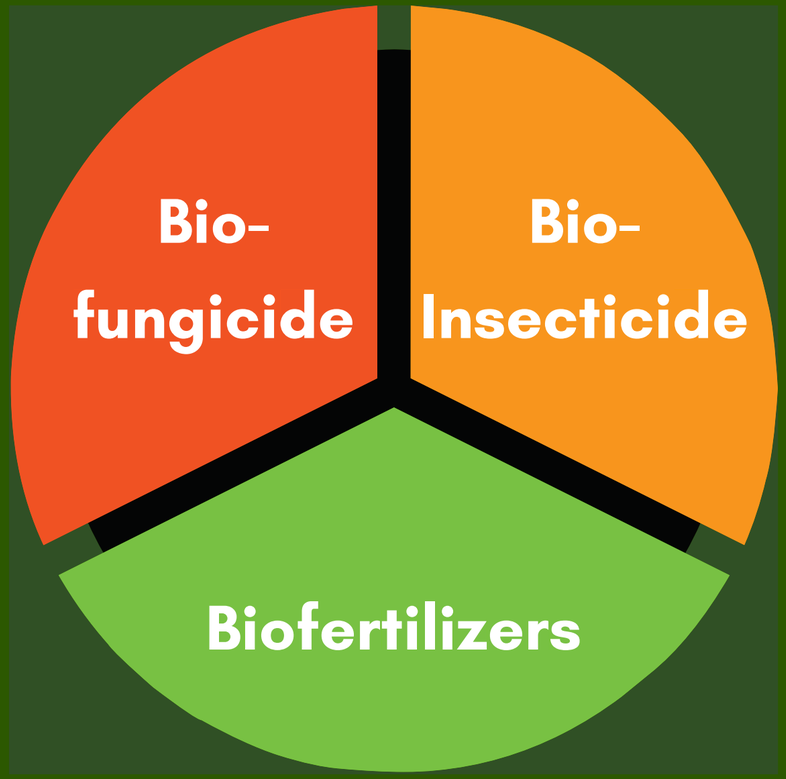
Manufacturing Standard

- Technology transfer from DOA
- Production License
- Biocontrol Agent Registration
- Organic Thailand Certification
- Thai Innovation List
- Petty Patent

Green Inno Thai

Production
Portfolio & Capacity

Scaling Innovations for
National Impact



Core Product Lines

Production Capacity

10 Tons/day

per product line

Proven Track Record

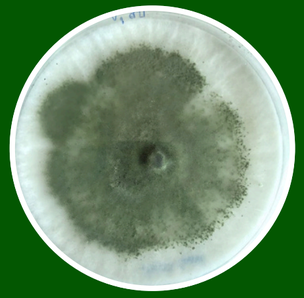
> 1,500 Tons Delivere

Yr 2025

Absolute Quality Assurance (QA/QC)

The 3-Dimensional Quality Control

Quantitative Standard

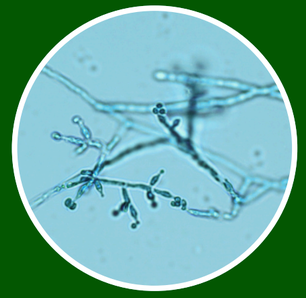


Spore Count / CFU)
DOA Compliant

Qualitative Efficacy

Pathogen Eradication Test)

Genetic Verification



Strain Verification

R&D & Continuous Innovation

Pioneering the Future of Sustainable

Advanced Microbial Selection & Consortium

Next-Gen Smart Delivery Systems

National Problem-Solving Formulations

Collaborative Research Ecosystem

Customized Formulation Capabilities

Agile & Customized R&D

Application-Specific Formulations

Ultra-Soluble for Drones & Fertigation

Crop-Specific Solutions

High-Value Crop Optimization: Durian

Market-Driven Tiers

From Fighting to Premium Brands

Climate-Resilient Formulations

Heat & UV Tolerant Microbes

Export-Compliant & Zero-Residue

Strict MRL Compliance

Enhanced Shelf-Life Stability

Prolonged Viability

National Pilot Project: The Pichit Model

Phichit Smart Aroma Rice - Elevating Local Identity to Global Premium Standards

The Solid Foundation

Base Variety: Pathum Thani 1 Rice

Key Strength:
- High yield
- Central-adapted
- Base 2AP (aroma)

Deep Tech Synergy

GIT:
- Advance Microbes
- Max Yield
- Functional Rice
- Nutrient Rich
- Chem Free

MOS:
- Biotech
- Supercharge 2AP

The Ultimate Vision

The New Breed: "Phichit Super Aroma Rice"

Global Target:
- GI
- World Best Rice Award

2AP: 2-Acetyl-1-pyrroline

Green Inno Thai (GIT) / Morena Solution (MOS)

National Economic Impact

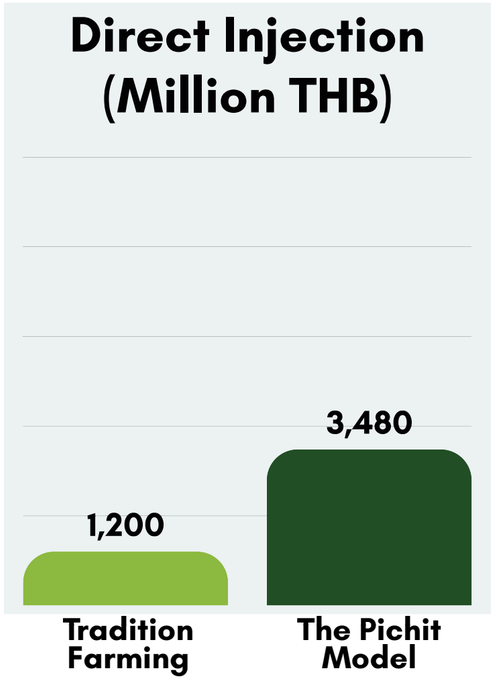
Elevating Revenue from Commodity to Global Premium via Value Multiplier

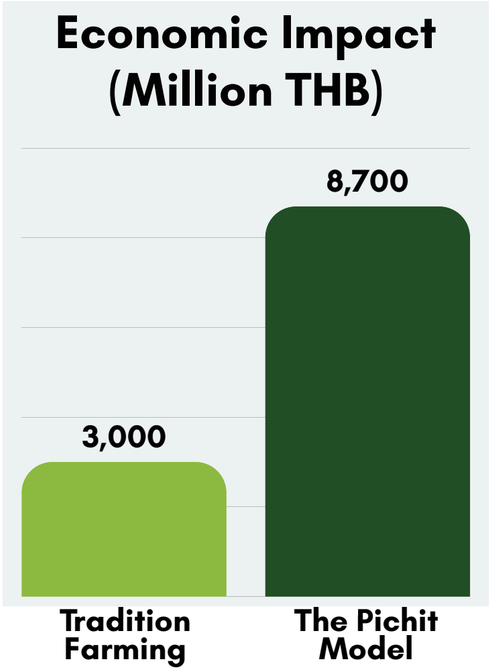
Unit Economics (Per Rai)

	Traditional Farming	The Pichit Model
Avg Yield (kg/rai)	800	928 (+16%)
Market Price (THB/kg)	12	30
Tot Revenue (THB/rai)	9,600	27,840
GIR	+18,240	

Generate Incremental Revenue

Pichit Province Agricultural Data	
Tot Rice Cultivation Area (rai)	**1,775,010**
Total Farming Households	**73,017**
Average Cultivation Area per Household (rai)	**25**
Target Household	**5,000**



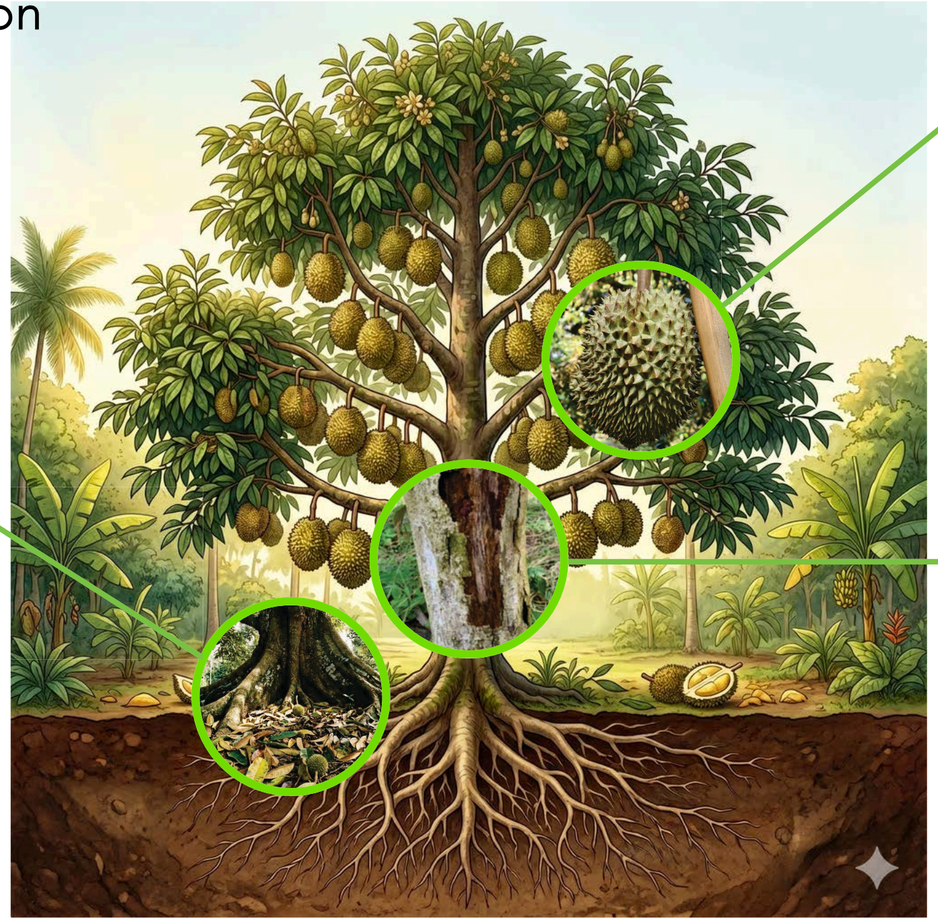


Reference: Based on the Input-Output (I-O) Table framework by the National Economic and Social Development Council (NESDC) / 2.5x Economic Multiplier

Proven Success Case:

Premium Durian Solution (Chanthaburi)

Integrated Bio-Technology for Disease Control and Yield Optimization



Synsaccharide (Premiumization)

Optimizes fruit bulking (เบ่งพู), starch %, color, and Brix levels.

Soil-Base Microbial Consortium (Soil Health)

Suppresses pathogens & decomposes organic debris into natural fertilizer.

Nano Phyto COS (Bio-Fungicide)

High-performance disease control with Zero Residue for export.

Premium Durian ROI (Chantaburi Success Case)

Transforming Yield and Quality into Exponential Profit

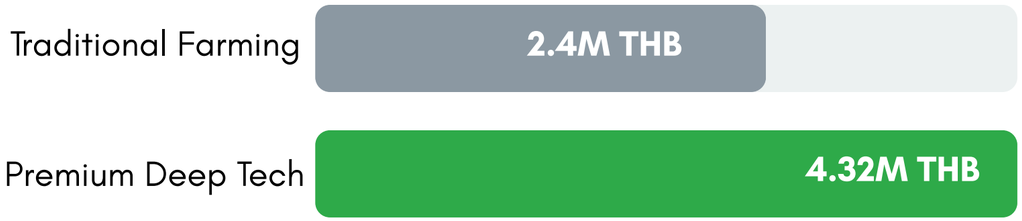
Value Creation per Rrai (1 Rai Assumption)

Metric	Traditional Farming	Deep Tech Synergy
Yield	2,000 kg	**2,400 kg** (+20%)
Price	120 THB/kg	**180 THB/kg** (Premium)
Revenue	**240,000 THB**	**432,000 THB**

GENERATE INCREMENTAL REVENUE (GIR)

+192,000 THB/rai

Farm-Level Impact (10 Rai Case Study)



INCREMENTAL PROFIT

+1.92 Million THB

per 10 Rai Area

Strategic Synergy & Call to Action

Driving National Impact through B2G & B2B Partnerships

B2G Synergy

Empowering National Agendas

- Public-Private Partnerships (PPP)
- Policy Implementation Engine

B2B Synergy

Elevating Corporate Sustainability

- ESG & Carbon-Conscious Supply Chains
- Agile OEM & Co-Branding

Turning Global Crises into National Opportunities

A Deep Tech Blueprint for Thailand's Agricultural Future

Turning Global Crises into National Opportunities

A Deep Tech Blueprint for Thailand's Agricultural Future

Global Challenges

Geopolitical & Fertilizer Crises

Energy Costs

Climate Change & Extreme Weather

Powered by GIT Deep Tech

Phase 1: Agricultural Security & Cost Reduction

Phase 2: National Resource Independence & Climate Resilience (ESG)

Proposed B2G Megaprojects
Immediate Impact

Driving Agricultural Security & Operational Cost Reduction

National Biocontrol Reserve

- **Core Tech:** Microbes & Nano Phyto COS
- **Impact:** CAPEX-free, on-demand production to secure national food supply.

Co-Research for BCG Export

- **Core Tech:** Synsaccharide Booster
- **Impact:** Elevating local crops to premium global export standards.

National Biocontrol Sandbox

- **Core Tech:** Synbiobot (Smart Delivery)
- **Impact:** Reducing spraying cycles to cut farmers' energy and fuel costs.

CAPEX: Capital Expenditure

Proposed B2G Megaprojects
Long-Term Sustainability

Achieving Resource Independence & Climate Resilience

Bio-Enhanced Thai Potash

- **Core Tech:** K-Solubilizing Microbes
- **Impact:** Upgrading local potash to achieve National Fertilizer Independence.

Sustainable Environment & Flood Defense

- **Core Tech:** Straw-Degrading Microbes & Nano Phyto COS
- **Impact:** Eradicating PM 2.5 and protecting crops against La Niña flooding.

Circular Bio-Economy & Net Zero

- **Core Tech:** Biochar Slow-Release
- **Impact:** Retaining soil moisture against El Niño and driving Net Zero goals.

CAPEX: Capital Expenditure

Let’s Transform
Thai Agriculture Together

“ We invite strategic partners, policymakers, and investors to scaling our deep tech innovations and elevating Thai agriculture to the global stage. ”

Green Inno Thai