



Bio-Economy Partners

# BIONANO<sup>®</sup>

## PROBIOTIC FOR PLANT HEALTH



PT MULTIKIMIA AGRO SEJAHTERA



- BIONANO<sup>™</sup> is a proprietary composite biocatalyst that enhance a broad range of hydrolytic and oxidative biochemical reactions.
- Contains a novel consortia of metabolically cooperative microorganisms, with endogenous and exogenous enzymes, and small molecule metabolic co-factors which support both biocatalytic and metabolic activity.
- BIONANO<sup>™</sup> products are composed of all natural materials. Organically based and non-genetically modified

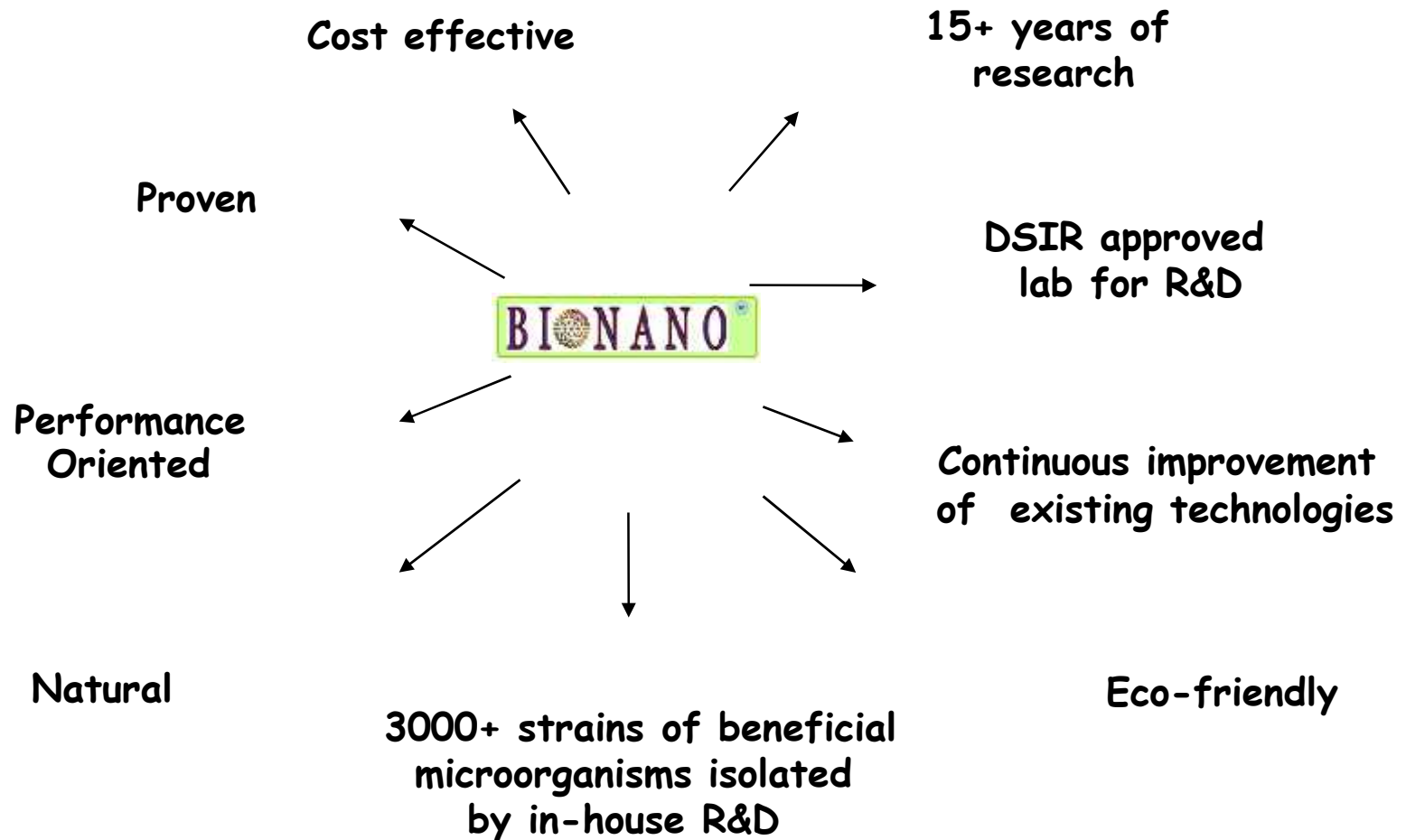
# Why choose our products?



PROBIOTIC FOR PLANT HEALTH



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**BIONANO®**

**PROBIOTIC FOR PLANT HEALTH**



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- Improves the efficiency of photosynthesis, which boosts the crop yield
- Ideal for spray application under cloudy weather condition.
- Foliar application @ 2 to 5 gm per lit. of water
- Can be used for all crop varieties
- Compatible with all soluble fertilizers and micro nutrients

# How does "BIONANO " help?



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- Increases seed germination and viability
- Increases root respiration
- Stimulates root growth, thus increasing root density
- Helps decompose soil organics
- Increases soil buffering properties by increasing humus level
- Improves moisture storing ability and protects against osmotic stress
- Solubilizes minerals for plant availability
- Promotes conversion of soil elements, into plant available forms
- Chelates metal ions in alkaline conditions, increasing plant availability



## How does “BIONANO crop” help?

- Helps reduce dependence on chemical applications
- Stimulates plant enzymes
- Increases photosynthetic activity
- Increases cytokinins and auxins to enhance plant growth
- Stimulates plant growth by naturally accelerating cell division
- Improves plants immunity to diseases
- Performs well during environmental stress
- Helps faster flowering and faster fruiting
- Facilitates top quality produce

## Directions of Use

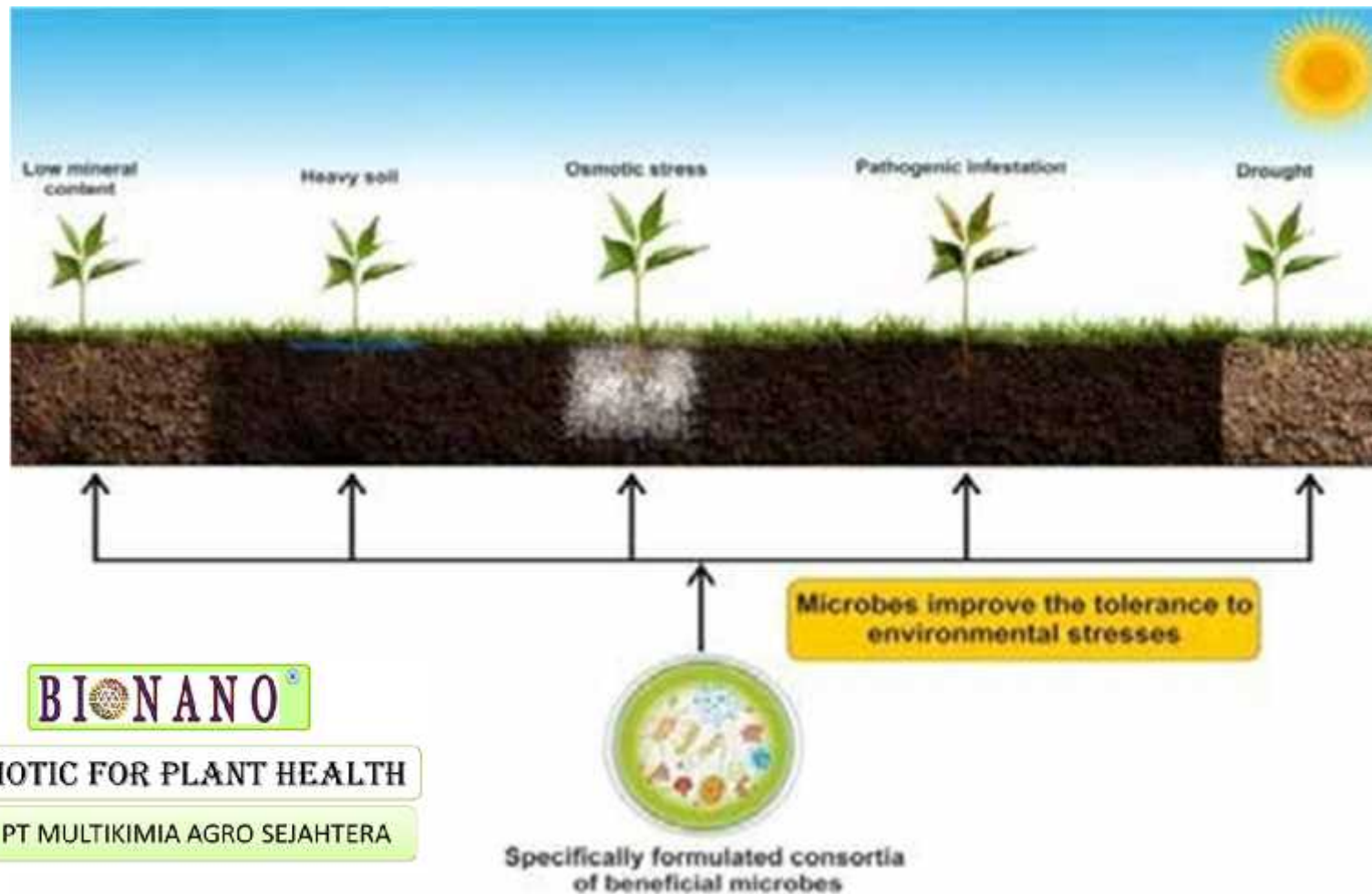


- Apply 500 gm per acre per application OR Take 3 to 5 gm per liter of water.
- Soil application and/or Foliar spray and/or Drip irrigation
- Seed treatment with BIONANO products ensures healthy and faster germination.



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# The right microbiome can help plants tolerate various abiotic/biotic stresses



BIONANO has commenced commercial application of BIONANO™ HAYATI in oil palm to treat under-performing oil palm trees. We call this “Oil Palm Remedial Treatment”.

Strategy is to utilize very fast response and visual improvement in tree health and vigor as entry point to market.

Maintenance dosing to these palm will then lead to yield observations adding to specific longer-term yield field studies with commercial growers and universities.



*Application is a single treatment using 10gm of BIONANO™ Hayati applied with 3L of water and spray applied to trunk and 1m radius of trunk base.*

Palm modes to yield improvement:

- Plant health
- Reduce dry season impact



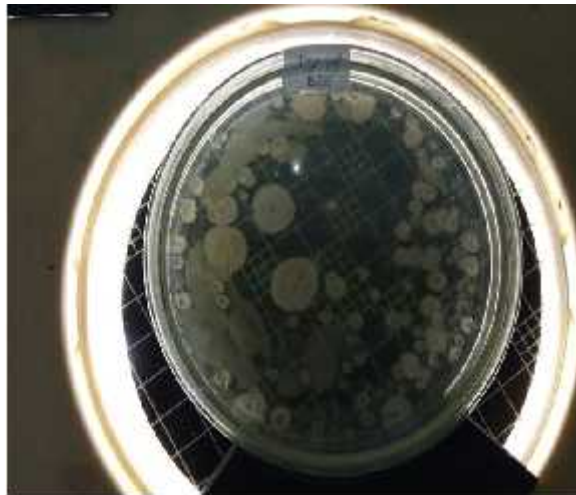
# OIL PALM FUNGAL CONTROL



We have an extensive program in developing biocontrol agents, to safely and effectively inhibit the growth of plant disease causing fungi and food-borne pathogens to improve food quality and safety. BIONANO Potential to reduce *Ganoderma* and Leaf Spot diseases in palm.



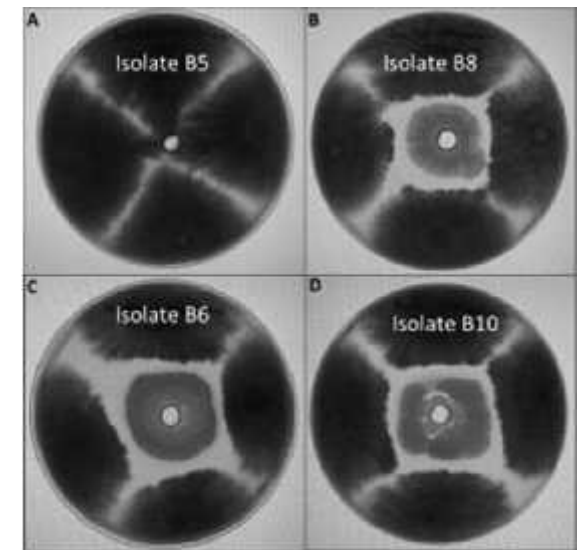
Ganoderma Fungus



Microbial Bionano



control *Ganoderma*  
fungus





# APPLICATION **BIONANO**<sup>TM</sup> CROP DI KELAPA SAWIT



# Regulatory Approvals and Certifications

Brand Patent : IDM000372852



Indonesian Agriculture Registration :  
03.01.2015.098



## In House R&D facility, blending and Packing

