MARISYM BIOLOGICALS

ROOTING INNOVATIONS

BIO INPUTS FOR AGRICULTURE

Need Based Solutions



All Products

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MARISYM BIOLOGICALS

ROOTING INNOVATIONS

Welcome to Marisym Biologicals, where innovation meets sustainability to transform industries through the power of nature. At Marisym, we are on a mission to revolutionize various sectors by offering sustainable biological solutions inspired by the intricate relationships found in nature

MISSION

Marisym Biologicals pioneers sustainable biological solutions globally, leveraging nature's mechanisms for a healthier future.

VISION

Marisym Biologicals aims to lead the global B2B market with sustainable solutions, fostering a greener, healthier future through innovation and strategic partnerships.

CORE VALUES OF THE COMPANY

- Customer centric
- Continuous learning and Innovation
- Integrity
- Quality
- Leading Edge Knowledge



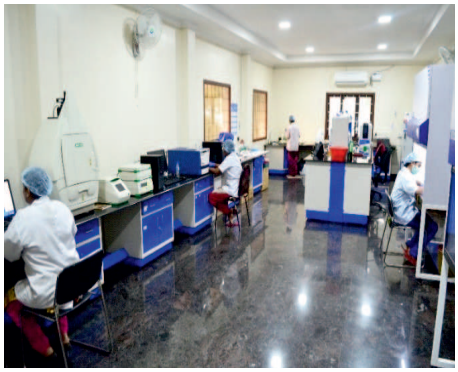
R & D Scope

- Germplasm collection & storage
- Molecular & Biochemical characterization of beneficial strain
- Microbial encapsulation technology for enhanced delivery to target site
- In house processing technology for optimum biomass & economically viable product
- Design of organic chelated nutrients & Seaweed derivatives
- Bio molecules identification, characterization, formulation and protein engineering











Registrations & Certifications

- Central Insecticides Board & Registration Committee (CIBRC)
- Indian Organization of Standardization (ISO 9001:2015)
- Fertilizer Control Order (FCO)
- Food Safety and Standards Authority of India (FSSAI)

Our Strength

Bringing the expertise of microbiology and plant nutrient to the farmers.

- Skilled manpower (Masters and PhD graduates with expertise in microbiology, plant pathology, nematology, entomology and formulation technology)
- Microbial culture collections (~500 strains)
- Infrastructure to conduct insect and nematode bioassays
- Facilities for in vitro bioassay on plant pathogens
- Green house facilities and field access
- Expertise in water soluble, wettable powder and granular formulations
- Seaweed processing industry along the coastal belt of Tamil Nadu
- Unique & patented microencapsulation technology for bacterial formulations (Patent No. 429572)
- Advisory team with 3 decades expertise in R & D, manufacturing process, registration and post market technical support

State of the art infrastructure facilities of Marisym Biologicals

Infrastructure spanning 46000 sq.m facility in 3 locations

- Large scale microbial fermentation production facilities up to 9KL reactors
- Solid state fermentation
- Downstream equipments
- Large scale drying equipments
- Seaweed processing reactors
- Amino acid production facilities
- Tissue culture production facilities







Social Responsibility

- 57 % of the total workforce are women.
- Empowering women from 11 nearby villages.
- 300+ unskilled workforce from underserved community.
- Provided employment opportunities for urban, semi-urban and rural youth.
- 150 fishermen and fisherwomen are empowered through our seaweed project



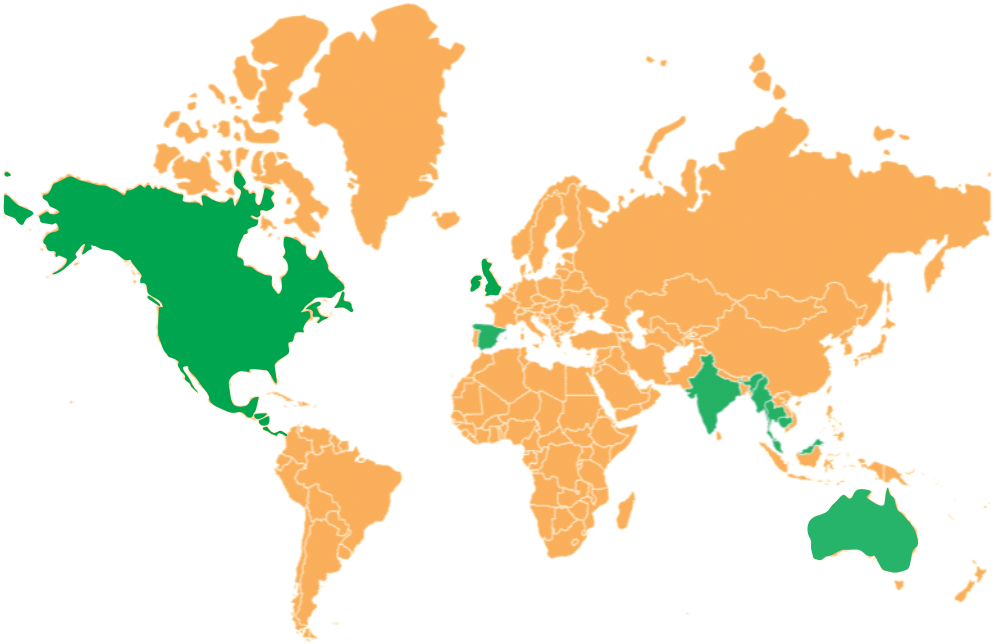




Environmental Responsibility

- All the products produced by Marisym Biologicals are 100% biodegradable and does not cause any hazardous residual effect on the environment.
- Negligible carbon footprint in the production process.
- Our product intervention ultimately leads to reduction in the chemical inputs consumption in agriculture.

Going global with our sustainable solutions



India
Singapore
Malaysia
Thailand
Philippines
Cambodia
Bangladesh
Spain
Canada
UK
Australia

Our Product Segments



BIO FERTILIZERS



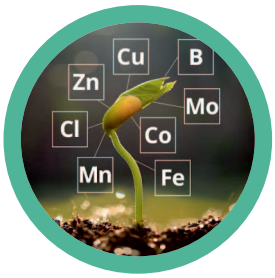
BIO CONTROL AGENTS



PLANT BIOSTIMULANTS



SOIL CONDITIONERS



NUTRIENTS



BIO DIGESTERS

Introducing our high-quality bio-fertilizers, the natural solution for healthy and thriving crops

Biofertilizers



Our biofertilizers are made from beneficial microbes naturally derived from soil and they provide range of benefits for crops, such as:

- Promoting plant growth and development
- Enhancing nutrient uptake and availability
- Improving soil health and fertility
- Stimulating beneficial microorganisms in the soil
- Reducing the use of chemical fertilizers and pesticides

Our biofertilizers are scientifically formulated and tested to ensure their efficacy and safety. We use only the best ingredients and manufacturing processes to ensure consistent quality and performance

By using our bio-fertilizers, farmers can increase the yields and quality of their crops, while also reducing their costs and environmental impact. Our products are suitable for all types of crops and soils, and they are easy to apply. We are proud to partner with agri-input marketing companies in India to bring our biofertilizers to farmers across the country. With our products, farmers can achieve sustainable and profitable agriculture while contributing to a healthier planet.

Mycorrhizae production technology : Advancing agricultural sustainability through innovative bio fertilizer research

Marisym Biologicals is a pioneering force in the realm of bio fertilizer manufacturing and research. With over a decade of expertise in VAM (vesicular-arbuscular mycorrhiza) technology, we are dedicated to driving agricultural sustainability through cutting-edge solutions. Our commitment to scientific excellence and technological innovation underscores our mission to tackle global challenges in crop production.

Our expertise:

Root organ culture technology :

Leveraging state-of-the-art facilities, we optimize VAM spore production through advanced root organ culture technology. This ensures scalability, efficiency and quality in our offerings.

Customized formulation:

With a knack for tailored solutions, we craft water-soluble VAM formulations to meet the specific needs and preferences of our customers, providing versatility unparalleled flexibility.

Our offerings:

Consistent quality formulation:

VAM, developed using tissue culture technology, enhances large-scale VAM spore production under controlled conditions, ensuring reliability in the field.

Better viability and germination rate :

Protected by multi-layered sporocarp, our VAM spores boast superior viability and germination rates. This fosters optimal nutrient absorption and plant growth, fortifying plants against diseases and adverse weather.

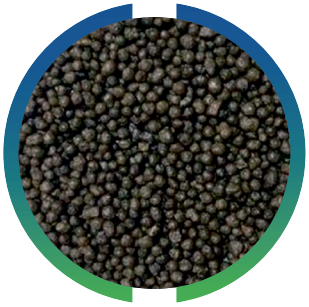
Enhanced stability :

Our products exhibit superior stability, prolonging shelf life and maintaining efficacy under diverse environ -mental conditions. With a minimum product shelf life of two years, our formulations are highly sought after for agricultural applications.

VAM product formulations catering to different application



Water-soluble formulation for drip and soil drenching- Mycosym Wonder



Granular formulation for soil broadcasting - Mycosym G

Low contamination levels:

Produced through ROC (Root Organ Culture) technology, our products adhere to stringent quality control measures, minimizing contamination levels and ensuring purity and efficacy.

Water-soluble and granular formulations:

Available in both water-soluble and granular forms, our formulations offer convenience and ease of use for various agricultural applications.

Industrial capacity and knowhow:

Scaling up production process:

Marisym proudly boasts the capacity and cutting edge technology to scale up VAM production, guaranteeing efficient and timely delivery to meet the ever-growing demands of the market.

Stringent quality control measure

From in-process analysis to finished product evaluation, we maintain rigorous quality control standards throughout the production process, ensuring product efficacy and consistency.

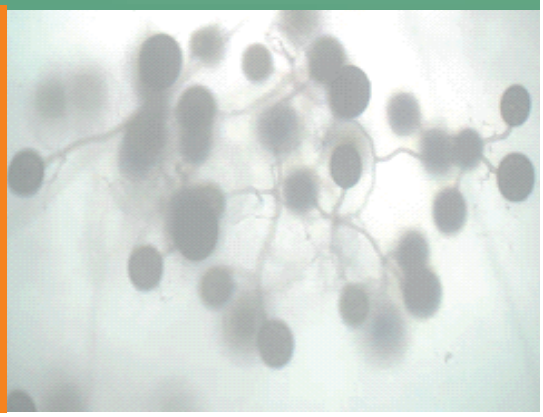
Inoculation facility





Culture incubation facility

Production of VAM spores through root organ culture technology



R&D facilities - mycorrhizae focus:

Marisym Biologicals research and development facilities are dedicated to advancing Mycorrhizal technology in agriculture.

Our specialized team focuses on mycorrhizal research, emphasizing mother culture maintenance and value addition to optimize bio fertilizer efficacy.

Mother culture maintenance:

Within our R&D facilities, we prioritize meticulous maintenance of mycorrhizal mother cultures. Rigorous protocols and cutting-edge techniques ensure genetic stability and performance of mycorrhizal strains Precise isolation, purification and ongoing maintenance preserve the purity and effectiveness of our formu -lations.

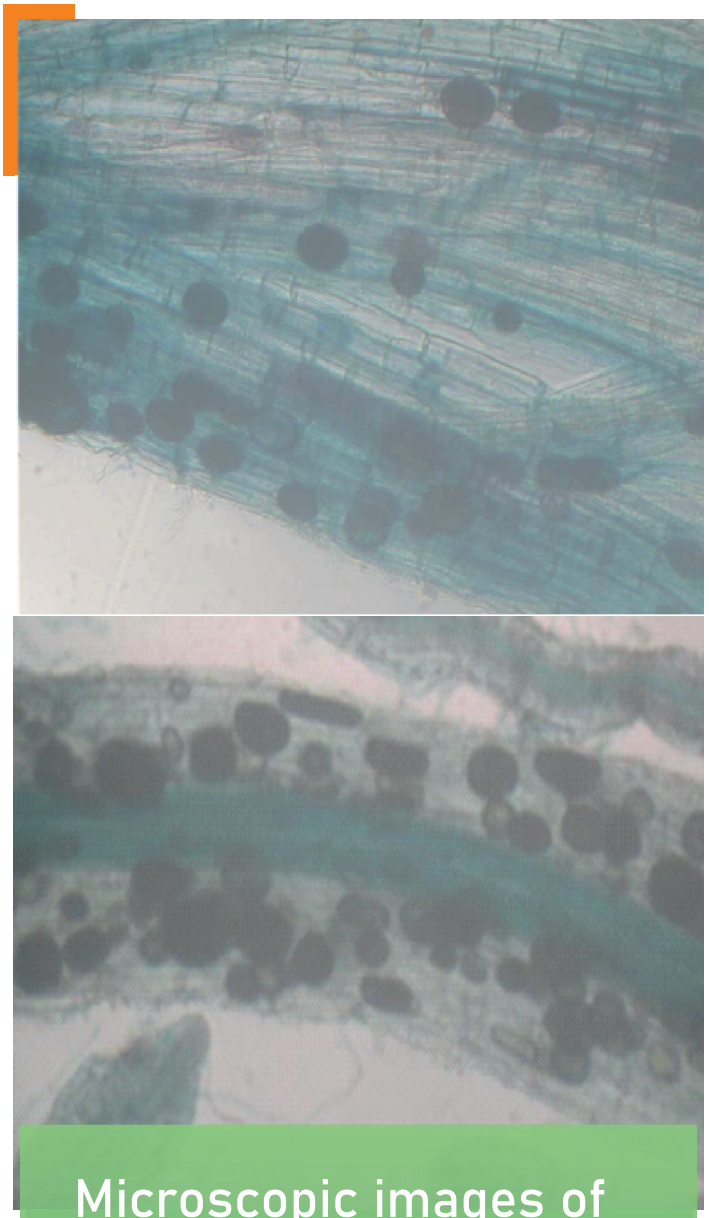
Technological Inventions:

The invention focuses on the characterization of the various formulations with different compositions to establish a novel Mycorrhizha based biofertilizer to be as a growth promoter/ enhancer to increase the plant productivity with ROC

Comprehensive R & D initiatives:

Qualified professionals conduct extensive R&D activities focused solely on mycorrhizal technology. Field trials and performance evaluations across diverse agro-climatic conditions ensure product efficacy and adaptability.

Systematic testing and evaluation refine formulations, providing farmers with reliable mycorrhizal solutions tailored to their specific needs.



Microscopic images of VAM-infected roots, with the presence of numerous vesicles and arbuscules, evidenced a high degree of infection.

Mycosym Wonder

(Mycorrhizal water soluble formulation)

Mycosym wonder is a water soluble nutrient mobilizing biofertilizer that contains Vesicular Arbuscular Mycorrhizae which forms symbiotic association with root system and enhances the plant growth and vigor. It improves nutrient absorption, increases phosphorus availability and supports plants to resist disease and unfavourable weather conditions. It also enhances crop yield and quality.

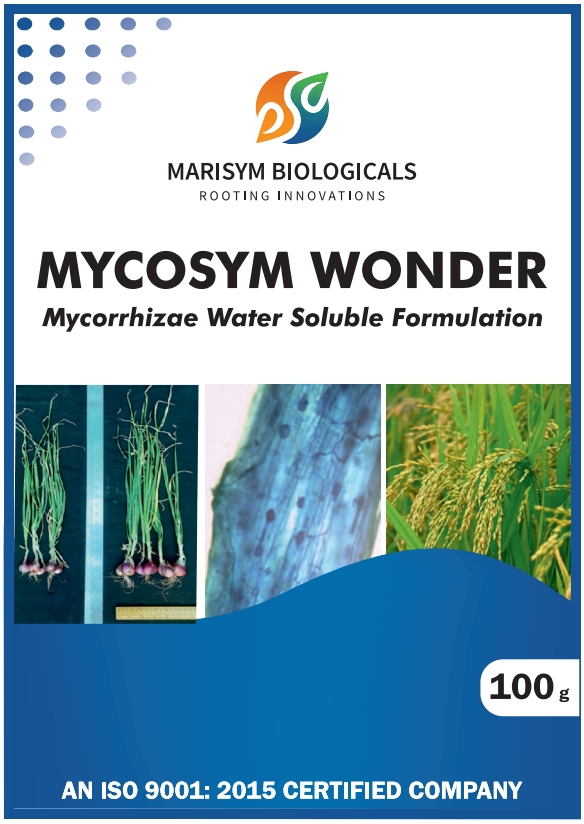
Mycosym Wonder's role in plants

- Ensures sufficient No. of spores/plant.
- Minimizes the usage of phosphatic fertilizer, reduces chemical pollution and improves soil health.
- Highly compatible with other biofertilizers/ organic manures and enhances crop yield.
- Eco-friendly and helps in carbon sequestration.
- Helps in better absorption of water and there by helps plant to tide over water stress conditions.
- Easy to apply as soil drenching and drip irrigation methods.
- Improves resistance to soil borne pathogens.

Dosage & Method of application

- Soil drenching / Drip application/ Soil application by broadcasting:
  Water-soluble formulation – 100g/acre
  Crops: All crops.

Technical composition
Concentrated spores and fragments with infected root bits of Rhizophagus sp-2% (1,00,000 IP per 100 g of the product)
Water soluble carrier-98%



Biofertilizers

Mycosym G

(Mycorrhizal granular formulation)

Mycosym G is a granular biofertilizer that contains Vesicular Arbuscular Mycorrhizae which forms symbiotic association with root system and enhances the plant growth and vigor and yields by absorbing naturally available nutrients from soil through symbiosis with plant roots. It increases the availability of major and micro nutrients, strengthens plants, and supports crop quality improvement.

Mycosym G's role in plants

- Minimizes the usage of phosphatic fertilizer, reduces chemical pollution and improves soil health.
- Highly compatible with other biofertilizers/ organic manures and enhances crop yield.
- Eco-friendly and helps in carbon sequestration
- Helps in better absorption of water and there by helps plant to tide over water stress conditions.

Technical composition
Spores and fragments with infected root bits of Rhizophagus sp. (60 spores per gram)
Carrier

Dosage & Method of application

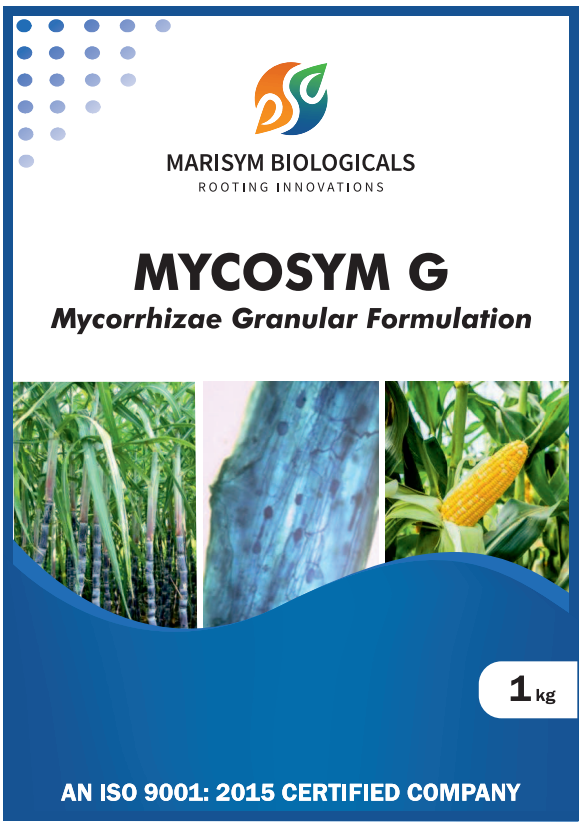
- 4 Kg/acre

Nursery : 50g Mycosym per one m^2 area.

Polybag nursery : Mycosym G @ 2g/perforated cavity of nursery tray at the time of planting.

Soil application : Inoculum should be applied at 2-3 cm below the soil at the time of sowing/planting. Soil moisture should be available

Crops: All crops



Grosym NPK

(NPK consortium for seedling treatment and soil application)

Grosym NPK is a beneficial microbial consortium that can fix atmospheric nitrogen and solubilise phosphate and mobilize potassium in the plant root system to enhance crop yield, quality improvement of produce and maintain better soil health.

Grosym NPK's role in plants

- Increases the root density and shoot growth, prevents the bud and flower dropping
- Increases quality and shelf life of fruits, stimulates seed germination, root hair formation and plant growth
- Influences plant growth and development.
- Maintains the soil microbial population, due to the presence of humic acid

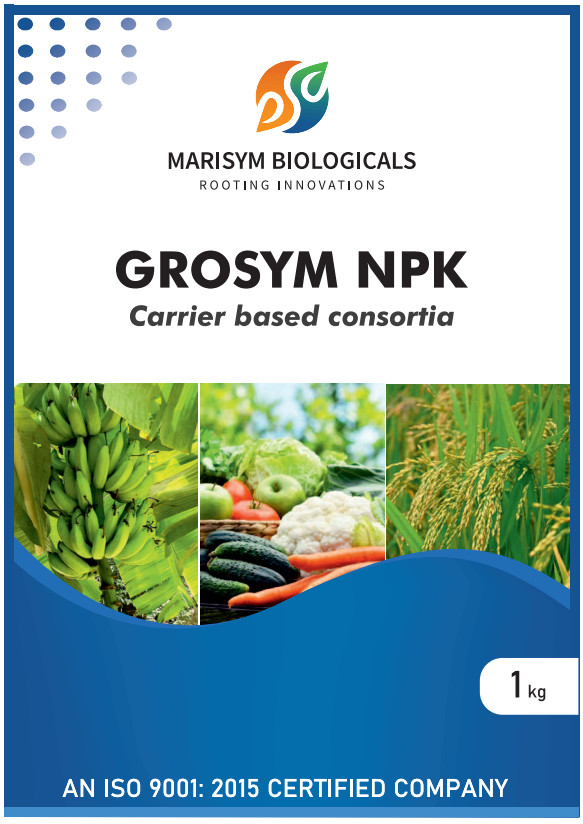
Dosage & Method of application

- Formulation: Wettable Powder (WP)

  Soil application: Mix 5 kg of Grosym NPK with 50 kg of compost/Vermicompost and broadcast to the field

  Drip irrigation /drenching: 5 Kg of Grosym NPK in 100 litres of water/acre through Drip irrigation/drenching

Technical composition
Azotobacter chrococcum : 1 x 10^7CFU/g Fixes atmospheric N in ammoniacal form in soil
Bacillus megaterium : 1 x 10^7CFU/g Solubilizes the phosphate in soil and makes it available to plant
Frateuria aurantia: 1 x 10^7CFU/g Mobilize the potassium in soil and makes it available to plants.
Nutrients and carrier



Biological seed treatment: revolutionizing agriculture

Biological seed treatment product consists of microbes as active ingredients, applied in powder form for uniform coating of seeds. Beneficial microbes present in the treated seeds enhance the germination percentage and colonize the roots immediately after germination and resulting in better seedling vigour index.

Innovation - Smart Seed Technology :

Our novel seed coating solution utilizes beneficial microbes and biostimulants to promote uniform seedling emergence and vigor.

Key features include :

Premium formulation:

Utilizes microencapsulation technology for stable, on-seed application of microbial inoculants, ensuring slow and sustained release.

Ease of application:

A single-step solution that is compatible with insecticides and fungicides, simplifying the seed treatment process .

Biodegradable and non-toxic:

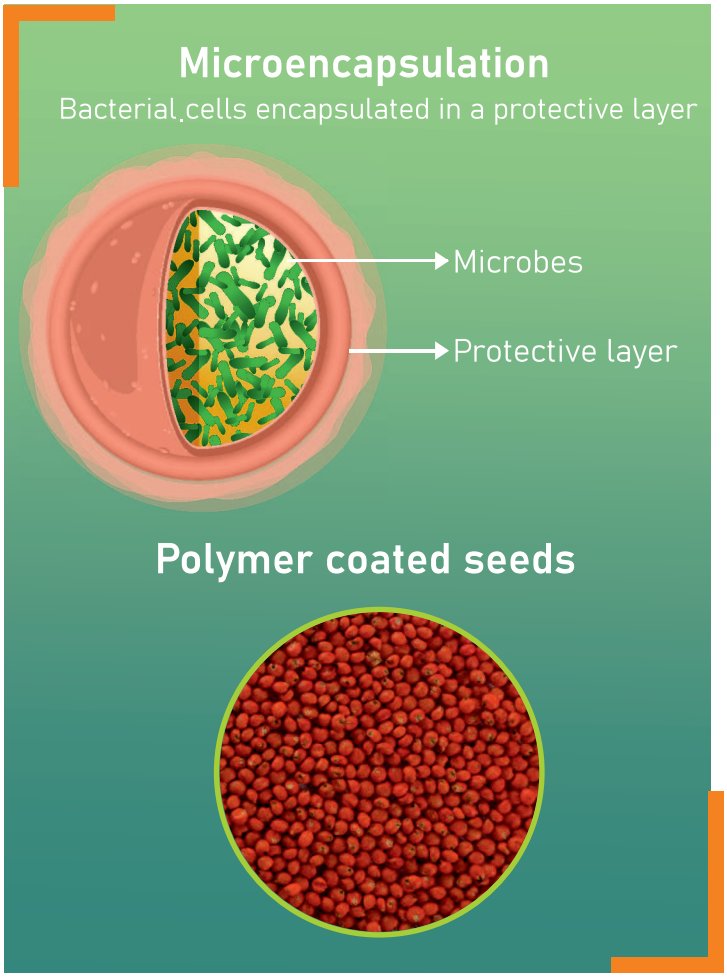
Incorporates an inbuilt biodegradable polymer, eliminating the need for external binders and ensuring compatibility with the rhizosphere.

Extended stability:

Smart seed technology extends coated seed stability for up to 6 months, with optimized water activity ensuring a product shelf life of 2 years.

Highly concentrated:

Requires very low dosage due to highly concentrated active ingredients, making it cost-effective and user-friendly.



Best application methodology :

Our products are designed for optimal plant growth promotion and protection, focusing on:

Early inoculation: Ensuring microbes are present at the earliest stages of growth.

Proximity to root zone: Facilitating better colonization and nutrient uptake.

Low dosage: Maximizing effectiveness while minimizing application costs.

Logistics efficiency : Streamlining the seed treatment process to save time and resources.

Gervi

(NPK consortium for seed treatment)

Gervi is a microencapsulated seed treatment product with a consortium of N_2 fixer, phosphate and potassium mobilizers/releasers to improve the availability of NPK (Nitrogen, Phosphorous, and Potassium. SMART SEED TECHNOLOGY with in-built polymer water soluble formulation (WS) @ 0.5-6 g per kg of seeds (according to size of seeds) for better germination, seedling vigour, crop yield enhancement and quality improvement.

Gervi's role in plants

- Better seed germination, seedlings vigour, and improves plant growth
- Increases the root and shoot growth
- Reduces the bud and flower dropping
- Increases quality and shelf life of fruits
- Maintains the soil microbial population

Dosage

- Seed treatment

(Water-soluble formulation) – 0.5-6 g/Kg of seeds

S.No	Crop	Quantity of Gervi (g) / Kg seed	Water (ml) / Kg seed
1	Cotton-Hybrid	1.5 g	14 ml
2	Maize-Hybrid	1.5 g	12 ml
3	Paddy-Hybrid	1.5 g	20 ml
4	Pearl millet	3 g	18 ml
5	Bhendi	3 g	18 ml
6	Sorghum	3 g	10 ml
7	Tomato-Hybrid	3 g	250 ml
8	Chilli-Hybrid	6 g	50 ml

Technical composition
Azotobacter chrococcum : 1 x 10^7 CFU/g Fixes atmospheric N in ammoniacal form in soil
Bacillus megaterium : 1 x 10^7 CFU/g Solubilizes the phosphate in soil and makes it available to plant
Frateuria aurantia : 1 x 10^7 CFU/g Solubilizes the potassium in soil and makes it available to plants.
Nutrients and water soluble carrier



Biofertilizers

Nodmor

(Rhizobium for seed treatment)

Nodmor is a biofertilizer that contains microencapsulated rhizobium species, bacteria which forms symbiotic association with leguminous crops like soybean and pulses. It forms root nodules and converts atmospheric nitrogen to NH_4, which is readily utilized by the plant. Nodmor developed using the SMART SEED TECHNOLOGY with inbuilt polymer improves N_2 fixation, seed germination, nodulation and crop yield.

Nodmor's role in plants

- Stimulates seed germination, root hair formation and plant growth
- Influences plant growth and development
- Helps in reactions such as redox reactions, protein synthesis, N_2 fixation and photosynthesis

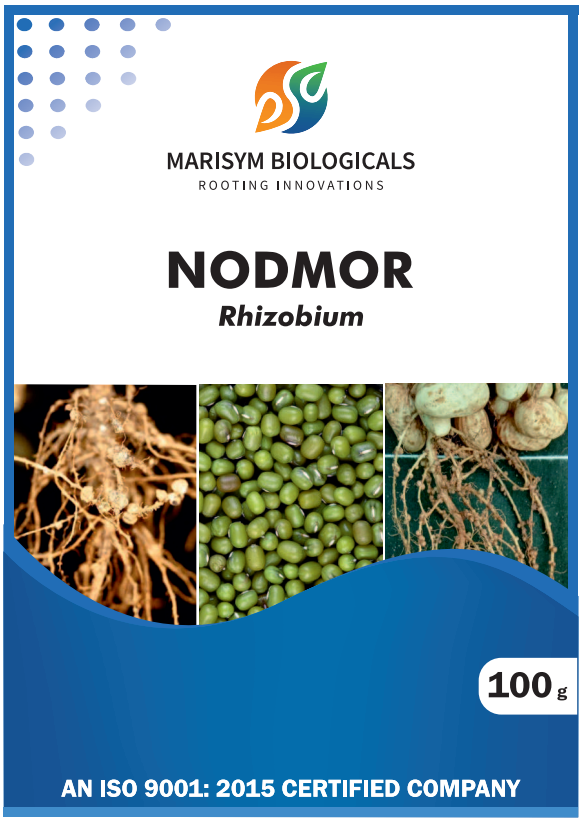
Technical composition
Rhizobium spp .: 5 x 10^7 CFU/g Forms symbiotic association with soybean & pulse crops and converts atmospheric nitrogen to ammoniacal form in plants
Nutrients and water soluble carrier

Dosage

- Seed treatment

(Water-soluble formulation) – 0.75g/Kg of seeds

S.No	Crop	Quantity of Nodmor (g) / Kg seed	Quantity of water (ml) / Kg seed
1	Soybean	0.75g	7 ml
2	Green pea	0.75g	7 ml
3	Red gram / Pigeon pea	0.75g	10 ml
4	Bengal gram / Chickpea	0.75g	10 ml
5	Ground nut	0.75g	10 ml
6	Black gram	0.75g	8 ml



Phenogreen

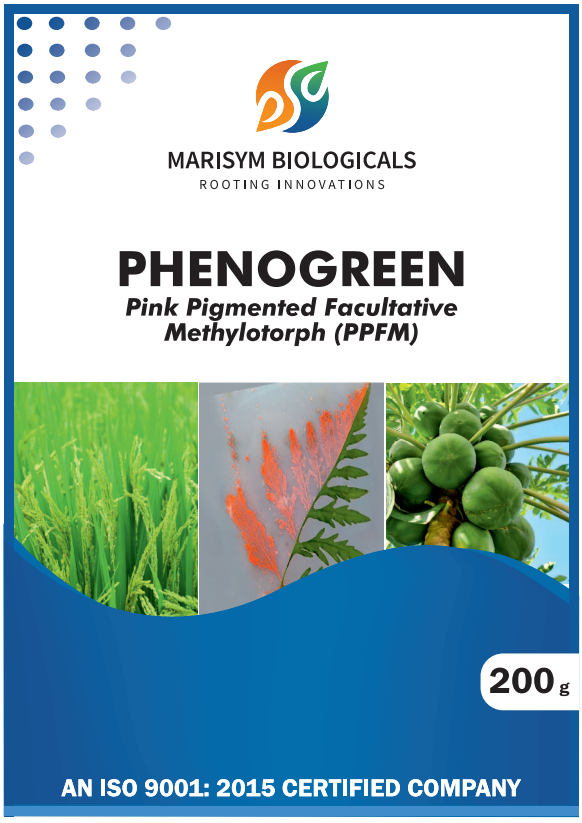
Pink Pigmented Facultative Methylotroph (PPFM)

Phenogreen contains the microorganism for water stress / drought mitigation viz., Pink Pigmented Facultative Methylotroph (PPFM), Organic chelated potash and other micronutrients for improving plants tolerance to drought and disease. Specially formulated potassium and organic chelated micronutrients further enhances the yield parameters in crop

Phenogreen's role in plants

- Minimizes water requirement in irrigated crops and improves tolerance to drought stress in rain fed crops.
- Promotes root growth and enhances the uptake of phosphorous and other nutrients from soil or media
- Enhances plant growth and yield by production of plant growth hormones like auxins and cytokinin
- Increased bioavailability of K and other micronutrients helps in early flowering, fruit / seed setting
- Compatible with a wide variety of agro / bio inputs used for foliar spraying
- Improves fruit quality, colour and seed weight
- Improve photosynthesis activity
- Compatible with agro inputs

Technical composition
Water soluble formulation Methylotroph (minimum CFU count: 1 X 10^9 /gm). Microbial extract Plant growth promoters
Water soluble carrier



Dosage & Method of application

- Water soluble formulation–200g/acre

  Soil application:

  Drip/Drenching @ 200-300g/acre

  Foliar application:

  Spray @ 1-2g/lit or 200g/acre

Biocontrol agents



At Marisym Biologicals, we offer biopesticides derived from living organisms and naturally derived compounds to manage pests and diseases, and enhance the tolerance of plants to abiotic and biotic stresses throughout the crop growth stages. We are committed to helping farmers reduce their reliance on chemical pesticides and adopt sustainable Integrated Pest Management (IPM) practices.

Our bio control range of products helps in

- Overcoming residues, resistance and resurgence.
- Improving plant immunity.
- Provides extended window of plant protection.

We believe in providing crop specific solutions meeting the efficacy, quality and sustainability to help overcome the ever-growing challenges facing agriculture in producing high quality, environmentally friendly products.

At Marisym Biologicals, we have

- State-of-the-art production facility
- Latest technology and high-quality raw materials
- Tailor made products to meet the specific needs of different crops and soil types
- Strains with broad spectrum of activity
- Products highly effective against a wide range of pests and diseases
- Committed to quality - products undergo rigorous testing and quality control checks at every stage of production
- Well experienced technical support team for comprehensive guidance and support to our clients

Advancing agricultural sustainability through innovative biocontrol research

Marisym Biologicals is a pioneer in the field of biocontrol research, leveraging over three decades of expertise in Solid State Fermentation (SSF) technology to develop cutting-edge solutions for sustainable agriculture. Our commitment to scientific excellence and technological innovation drives our mission to address the global challenges of pest and pathogen management in crop production.



Our expertise

Culture isolation and maintenance:

Marisym's expertise is founded upon the meticulous culture isolation and maintenance of beneficial fungi, ensuring the purity and efficacy of our biocontrol agents

Strain quality control:

We uphold rigorous strain quality control measures to guarantee the genetic stability and performance of our biocontrol strains, resulting in consistent and reliable products

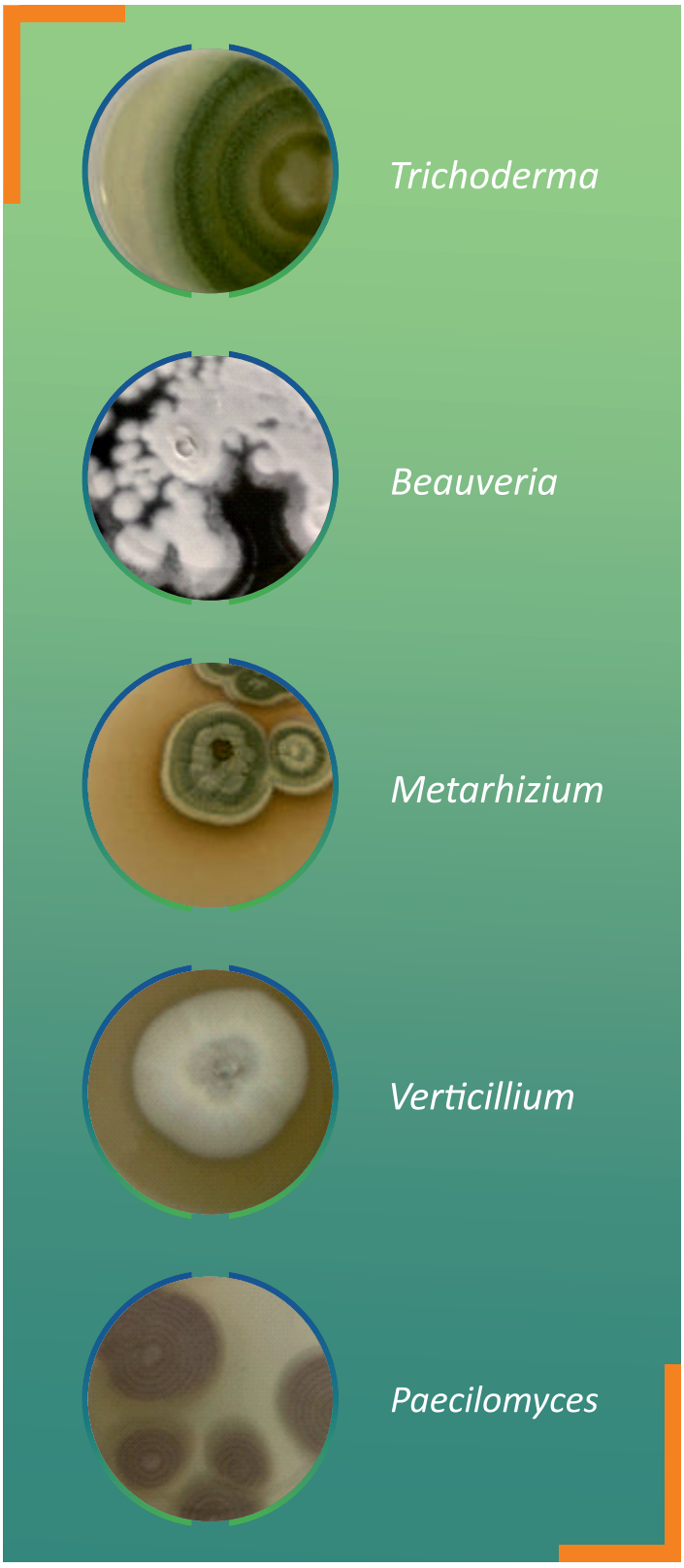
SSF and Submerged Fermentation Technology :

Our proficiency in SSF and submerged fermentation technology allows us to optimize the production of biocontrol agents, ensuring efficiency and scalability



Customized formulation:

With our expertise in customized formulation, we tailor our biocontrol products to meet the specific needs and preferences of our customers, offering flexibility and versatility in application.



Our Offerings:

Consistent quality spores or finished formulation:

Choose from our range of products with consistent quality spores or finished formulations, ensuring reliable performance in the field.

Better viability and germination rate:

Experience better viability and germination rates of conidia, leading to rapid and effective pest and pathogen control.

Low contamination levels:

We adhere to stringent quality control measures to minimize contamination levels in our finished products, ensuring purity and efficacy.

Water-soluble and granular formulations:

Our formulations are available in both water-soluble and granular forms, providing flexibility and ease of use for diverse agricultural applications.

Industrial capacity and knowhow

Marisym Biologicals possesses the knowhow to scale up production processes, ensuring efficient and timely delivery of biocontrol agents to meet market demands

Stringent quality control measures:

We implement stringent quality control measures throughout the production process to uphold the integrity and efficacy of our biocontrol agents.

In-house R&D facilities:

Marisym's in-house R&D facilities serve as the cornerstone of our innovation efforts, providing the infrastructure and expertise needed to drive breakthroughs in biocontrol research.

Symcare TV

(Trichoderma viride for management of seed and soil borne pathogens)

Symcare TV is a biofungicide formulation based on the potential biocontrol agent Trichoderma viride. This product gives protection against seed and soil borne pathogens of crop plants in nursery beds as well as in main field through myco-parasitism and antibiosis. The hyphae of Trichoderma coils around the pathogenic fungi and produce antibiotics and extracellular enzymes, which lyse the cell wall of the pathogens. The pathogenic fungi eventually collapse and disintegrate.

Symcare TV's role in plants

- Highly effective in controlling wide range of crop diseases caused by seed & soil-borne pathogens
- Triggers plant defense mechanism and provides protection against phytopathogens
- Secondary metabolites and enzymes like cellulase, protease, β-1,3 glucanases & chitinases involved in protection against plant pathogens
- Improve nutrient uptake through regulation of root architecture

Dosage & Method of application

- Soil application: Drip / Drenching around the plant base @ 3-4 kg/acre (dilute with water)soil moisture should be available at the time of application. Avoid rainy period.

Technical composition
Formulation: Water dispersible powder Trichoderma viride spores and mycelia: 2 X 10^6 CFU per g
Carrier



Biocontrol agents

Symcare PF

(Pseudomonas fluorescens for management of fungal and bacterial diseases)

Symcare PF is a formulation of plant growth promoting rhizobacteria, Pseudomonas fluorescens. The bacterium produces antibiotics which inhibit the growth of pathogens. Siderophores produced by the bacterium chelates the iron in the soil and make it difficult for the pathogen to proliferate. It interferes with germination of the fungal spores and their growth mechanisms, thus preventing establishment of the pathogen on the crops. It is a broad spectrum fungicide, bactericide and nematicide and also a potential plant growth promoter.

Symcare PF's role in plants

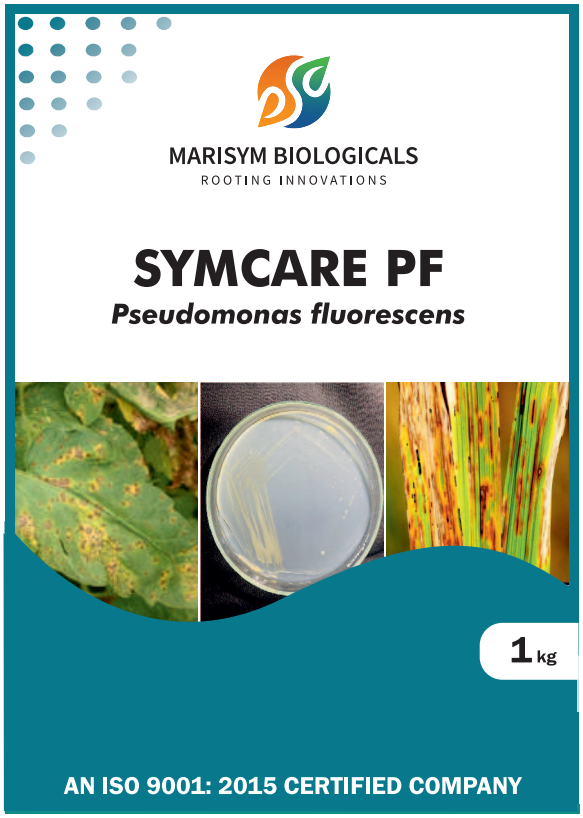
- Protects the plants from soil and air-borne bacterial and fungal pathogens and nematodes by producing enzymes, antibiotics and volatile organic compounds.
- Produces phytohormones, solubilises nutrients like P, K and Zn possess antioxidant activities, all contributing to enhanced plant productivity, especially under abiotic and biotic stress conditions
- Triggers the defense-related enzymes which offers protection against plant pathogens and weakens the nematode egg shell.

Dosage & Method of application

- Soil application & Soil drenching

  Water dispersible product (WP) – 1 to 1.5 kg/ acre

Technical composition
Formulation: Water dispersible powder Pseudomonas fluorescens - 1 x 10^8 CFU per g
Carrier



Symcare BB

(Beauveria bassiana for management of sucking and chewing pests)

Symcare BB is a biopesticide formulation designed based on solid state fermentation technology. This product contains spores and mycelial fragments of most virulent strain of Beauveria bassiana, an entamopathogenic fungus, which is effective against various sucking and chewing insect pests.

Symcare BB's role in plants

- Protects the crop plant by parasitizing the major sucking pests like white fly, thrips and mealy bugs.
- Secretes extracellular enzymes that help in the degradation of exoskeleton of insects pests
- Produces a variety of toxins such as beauvericin, bassianin, bassianolide etc., which helps to parasitize and kill the insect.
- The fungus proliferates throughout the body, producing toxins and draining the insect of nutrients eventually killing it.

Technical composition
Formulation:Solid state fermentation technology – Water dispersible powder (WP) Beauveria bassiana spores and mycelia: 1 X 10^8 CFU per g
Carrier



Dosage & Method of application

- Soil application:

  Drip/Drenching : 1.5-2kg / acre for management of root grubs/ cockchafers.

  Foliar application :1-1.5 kg /acre.

  Effective field management of sucking pest may be possible under suitable RH and optimum temperature.

Biocontrol agents

Symcare MR

(Metarhizium robertsii for pest management)

Symcare MR is a biopesticide formulation containing spores and mycelial fragments of a virulent strain of Metarhizium robertsii (old name Metarhizium anisopliae), entamopathogenic fungus, which is parasitic on various borers, leaf hoppers, root grubs, termites and cutworms.

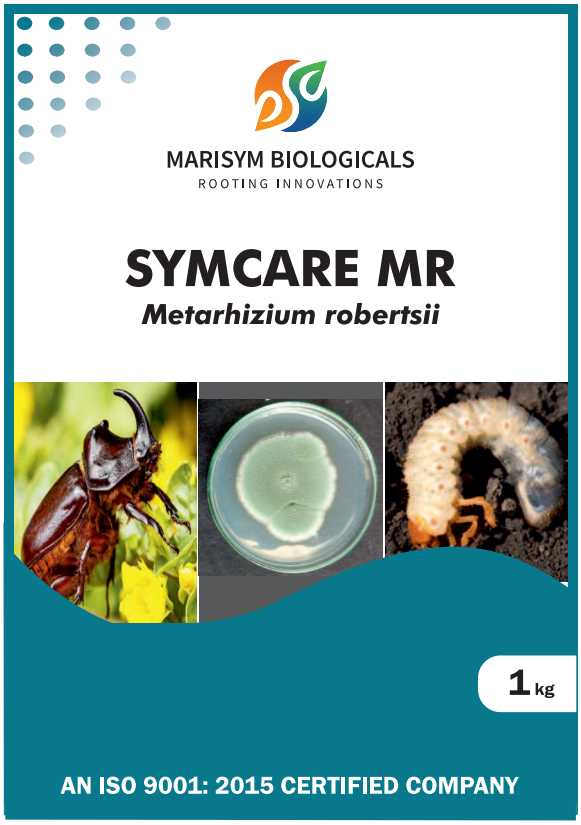
Symcare MR's role in plants

- Protects the crop plants from various species of borers, cutworms, root grubs, leaf hoppers, whitefly, aphids, mealy bugs, thrips, beetles, larvae of Colorado beetle and also several species of leaf-gnawing pests
- Secretes extracellular enzymes like serine protease that helps in the degradation of insect cuticle
- Produces a variety of toxins such as destruxin, cytochalasin etc., which helps to parasitize and kill the insect
- Produces enzymes, hormones and metabolites that promotes plant growth and yield in associated crops.

Dosage & Method of application

- Soil application & Soil drenching Water dispersible product (WP) - 1 to 1.5 kg/acre

Technical composition
Water dispersible powder formulation Metarhizium robertsii spores and mycelia: 1 X 10^8 CFU per g
Carrier



Symcare LL

(Lecanicillium lecanii for management of sucking pests)

Symcare LL is a biopesticide formulation containing spores and mycelia fragments of a virulent strain of Lecanicillium lecanii (old name Verticillium lecanii), which is effective against several species of sucking pests especially aphids, thrips, soft bodied scale insects, white flies, mealy bugs and mites

Symcare LL's role in plants

- Protects the crop plants from major sucking pests like white fly and aphid attack.
- Produces protein and polysaccharide degrading enzymes that helps in the degradation of insect exoskeleton.
- Produces the variety of toxins such as cyclodepsi -peptide toxin, which helps to parasitize and kill the insect.

Dosage & Method of application

- Foliar application

  Water dispersible product (WP) - 1 to 1.5 kg/acre

Technical composition
Water dispersible powder formulation Lecanicillium lecanii spores and mycelia: 1 X 10^8 CFU per g
Carrier



Biocontrol agents

Symcare PL

(Purpureocillium lilacinum for management of plant parasitic nematodes)

Symcare PL is bionematicide formulation containing spores and mycelial fragments of a highly virulent strain of Purpureocillium lilacinum (old name Paecilomyces lilacinus) which is effective against various nematodes. This product also protects the plants from other stress factors.

Symcare PL's role in plants

- Protects the crops from a wide range of plant parasitic nematodes like root knot nematodes, burrowing nematode, cyst nematodes, root lesion nematodes, reniform nematode etc.
- Parasitizes eggs, juveniles, cysts and adult females
- Produces extracellular enzymes such as serine protease, proteases and chitinase weaken the nematode egg shell.

Dosage & Method of application

- Soil application: Drip/drenching– 2-3 kg/acre. Multiple application may be done in perennial crops in case of nematode population exceeds ETL.

Technical composition
Water dispersible powder formulation Purpureocillium lilacinum spores and mycelia: 2 X 10^6 CFU per g
Carrier



Biovie

(Bacillus Consortium for management of plant diseases)

Biovie is a consortia of naturally occurring potent Bacillus strains and an elicitor of natural origin that protects the crops against a wide range of foliar, seed and soil-borne fungal and bacterial plant pathogens, which causes diseases like Wilt, Damping off, Root rot, Blast, Blight, Mildew, Canker etc. Biovie promotes plant growth and induce systemic resistance in plants.

Biovie's role in plants

- Protects the plants against fungal and bacterial pathogens
- Contains elicitor molecules which triggers defense mechanism against invading pathogens
- Multiple modes of action prevents the development of resistance to the product by the target pathogens
- Plant growth promotion through induced systemic resistance, production of phytohormones, nutrient solubilisation, antibiosis and antioxidants

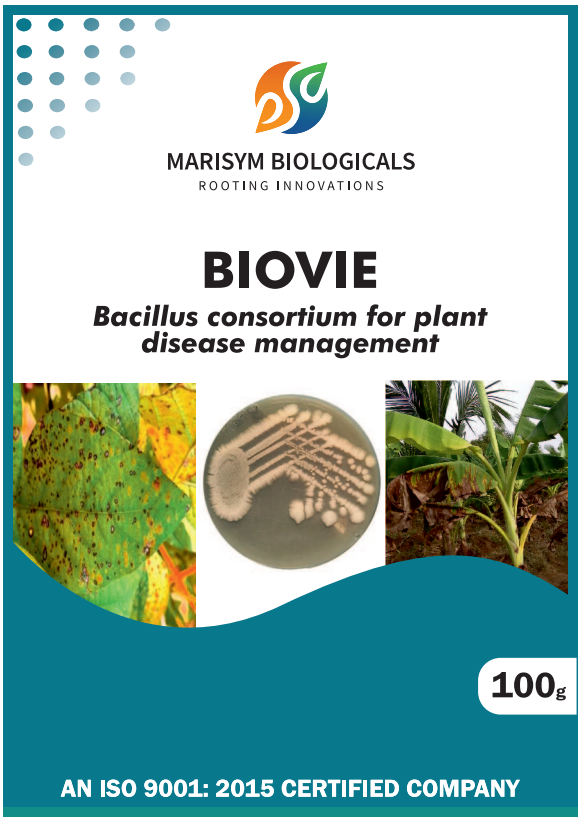
Dosage & Method of application

- Water soluble product (WS)-150g/acre

Soil application: Drip/Drenching: 150-200 g/acre

Foliar application: 1-1.5 g/lit or 150g/acre

Technical composition
Bacillus spp. - 1 X 10^9 CFU per g
Water soluble carrier



Botanical Insecticide

Kelnim

Neem oil based EC

KELNIM, neem oil based, azadirachtin disrupts an insect's metamorphosis process and the extreme bitter flavour makes it an excellent anti-feedent and repellent when applied on plant foliage. Active ingredients and related liminoids of this product also control the insect's hormonal production, reproduction and maturation.

Kelnim's role in plants

- Controls wide range of pests including white flies, aphids, mealy bugs, caterpillars, leafhoppers and thrips
- Kelnim acts as
  - antifeedant
  - repellent
  - ovi-position deterrent
  - insect growth regulator
- Better control if used as a prophylactic

Technical composition
Azadirachtin – 300ppm

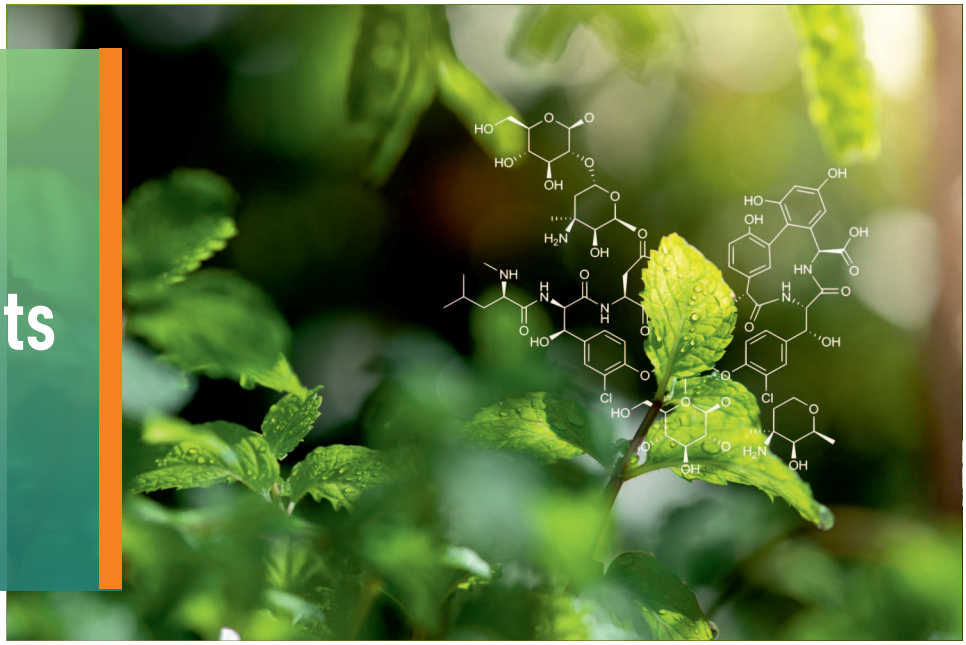


Dosage & Method of application

- 5-6 ml/litre of water

The application should be given as prophylactic (or) early stages of pest infestations for 2 – 3 applications with 10 days intervals.

Plant Biostimulants



Our Biostimulant products harness the power of seaweeds, amino acids, and humic acids to help plants grow and produce optimal yield. We are dedicated to producing high-quality and consistent products using our state-of-the-art infrastructure.

Amino acid biostimulants: Cultivating success from nature

Marisym Biologicals specializes in biostimulants and nutrient products formulated with L-α-amino acids, leveraging scientific research and innovation to support farmers in enhancing agricultural productivity and sustainability.

Advanced technology for enhanced performance

Sophisticated techniques are employed in advanced isolation technology for L-α amino acids to extract and purify them from natural sources with high efficiency and purity. Our technology includes membrane filtration, crystallization, enzymatic hydrolysis, and isolation. We consistently expand our technology through research and development to meet the changing needs of farmers and uphold the principles of sustainable agriculture.

We utilize plant-based sources to extract essential L-α-amino acids crucial for sustainable plant growth and development. These amino acids act as fundamental building blocks for proteins, enzymes, and vital molecules, playing pivotal roles in diverse physiological processes within plants.

Explore our products made from in-house amino acids



Kelbio Bloom

- Enhanced viability and reproductive growth of plants
- Increased flowering and fruiting
- Improved photosynthetic activity

Kelbio Combat

- High anitioxidant content
- Resilient nutrient solutions
- Enhances nutrient absorption efficiency

Kel Amino 20%

- L-amino acids helps plant with stand abiotic and biotic stress
- Increased photosynthetic activity
- More bioavailable

Seaweed derived biostimulant harnessing ocean resources for sustainable agriculture

Discover a sustainable solution for the biostimulant and organic fertilizer industries. Our mission is to leverage the power of the ocean's resources while promoting marine conservation and biodiversity.

Cultivation excellence:

Engage with fishing communities to cultivate seaweeds sustainably. Our strict quality standards ensure consistent product performance. Innovative cultivation methods optimize space and increase yields for healthier biomass.



Floating bamboo raft method



Long-line rope method

Enzyme fermentation technology :

Cultivate a greener future with our specialized enzyme fermentation technology. We isolate key compounds like carrageenan, alginate and fucoidans for enhanced efficacy. Our focus on low molecular weight oligosaccha -rides maximizes impact while minimizing dosage. Our expert R & D team pioneers innovations for sustainable agriculture.

Key features include :

Synergistic formulations: Custom blends enhance agricultural performance.

Tailored product development: Solutions tailored to specific crop and soil needs.

Diverse applications: Versatile products suitable for various agricultural practices.

CO2 "Storage Sink" : Contribute to carbon sequestration and mitigate climate change impacts.

Scalability and efficiency :

Meet growing demand sustainably. Our manufacturing capabilities focus on scalability and resource optimi -zation. Through automation and sustainable practices, we ensure maximum bioavailability while minimizing waste



Extraction Facility

Products developed using seaweed derivatives

Kelbio K10

Red and brown seaweed extract

- Enzyme activator
- Biochemical promotor

Kelsap

Super absorbent polymer

- Increase the water retention & amount of moisture in the root zone
- Reduces the leaching of soil nutrients
- Compatible with beneficial microbes



Kelbio K20

Potassium derived from Rhodophytes

- Improve quality and quantity of the produce
- Abiotic stress reliever
- Improves chlorophyll content

Kelbio Gold

Alginate 18%

- Supports reactions such as N_2 fixation, protein synthesis and photosynthesis
- Improves plant resistance
- Reduction of transplantation shock

Plant Biostimulants

Kelbio Combat

(Biostimulant for plant nutrition and abiotic stress management)

Kelbio Combat is a biostimulant formulation that makes use of naturally available stimulants derived from seaweeds, microbiologically derived hydrolysed proteins and essential amino acids for plant growth. The product contains natural growth hormones for plant growth promotion along with antioxidants for the effective management of abiotic stress, crop yield enhancement and quality improvement.

Kelbio Combat's role in plants

- Influence on plant growth, productivity and quality of crops
- Enhance nutrient uptake and increase germination
- Enhance plant productivity, especially under abiotic and biotic stress conditions
- Stimulates plant defence response mechanisms against stresses
- Helps in reactions such as N_2 fixation, protein synthesis, redox reactions and photosynthesis

Dosage & Method of application

- Soil application: Drip / Drenching: 1 - 1.25ml/lit or 300-400 ml/acre

  Foliar application: 2 ml/lit or 250-300 ml/acre

Technical composition
Protein hydrolysates and amino acids -6%
Seaweed extract -3%
Aqueous base - 91%



Kelbio Bloom

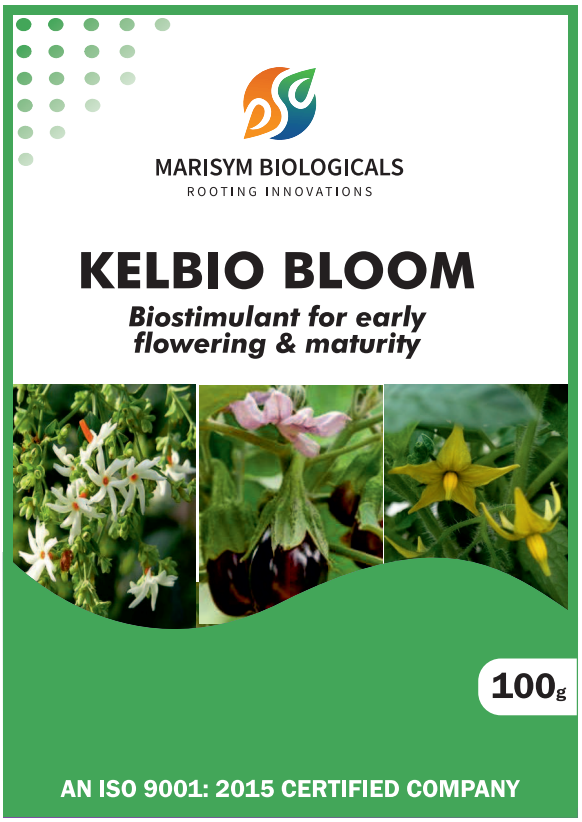
(Biostimulant derived from amino acid and humic acid for early flowering and maturity)

Kelbio Bloom is an enriched organic powder formulation combining humic acid, protein hydrolysate, and amino acid. It is a powerful supplement for plant growth and health. The combination of these ingredients also leads to an increase in chlorophyll content in the plant, which can result in a higher degree of photosynthesis and productivity.

Kelbio Bloom's role in plants

- Increases the germination, productivity and quality of crops
- Enhances plant productivity, especially under abiotic and biotic stress conditions
- Improves fruit quality in terms of size, shape and colour
- Helps micro-nutrient uptake and mobility
- Enhance photosynthetic activity
- Enhance proliferation of root density and beneficial microorganisms

Technical composition
Hydrolysed proteins and amino acids – 6%
Humic acid - 65%



Dosage & Method of application

- Soil application :

  Drip / Drenching: 1g/lit or 100-150g/acre

  Foliar application : 100 - 150 g/acre

Plant Biostimulants

Kelbio C Hume

(Biostimulant derived from seaweeds and humic acid for plant nutrition and abiotic stress management)

Kelbio C Hume is derived from marine algae and is approved for organic use. Enriched with humic acid and fulvic acid, high amounts of micronutrients, minerals and other organic matter that promotes growth in plants. It can promote root growth, both in density and length and enhance the plant growth, throughout the season.

Kelbio C Hume's role in plants

- Enhances bioavailability, absorption and uptake of nutrients by plants
- Enhances the growth of beneficial microorganisms in soil and provides greater resistance to pest like nematode
- Helps to retard crop diseases, improve leaf growth, activates many enzymes system, involved in osmoregulation and improve drought resistance
- Enhancing cell wall permeability in plants, thereby more nutrients can easily enter into the plant
- Helps in reactions such as N_2 fixation, protein synthesis, redox reactions and photosynthesis
- Promotes absorption and transports of mineral elements, significantly increase the chlorophyll content of leaves.

Dosage & Method of application

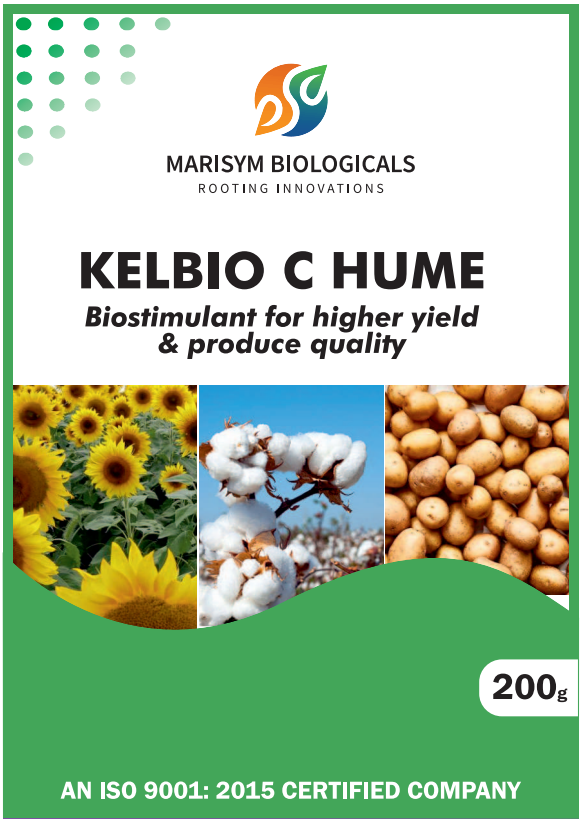
- Formulation: Water soluble powder

Soil application:

Drip/Drenching: 1g/lit or 200-300g/acre

Foliar application : 1-1.25 g/lit or 200- 250g/acre

Technical composition
Alginate - 10%
Potash (as K_2O)- 8%
Humic acid - 30%
Micro-macronutrients



Kelbio Gold

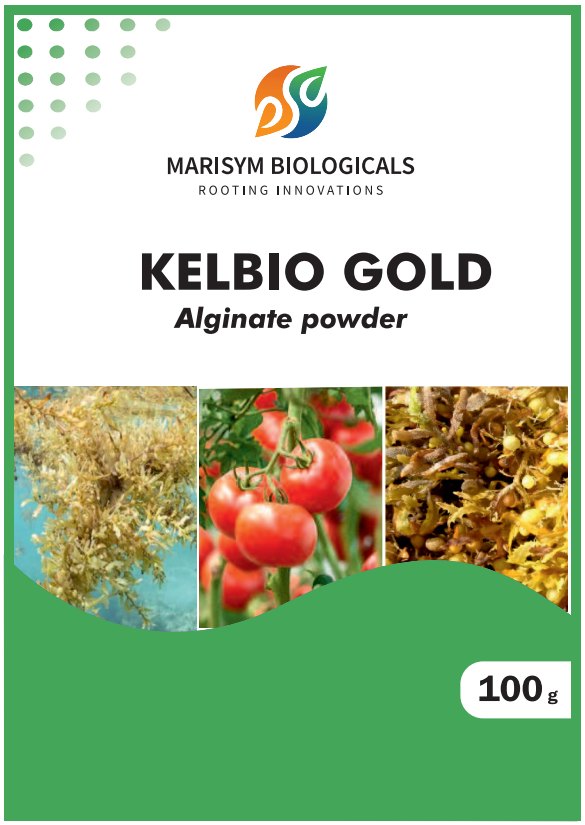
Nutrition and abiotic stress management

Kelbio Gold is a biostimulant derived from marine algae and approved for organic use. Enriched with organic potassium, minerals and other organic matter, Kelbio Gold promotes growth in plants.

Kelbio Gold's role in plants

- Stimulate and enhance the growth of beneficial soil microflora
- Reduction of transplantation shock and better plant establishment
- Enhances cationic capacity of soil (CEC) and nutrient bioavailability
- Increase tolerance to drought and heat stress by improving water holding capacity
- Supports reactions such as N fixation, redox reaction protein synthesis and photo synthesis
- Improves plant resistance and quality functions
- Improve plant growth, yield and crop quality

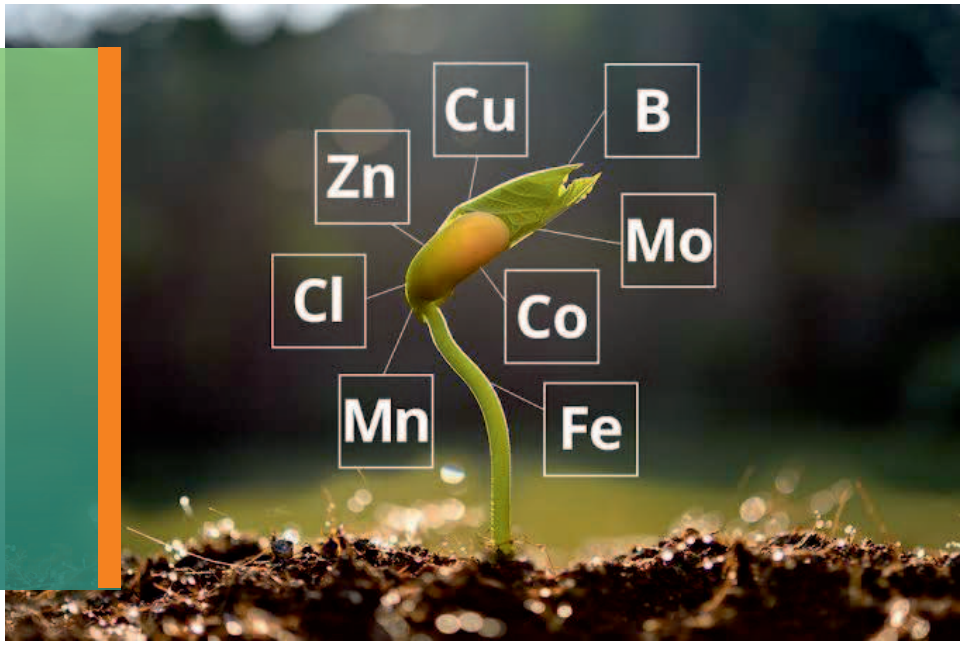
Technical composition
Alginate 18%
Potash (as K_2O) – 18 – 20 %
Plant growth regulator



Dosage & Method of application

- Soil application :
  Drip/Drenching: 1g/lit or 100-150g/acre
  Foliar application : 1g/lit or 100g/acre

Nutrients



Our nutrient products are specially formulated to improve crop yields and overall plant health. We use only the highest quality raw materials and follow strict quality control measures to ensurethe purity and effectiveness of our products. Our production process is designed to maximize efficiency and minimize waste, allowing us to offer our micronutrients at competitive prices

Our nutrient range includes products for various crops, such as cereals, fruits, vegetables, and pulses. We also offer customized formulations to meet the specific needs of our customers. In addition to our production capabilities, we offer comprehensive technical support to help our customers get the most out of our products. Our team of experts is available to provide advice and guidance on crop nutrition and best practices for using our micronutrients.

We are committed to providing our customers with high-quality, effective micronutrient products and exceptional service.

Kelbio K-20

(Potassium 20% from Rhodophytes in water soluble formulation)

Kelbio K20 is a biofertilizer derived from Kappaphycus alvarezii, containing potassium (20%) and other essential nutrients. Potassium is a crucial macronutrient that plays a vital role in various physiological and metabolic processes, including photosynthesis, water regulation, and nutrient uptake, necessary for healthy plant growth and development. Kelbio K20 enhances plant growth, improves yield, and increases resistance to biotic and abiotic stress. It is a sustainable and eco-friendly alternative to conventional potassium fertilizers.

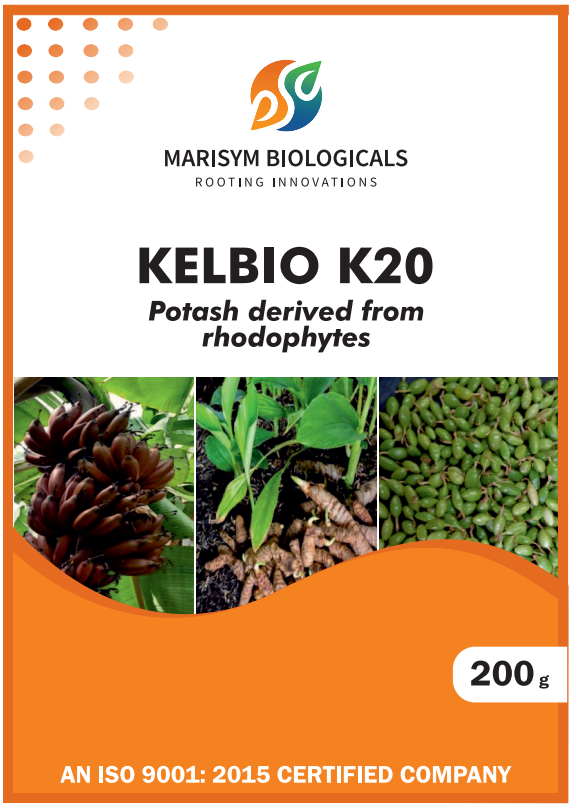
Kelbio K20's role in plants

- Enhance the plant disease resistance, insect attacks and drought tolerance and other adverse conditions
- Enhance photosynthetic activity
- Activation of enzymes, which aid in biochemical reactions in the plant Micronutrients – help the crucial bioactivity in plant
- Provides the natural plant growth components to improve plant growth and yield
- Increases, productivity and quality of crops
- Increases the germination, productivity and quality of crops
- Enhances plant productivity, especially under abiotic and biotic stress conditions

Dosage & Method of application

- Formulation : Water soluble powder
  Foliar application - 2g/lit or 200g/acre. Regular application on reproductive stages of plants

Technical composition
Potash as K_2O derived from Seaweed extracts - 20%
Sulphur - 1.5%
Inert base – 78.5%



Nutrients

Kelbio Sil

Potassium Silicate Liquid

Kelbio Sil is a biostimulant that strengthens the cell walls, forming a physical barrier against infection by pathogens and protecting plants from insect pests. It increases the growth rate of plants. They promote photosynthesis and strengthen the cells. Promotes accelerated nutrient uptake and is suited for soil – based cultivation, hydroponics & aeroponics

Kebio Sil's role in plants

- Silicon from Kebio Sil is easily absorbed through foliage
- Increase stress resistance & enhance biotic stress
- Strengthens plant cell wall
- Prevent plant lodging
- Improve photosynthesis efficiency and brix level in edible plant parts
- Improves plant resistance against heavy metal toxicities
- Enhanced nutrient absorption
- Improve water use efficiency
- Ideal component in integrated pest management practices
- Improves plant growth and yield

Technical composition
Silicon (as SiO_3), Min – 26 %
Potassium (as K_2O), Min – 13%
Aqueous base – 61 %
Highly soluble potassium and silicon Ions



Dosage & Method of application

- Foliar & drip applicaton – 700 – 1400 ml/acre

Soil Conditioners



These products are designed to improve soil health and increase crop yields. Our plant soil conditioners are produced using high-quality ingredients for enhancing soil structure, improving water retention, and increasing nutrient availability, ultimately resulting in healthier crops with higher yields. Our products are suitable for a wide range of crops and soil types, making them as versatile and effective solution for farmers. Our production unit utilizes advanced technology and equipment, enabling us to produce a diverse range of plant soil conditioners that are tailored to meet the specific needs of different crops and soil types. We take pride in our commitment to quality, ensuring that all our products undergo strict quality control checks at every stage of production.

Soil Conditioner is added to soil to improve the soil's physical qualities, especially its ability to provide nutrition for plants. Soils tend to become compacted over time. Soil compaction impedes root growth, decreasing the ability of plants to take up nutrients and water. Soil Conditioners can add more loft and texture to keep the soil loose and thus improves soil structure. Soil Conditioners add nutrients such as carbon and nitrogen, as well as beneficial bacterial colonization in the soil. Soil Conditioners are cost-effective. It can increase soil moisture for longer periods, stimulate microbiological activity, increase nutrient levels and improve plant survival rates and establishment.

Soil Conditioners

KelSap

(Seaweed based super absorbent polymer for enhanced water use efficiency)

KelSap, a seaweed based Super Absorbent Polymer (SAP) or three dimensional cross-linked hydrogel that has the capability to increase the amount of moisture in the root zone thus implying longer period of water retention enabling the reduction of intervals between irrigation and improving the soil quality. It increases the efficiency of soil by enriching the roots with microbes that fix nutrition for the plants.

KelSap's role in plants

- Provides 100% biodegradable, nontoxic and harmless hydrogel for plant growth, release of water occurs over a period of 10 to 15 days
- Increases the efficiency of the applied fertilizers
- Provides antioxidant property and plant growth promoters
- Beneficial microbes - specific kind of microbes can be coated with KelSap to enhance specific nutrient availability

Dosage & Method of application

- Soil application:

  5kg/acre for all crops

Technical composition
Alginate-8%
Nitrogen-4%
Potassium-10%
Antioxidants and micronutrients



Sym Prom

(Phosphate Rich Organic Manure)

Phosphate rich organic manure (PROM) is emerging as a very useful and popular organic input for agricultural and horticultural crops. Sym PROM is a granular formulation rich in available phosphorous for better rooting of plants and the higher organic carbon content stimulates microbial and enzyme activities in soil and due to its benefits to soil and crops. The product is formulated with natural phosphate, bio-available form of nutrients and organic carbon.

Sym Prom's role in plants

- Phosphorus and organic matter increase the soil quality and maximize nutrient usage.
- Maintains soil conductivity and pH, enhances beneficial microbial activity in the soil.
- Provides the natural plant growth components to improves root growth, density, plant growth and yield

Dosage & Method of application

- Soil application:

  Broadcast @150 to 200 Kg/acre.

  Formulation: Granular formulation

Technical composition
Total nitrogen - 0.4 %
Total phosphates (as P_2O_5) - 8.0%
Total organic carbon - 7.9%



Bio Digesters



We are privileged to introduce our Bio Digester, specially designed to accelerate the natural process of decomposition and improve soil health. Our Bio Digester is produced using high-quality ingredients and advanced manufacturing processes, ensuring their effectiveness and quality.

Our plant Bio Digester work by breaking down plant residues, releasing essential nutrients and minerals into the soil. This process helps to improve soil structure, enhance soil fertility and promote the growth of healthy crops.

Our state-of-the-art production unit utilizes advanced technology and equipment, enabling us to produce a diverse range of plant Bio Digester that are tailored to meet the specific needs of different crops and soil types. We have formulated unique consortia of effective bacterial and fungal cultures for composting organic wastes. Addition of these cultures to organic wastes advances composting process. Our products are well suited for different methods of composting including in-situ composting.

Sym Composter

(Decomposing culture for farm waste)

The Sym Composter is a unique mixture of composting microbes for activating the composting Process, it contains Cellulolytic, Proteolytic, Amylolytic, Phenol & Lignin degrading enzyme secreting bacteria, fungi and actinomycetes group of microbes to degrade the agro/ municipal waste

Sym Composter's role

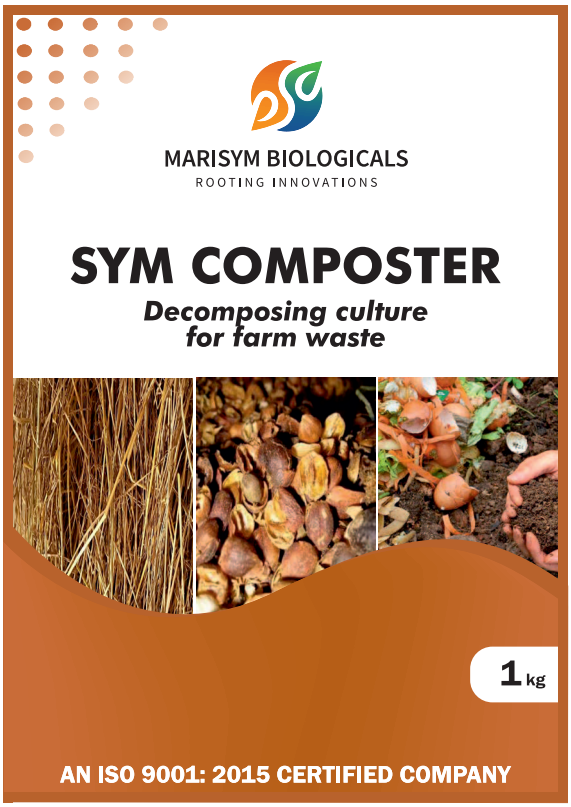
- Adapts and thrives in diverse situations and produces a wide array of enzymes.
- Produces various enzymes, antibiotics and plant growth regulators which help in improving the quality of the compost.
- Acts as a biocontrol agent effective against soil fungal pathogens.

Technical composition
Decomposing culture - 4%W/W
Total Bacteria - 2 X 10^6 CFU/g
Total Fungi - 1 X 10^5 CFU/g
Total Actinomycetes - 1 X 10^4 CFU/g
Carrier material - 96 %W/W

Dosage & Method of application

- Formulation: Wettable powder

  1 kg of Sym composter for 1 MT of farm waste. Soak the product in jaggery and humic acid solution for 24hrs before application on farm waste. Application can be done on aerobic compost method or in- situ farm waste (Spray the composter solution on farm waste and regular moisture is to be maintained on the farm waste in order to have proper compost)



















Group Companies

BIOFARM an agro based R&D company was established in the year 1995 with a mission to promote usage of existing bio products and leverage the biotechnology research findings to develop new products

CERESRI is an overseas partner of Marisym Biologicals involved in agri-tech trading based in Singapore.

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