



PEPTECH BIOSCIENCES LTD.

Your Global
**Growth
Partner**



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PEPTECH BIOSCIENCES LTD.

“Peptech Biosciences Ltd.” a part of the Titan Biotech Ltd. Group, is a global player in Agriculture inputs with its comprehensive infrastructure and expertise in handling Agro products. The list of products is certified by the following organizations.

- International Organization for Standardization (ISO 9001 : 2015)
- Central Insecticides Boards and Registration Committee (CIB & RC)
- Fertilizer Control Order (FCO), Rajasthan
- Organic certification by Rajasthan Organic CA
- OMRI Certified
- Member of CHEMEXCIL & PMFAI

At Peptech Biosciences Ltd., we believe in the power of innovation in everything we do, which is why we take holistic approach in the field of research and development that are sustainable. Peptech provides ingenious, high-quality crop solutions like Biological Fertilizers, Pesticides, and Stimulants, along with synthetic Insecticides and PGRs. The manufacturing process of all products is mechanized with extremely advanced technology, prime for the quality production. We are well equipped with high-quality labs and manufacturing units and a strong team of tremendously qualified scientists who are continuously working to meet the unique needs of our farmers, to improve performance, and maximize outputs.

As one of the leading Biotechnology companies, our extensive experience in various arrays of nutraceuticals and microbiology has proven a successful foundation for us to spread our wings into the discipline of agriculture. Our success stems from the ability to customize our portfolio in response to local and global agronomic conditions. We thrive on working closely with consumers to help build better products, solutions and services for a brighter tomorrow. It's our goal to make agriculture sustainable and provide reliable products.





“We work for B2B clients to expand their product portfolio with generic and innovative agriculture solutions”

Our motto is to support the Agriculture Brands and corroborate with them for assured quality and trusted formulations. We are always enthusiastic to develop new formulations for enriching and enhancing agriculture. Peptech Biosciences Ltd. is oriented towards Business-to-Business (B2B) alliances for production, and development globally.

Peptech has made a niche name in total customer satisfaction by providing the highest quality products available along with quick, responsive customer support services.

We are equipped with diligent Professionals, Researchers, and Scientists who are well experienced and have substantial knowledge of the respective field. Our team works in a team spirit and assists us in processing and array of Agricultural Products. Our experts are engaged in creating new innovative products which provide maximum benefits to our esteemed clients.

The management strives to penetrate ideas of customer orientation throughout all facets of Peptech Biosciences Ltd. with firm commitment and continuous dedication. Our sincere efforts are performed to strengthen relationships with our customers and enhance the growth of our entire agriculture fraternity.



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Bio-Stimulants



AMINOFERT HN 13%

Organic Nitrogen Fertilizer

NUTRIENT RICH IN AMINO ACID & PEPTIDES

Aminofert HN is an OMRI-listed, water soluble powder which is produced enzymatically from Non-GMO natural sources of protein. The Bio-Stimulant has a minimum content of 13% nitrogen, 80% amino acids, and 20% carbon. This is an excellent soil conditioner that assimilates easily into plants and soil. Aminofert HN is an ideal Bio-Stimulant for nitrogen-deficient crops. It is slow releasing but completely soluble in water.

Aminofert HN is a non-toxic, non-polluting, and natural nutrient. It comes with high recommendation for organic agriculture use as it is a chemical-free fertilizer, which is unquestionably perfect for environmentally friendly practices. It is compatible with conventional nitrogen sources and most fertilizers.

USES:

Suitable for all crops including Field crops, Potting soil, Vegetable and Flower gardens, Orchards, and Turf grass.

BENEFITS:

- A good dosage of 80 grams of readily available protein-based nitrogen for plants.
- When Aminofert HN is used, there is no tip burning, as is common with synthetic nitrates or ammonia N sources.
- Organic plant nitrogen, peptides, and amino acids come as a complete package in the product.
- Highly improves the transportation of minerals in soil and plant.
- Natural product with a positive environmental impact.
- Handling does not require special equipment or gear.
- Since the product is made through enzymatic hydrolysis, the particle size of Aminofert HN is very small, making it highly soluble nitrogen.
- No event of volatilization is possible in the case of Aminofert HN.

SPECIFICATIONS:

Nitrogen (N)	NLT 13.00%
Phosphate (P ₂ O ₅)	<0.1%
Potash (K ₂ O)	<0.1%
pH	5-7
Amino Acid	NLT 80%
Carbon	NMT 20%

DOSAGE:

Average Rate of Application	2-3kg / ha
Hydroponic Application	1 Gm / Ltr.
Foliar Application	1 Gm / Ltr.

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc. We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.



AMINOFERT GOLD

Aminofert Gold is the flagship product of Peptech Biosciences Limited. This product is well sufficient with free Amino Acids, Carbon and Micronutrients. This is an ideal nutrition balancer for the soil and crops. Aminofert Gold eliminates the risk of any deficiency in soil, thus the full growth of crops is not hindered.

WHY: Aminofert Gold consists of 5 μ (Microns) size particles, which gives outstanding and absolute penetration in the crops. Aminofert Gold catalyzes the production of chlorophyll and smooths the functioning of the respiratory and photosynthetic systems. It is recommended to be used during the early growth stage of the plant for root development. It is essential for the apical growth of plants. The minerals are distributed and transported well throughout the plant. It enhances yield in the biotic and abiotic stress and increases rhizosphere. This product regulates metabolic activities within plants.

PHYSICAL PARAMETERS	AMINOFERT GOLD LIQUID
Appearance	Brown Viscous Liquid
Solubility	Soluble In Water
CHEMICAL PARAMETERS	AMINOFERT GOLD LIQUID
pH (2% soln at 25°C)	3.5 - 4.5
Amino Acids	NLT 35%
Other trace elements (Zn, Mg, Mn, B, Ca, Fe)	NMT 5%
Particle Size	5 μ (Microns)

RECOMMENDED CROPS:

Aminofert Gold may be used on legumes, grain crops, root crops, cucurbits, leafy vegetables, woody and herbaceous, ornamentals, deciduous fruits, vine crops, tropical and subtropical fruits, and many other crops and turfs.

APPLICATION METHOD:

1. Foliar spray application: 1.5 - 2 ml of Aminofert Gold per litre of water is recommended. Aminofert Gold can be included in a regular spray program on crops and is compatible with other spray materials.
2. Drenching Process: 1.25 - 2.5 litres of Aminofert Gold per hectare is recommended.

The rate of application depends on the crop, stage of growth, and severity of the deficiency. The maximum recommended rates are for mature, full-sized plants. Reduce the rates proportionately when spraying on smaller plants.

RECOMMENDED DOSAGE:

Field Crops & Vegetables: Apply 400-500 ml per hectare during periods of rapid growth or nutritional stress. The application may be repeated twice or more times through the growing season.

Grapes and Vine Crops: Make an application of 400-500 ml per hectare after active growth begins. The application may be repeated at intervals of one week or more through the vegetative growth period.

Tree Crops: Use 10-15 ml of Aminofert Gold in 10 ltr water per tree. Apply Aminofert Gold at the beginning of active growth. The application may be repeated at 2- 4 week intervals through the growing season.

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc.

We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

Bio-Stimulants

CROP TIGER

Crop Tiger is a unique formulation designed especially to enhance the growth of field crops. Crop Tiger is a versatile product, which enables the usage of Crop Tiger for the majority of field crops to obtain assuredly positive results. This product is a rich blend of Kelp Extract, Amino Acids and Multivitamins. Crop Tiger gives plants unrivalled resistance to climatic stress and disease. Crop Tiger has multi-functional capabilities as not only an anti-fungal but also a crop enhancer by providing nutrition to crops.

BENEFITS:

- Increases the quality of the vegetables and fruits by thickening the cell walls of the stems and stalks.
- Protect plants or crops from fungal attack, spider mites, small piercing sucking insects and also root knot or sting nematodes.
- Stronger crops are resistant to drought and any other adverse climatic changes like temperature drops or high heat conditions.
- Increase the plant's tolerance to biotic and abiotic stresses.
- Increases the water holding capacity with the changes in soil microflora.
- Improves photosynthetic activity.

Potassium and Amino acids are natural origins; thus, Crop Tiger is very ideal for organic farming. The special blend of Crop Tiger can bring a drastic change in the crops, which can be profitable for all.

APPLICATION:

1.5-2.5 kg/hectare as foliar application at flowering/fruiting/grain formulation stage.

2.5-5 kg/hectare as soil drenching.

The application always varies as per the size of the crop.

Compatible with all the fertilizers

PRODUCT COMPOSITION:

INGREDIENT	PARAMETERS SPECIFICATION
	POWDER
Multi Vitamins	Min 1%
Plant Extract (Kelp Extract)	Min 30%
Amino Acids	Min 14%
Potassium Oxide	Min 15%
Organic Matter	Min 30%
Filler	Min 10%

FIELD TRIALS:

The field trials of the Crop Tiger were conducted at a reputed Agricultural University in India. They were carried out on Bananas, Sugarcane and Rice. In the trials, significant results were observed between the treated and non-treated crops.

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AMINO ACID MIXTURES

Amino Acids are the molecules that make up the structural units of proteins, each with its own amino group (NH₂), acidic carboxyl group (COOH), and organic R group (or two side chains). While there are hundreds of naturally occurring amino acids, only a core set of 20 comprises the standard genetic code used in protein translation. Amino Acid Mixtures are readily absorbed, transported, and utilized as a source of nitrogen and carbon for plants. It saves the energy expended by the plant to reduce organic matter, synthetic nitrates, and ammonia into amino acids and functions as a Bio-stimulants for the plants.

BENEFITS:

- Helps in the chelating and complexing of nutrients.
- Stimulates nutrient uptake and increases the chlorophyll content in the leaf of the plants.
- Benefits the energy balance of plants.
- Makes 20 kinds of amino acids available for quick absorption by plants.
- Increases biomass production and overall plant yield
- Boosts crop's resistance to drought, salinity and other stressful conditions that affect its yield.
- Improves flavors, firmness and preservation of yield.

AVAILABLE FORMULATIONS:

FORMULATIONS	PRODUCT FORM	DOSAGE
Amino Acid Mixture 40% (6.5% N)	Liquid	1.25 ltr/ha
Amino Acid Mixture 50% (8.0% N)	Liquid	750 ml/ ha
Amino Acid Mixture 50%	Powder	625 Gram/ha

APPLICATION:

Foliar spray and drip irrigation is advised to use for the amino acid mixture application. For best results apply early morning or after sunset. Foliar application at flowering/fruitletting/grain formulation stage.

TARGET CROPS:

Sugarcane, Cotton, Soyabean, Gram, Wheat Paddy Maize, Sorghum, Pearl, Millet, Potato, Brinjal, Cabbage, Tomato, Chili, Orange, Kinnow, Banana, Mango, Garlic, Onion, Tuar, Peas, Masoor, Groundnut, etc.

*Customization also available.

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc. We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

Bio-Stimulants

AMINO ACID MINERAL CHELATES

Amino Acid Mineral Chelates are a specific form of nutritive minerals. An amino acid chelated mineral is simply a mineral (like Magnesium, Iron, Boron, etc.) that's been molecularly attached to an amino acid. Attaching amino acids to the mineral molecules creates a more stable structure that's better able to survive the acidic environment in the soil bio flora. These Amino Chelated Minerals are thought to be more easily absorbable by plants than non-chelated forms.

AVAILABLE FORMULATIONS:

CHELATE FORMULATION	BENEFITS
Calcium Amino Acid Chelate- Ca-12%	<ol style="list-style-type: none"> 1. Required for root development during the plant's early growth stage. 2. Calcium is a part of the cell wall and hence related to cell division and the cell elongation process.
Calcium Boron Amino Acid Chelate- CB 6:1	<ol style="list-style-type: none"> 1. Helps in pollination, fertilization, and the formation of seeds and grains. 2. Helps to maintain the balance of sugar and starch in the plant and aids in their translocation in the plant, as well as plant growth and development.
Boron Amino Acid Chelate- B-12%	<ol style="list-style-type: none"> 1. Enhances regulation of plants' hormone levels and promotes proper growth. 2. Increases flower production and retention, pollen tube elongation and germination, and seed and fruit development.
Copper Amino Acid Chelate- Cu-12%	<ol style="list-style-type: none"> 1. Promotes chlorophyll and protein synthesis while slowing plant aging, resulting in increased fruit and grain production. 2. Assists in process of photosynthesis and helps plant in carbohydrates and proteins metabolism.
Ferrous Amino Acid Chelates- Fe-12%	<ol style="list-style-type: none"> 1. Plays a critical role in metabolic processes such as DNA synthesis, respiration, and photosynthesis. 2. Involved in the synthesis of chlorophyll and essential for the maintenance of chloroplast structure and function.
Magnesium Amino Acid Chelate-Mn-12%	<ol style="list-style-type: none"> 1. Assists the plant at various stages of development and severity of deficiency. 2. Captures the sun's energy for growth and production through photosynthesis.
Manganese Amino Acid chelate Mn-6%	<ol style="list-style-type: none"> 1. Plays a role in pollen germination, pollen tube growth, root cell elongation and resistance against root pathogens. 2. It also helps in maintaining the subcellular homeostasis.
Molybdenum Amino Acid Chelate Mo-2%	<ol style="list-style-type: none"> 1. Molybdenum is an essential component of two enzymes that convert nitrate into nitrite (a toxic form of nitrogen) and then into ammonia before it is used to synthesize amino acids within the plant. 2. It is also needed by symbiotic nitrogen fixing bacteria in legumes to fix atmospheric nitrogen.
Zinc Amino Acid Chelate Zn-12%	<ol style="list-style-type: none"> 1. Zinc is part of an enzyme that regulates the equilibrium among carbon dioxide, water, and carbonic acid. 2. Zinc is found to be associated with water relations in plants and improves water uptake.
Aminofert MMF	Consortium of all chelated minerals.

DOSAGE:

- **Field Crops & Vegetables:** Apply Amino Acid chelates 0.5 - 1 kg/hectare during periods of rapid growth or nutritional stress. The application can be repeated twice or more times during the growth season.
- **Tree Crops:** Make an application of Amino Acid chelates 0.5 to 1.5 kg/hectare after the beginning of active growth. The application may be repeated at 2 to 4 weeks' intervals through the growth season.
- **Grapes & Berries:** Make an application of Amino Acid chelates 0.5 - 1 kg/hectare after active growth begins. The application can be repeated at intervals of one week or more during the vegetative growth period.

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We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

SEAWEED LIQUID 20%

Seaweed Liquid is derived from the fermentation of the seaweed by deploying a cold process, in which microbial organisms rupture the cell wall and release the bio stimulant substances into the broth. Seaweed Liquid helps in optimizing the vegetative growth in the initial phases of crop growth. It promotes better tillering, vegetative growth, root growth, and nutrient uptake. It also provides resistance to plants against drought conditions.

Seaweed liquid activates the soil bacteria, especially the rhizosphere bacteria, which are responsible for better growth of root system. Seaweed liquid is used as an effective foliar spray and soil application product.

BENEFITS:

- Seaweed liquid is effectively promoting better vegetative growth, better tillering, better rooting, and plant growth.
- Improved plant health
- Efficient nutrient uptake
- Increased crop productivity
- Drought resistance
- Safe to use along with several bio fertilizer inoculums.

DOSE AND APPLICATION:

The following table gives details on application methods and doses for the different formulations.

APPLICATION TYPE	SOLUBLE LIQUID FORMULATION
Foliar	2 ml/L water in early stage of plant Typical hectare dose:1.25-2.5L

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Bio-Fertilizers

MYCORRHIZAE

(*Glomus intraradices* / *Rhizophagus irregularis*)

Mycorrhizae is an environmentally friendly, phosphate-solubilizing, and nutrient-mobilizing fungal product containing Vesicular Arbuscular Mycorrhizal (VAM), also named as Ecto & Endo- Mycorrhizae. It defines the mutually beneficial relationship between the plant and the root fungus. It also protects plants from disease-causing organisms at their roots. It helps in improving the soil's fertility.

Mycorrhizae release powerful enzymes into the soil that dissolve hard nutrients such as organic nitrogen, phosphorus, iron, and other tightly bound nutrients.

Concentrated Mycorrhizae Powder (3500 IP/Gm)

Concentrated Mycorrhizae with Root Development Base.

A high-quality microbial fungus enriched with a large amount of plant growth stimulant. It is an excellent yield enhancer for crops that boost growth rapidly. Concentrated Mycorrhizae is an advanced formulation plant supplement that promotes seedlings, cuttings, transplants, and direct sown crops. Mycorrhizae are non-phytotoxic and can be used for soil or foliar applications. It can be applied through drip irrigation, fertigation, or sprayer systems. This formulation is in powder form with 3500 IP/gm.

Direction for use: 250 - 500 gm/hectare for root, soil, and seed treatment. Seed treatment assures an increase in yield of 15%.

Mycorrhiza Granules

Enhanced Performance with Root Development Base.

This is a microbial used root stimulator along with organic nutrients. These nutrients boost the performance and effectiveness of mycorrhizae in soil. It is coated on bentonite granules.

BENEFITS:

- Increase the surface absorbing area of roots 100 to 1000 times.
- Healthier and denser root system
- Improved ability to get nutrients from the soil
- Significantly lower need for irrigation
- Improves tolerance from drought, salt, and prevents nutrition imbalance.
- Increase plant resistance to pathogens and fungal diseases caused by Fusarium and Phytophthora
- Reduce the use of DAP by up to 40% in a single season.
- Decrease the mortality rate of the plant after transplantation.
- Improves organic matter and soil structure.

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Bio fertilizers are living microbial fertilizers that help in plant growth either by solubilizing or mobilizing nutrients or by growing in the plant's rhizosphere (commonly known as the root). The Bio-Fertilizers include various microorganisms like beneficial bacteria and fungi; these two are very successful in colonizing the rhizosphere, rhizoplane, or root interior and easing the plant's overall growth and development.

CFU: 1×10^8 CFU/Gram

Dosage: 2.5- 5 kg/hectare

Mode of Application: Soil Drenching, Soil Application, and Drip irrigation.

AVAILABLE BIO FERTILIZERS:

1. NITROGEN FIXING BACTERIA:

Nitrogen fixing bacteria circulate atmospheric nitrogen and plays a very crucial role in nitrogen fixation through the ecosystems. These bacteria catch nitrogen from the air and adjust to fix that nitrogen in plants. The crops use this atmospherically fixed nitrogen for growth through nitrogen assimilation.

BENEFITS:

- Nitrogen is part of the chlorophyll molecule, which gives plants their green colour and is involved in creating food for the plant through photosynthesis. Nitrogen fixing bacteria help in the easy fixing of this nitrogen.
- It also helps in flower differentiation, promotes speedy shoot growth, improves the health of flower buds, and increases the quality of fruit set.

2. PHOSPHORUS SOLUBILIZING BACTERIA

Phosphate-solubilizing bacteria (PSB) are included in every one of the effective organisms for plant growth-promoting rhizobacteria (PGPR), which are widely used as Bio-Fertilizers for plant growth and nutrient use efficiency. These soil micro-organisms play a big role in regulating the dynamics of organic matter decomposition and also the availability of plant nutrients like nitrogen (N), phosphorus (P), potassium (K), and other nutrients.

BENEFITS:

- Produce organic acids such as malic, succinic, fumaric, citric, hydroxy, and ethanoic acids to accelerate P₂O₅ uptake, maturity, and yield.
- Reduce the 25–30% phosphatic fertilizer requirement. An effective alternative to DAP.

3. POTASSIUM SOLUBILIZING BACTERIA

Potassium solubilizing microorganisms, solubilize fixed forms of potassium to plant available K by various mechanisms including acidolysis, chelation, exchange reactions, complex lysis, and the production of organic acids. Potassium solubilizing bacteria (KSB) are ready to enhance plant growth and yield.

BENEFITS:

- KSB dissolves silicate minerals and releases K through the assembly of organic and inorganic acids, acidolysis, polysaccharides, complex lysis, chelation, and exchange reactions.
- It promotes the activation of enzymes, the use of nitrogen and also the synthesis of sugars and proteins.

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Bio-Fertilizers

4. ZINC SOLUBILIZING BACTERIA (ZSB)

ZSB are one of the capable microbes that can simply regulate plant growth-promoting properties like Zn, P, and K solubilization, biological processes, and the production of phytohormones like kinetin, indole-3-acetic acid (IAA), and gibberellin. ZSB secrete a variety of organic acids that convert the fixed form of zinc into an available form, promoting plant growth, yield, and soil fertility.

BENEFITS:

- It is plant growth-promoting rhizobacteria (PGPR) which helps in organic farming practices to reinforce zinc solubilization and its availability to plants.
- Zinc helps in the production of important growth hormones and also helps in the internode elongation in plants.

5. MAGNESIUM SOLUBILIZING BACTERIA

This bacterium ensures the easy availability of magnesium to the plants for their healthy development. It converts insoluble forms of magnesium nutrients into easy and absorbable forms, making them very effective fertilizers in mineral deficient soils. Magnesium is centrally bound in the chlorophyll molecule in plant tissue. Thus, if Mg is deficient, the shortage of chlorophyll ends up in poor and stunted plant growth.

BENEFITS:

- Magnesium helps in the activation of specific enzyme systems.
- Helps plants in overcoming chlorophyll deficiency and stunted growth.

6. SILICA SOLUBILIZING BACTERIA

Plants can uptake Si only in the soluble form of mono-silicic acid. Silica Solubilizing bacteria help in the conversion of this insoluble silica into mono-silicic acid, which helps plants by influencing the growth and development of plant roots, thus allowing better root resistance in dry soils and also accelerates the root growth.

BENEFITS:

- Provides an extra level of protection against fungal diseases such as powdery mildew.
- Helps in strengthening the cell walls, provides protection against different environmental stress conditions, and significantly improves the water and mineral uptake abilities.

7. BIO NPK

Bio NPK - Microbial Consortia is an excellent Bio-Fertilizer and acts as a complete nutrient source for the plants. It is a splendid combination of three individual microbes, Nitrogen Fixing Bacteria, Phosphate Solubilizing Bacteria and Potassium Solubilizing Bacteria, that help to fix atmospheric nitrogen, solubilize phosphate, and potash into available forms, thereby providing balanced nutrition to the crops.

BENEFITS:

- Increase nitrogen uptake and produce plant growth hormones and vitamins.
- Helps the crop with better germination, early emergence, and better root development. Increase the yield by 20–30% and the quality of the produce.

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8. IRON MOBILIZING BACTERIA

The iron mobilizing microorganisms included bacterial strains that solubilize the unavailable form of iron present in the soil and make it available to the plants in more absorbable and easy forms. These microbes are helpful to the plants in various ways, helping to build strength and immunity in the plant along with a good yield.

BENEFITS:

- Iron participates in the synthesis of chlorophyll and is required for the maintenance of chloroplast structure and function.
- Plays a critical role in metabolism processes like DNA synthesis, respiration, and photosynthesis.

9. SULPHUR MOBILIZING BACTERIA

This bacterium produces active cells that grow, multiply, and mobilize the insoluble sulphur present in the soil. Hence, it ultimately increases and improves the uptake of Sulphur and makes it readily available to the plant.

BENEFITS:

- Helps in the formation of chlorophyll, which allows plants to produce starch, sugars, oils, fats, vitamins, and other compounds through photosynthesis.
- Sulphur improves a better winter hardiness in plants.

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc. We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

Special Fertilizer

SOLUBLE SILICA WITH POTASSIUM

Soluble Silica with Potassium (Potassium Salt of Silicic Acid) is a source of highly soluble potassium and silicon ions. Available in 100% Water Soluble Powder & Liquid form.

	K ₂ O	SiO ₂
Powder	28 - 30%	58 - 60%
Liquid	12-15%	26-28%

BENEFITS:

- Applicable in any season or when plant requires the potassium ion.
- Ideal fit for Integrated Pest Management (IPM).
- Control root knots and sting nematodes.
- Safe for beneficial arthropods and plants.
- Protect the plants from fungal attacks specifically Botrytis (Gray mold) and Powdery Mildew (PM).
- Suppresses spider mites, white flies, insects and small piercing sucking insects.
- Reduces climate stress on crops and improves crop quality.
- Provides resistance to mineral stress.
- Improves photosynthesis and raises brix in all plants for fruit ripening, which removes mineral deficiencies.
- Improves plant growth and increases yield and quality.
- Reduce the lodging.
- Enhances reproduction by improving pollination and increasing pollen fertility.

EFFICACY :

The application of Soluble Silica with Potassium is effective in potato, rice, and sugarcane. When it is applied every week during the crop cycle, it will result in an impressive yield increase of 20-25%. Silica controls the diseases in Rice, Soya bean, and Sorghum by reducing the brown spot presence, and it also manages the rust disease problem in plants.

TARGET CROPS :

Rice, Soya Bean, Sorghum, Melons, Tomato, Strawberry, Blueberry, Sugar Cane, Grapes, Wheat, Barley, Cucurbits, Row Crops, Vine Crops, Ornamentals, Orchards, Vineyards, Hydroponically Grown Plants, Horticulture Crops

RECOMMENDED DOSAGES :

For Powder: Apply 300-400 gm in 300 Ltr. of water.

For Liquid: Apply 800-1200 ml in 300 Ltr. of water.

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc. We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

SOLUBLE SULPHUR WITH CALCIUM

Soluble Sulphur with Calcium is a clear liquid with 6% Calcium and 10% soluble Sulphur. It shows a significant result in Fruits, Vegetables, Cereals, Soya and Maize. It can be used as Liquid Gypsum to improve Calcium and Sulphur deficiencies. It reduces ammonia from urea. It is used as a fertilizer to compensate for calcium and sulphur deficiencies. As a soil amendment, it may be used to improve water infiltration and aid in the leaching of harmful soil salts.

BENEFITS:

Calcium -

- Works for root development during the early growth stage of the plant.
- Involved in the formation of seeds and grains.
- Essential for the apical growth of plants.
- Needed for the transportation of other minerals within the plant.
- A part of the cell wall, and hence related to cell division and cell elongation process.

Sulphur -

- Assists plants in the formation of proteins, which are essential components of many distinct characteristics.
- Improve the greenish colour and increase the leafiness of crops like spinach.
- Gives garlic and asparagus their distinctive flavours.
- Improves the quality of wheat.
- Provides an adequate supply of sulphur for healthy crop production.
- Aids initial root growth, which is important in rapidly growing crops.
- Promotes seed production and vigorous plant growth.

Improve Water
Infiltration

Resisting Rapid
Leaching from the Soil

Displace Harmful
Salts

Reduce Moisture
Stress

Increases Profit
per acre

Environmental
Friendly

TARGET CROPS :

Oilseed Crops, Legumes, Grain Crops, Root Crops, Cucurbits, Cole Crops.

RECOMMENDED DOSAGES :

Soil Application: Mix 5 Lt with 400-500 Lt of water.

Foliar Application: Mix 200-250 ml 200-250 Liters of water and spray. Foliar application is not recommended due to the possibility of burning. Do not apply this fertilizer, when temperature is more than 30°C, recommend applying in Early morning and after sunset. Recommended for pre sowing treatment on soil or field preparation.

*This formulation is recognized by the American Association of Plant Food Control Officials (AAPFCO) as a nitrogen stabilizer.

Micro-Nutrient Fertilizer

ZINC OXIDE 39.5% SC

Zinc Oxide 39.5% SC is a micronutrient fertilizer that contains a high amount of zinc. It is well-suited for foliar application; it easily penetrates plant and fruit bodies and aids in the prevention and treatment of zinc deficiency in a variety of crops. It is a free-flowing formula, which ensures the rapid and uniform spread of this product on plant surfaces and enhances better zinc absorption.

BENEFITS:

- Requires low dosage.
- Nano particles supports rapid absorption.
- Used as a tank mixture with agrochemicals.
- Promotes nitrogen metabolism and produces protein and starch.
- Boosts chloroplast & enzyme production.

SPECIFICATIONS:

SPECIFICATIONS:	
Zinc (Zn)	39.5%
Arsenic(As)	0.001%
Lead (Pb)	0.003%
Cadmium (Cd)	0.001%
Specific Gr.	1.70

DOSAGE AND APPLICATION METHOD:

Cereals 1.0 - 1.5 ml/l water 30-35 days after sowing and repeat at 40-45 days after sowing. Water rate: 400 - 500 liters per hectare.	Citrus Spray 1 - 1.5 ml/liter water firstly after bahaar treatment stage and secondly at fruit setting stage. Water rate: 500 - 1000 liters per hectare.	Cotton 0.3 to 1 l/ha 3 to 4 weeks after emergence. Repeat as required with 10 to 14 days between treatments. Water rate: 50 - 150 liters per hectare.
Maize 1.0 - 1.5 ml per liter water at 30 - 35 days after sowing. Water rate: 400 - 500 liters per hectare.	Potatoes Spray 1 to 1.5 ml/liter water 30 - 35 days after planting. Water rate: 160 - 200 liters per hectare.	Rice 1.0 - 1.5 ml/liter water at 30 - 35 DAT and repeat at 45 - 50 DAT. Water rate: 400 - 500 liters per hectare.
Sugarcane Spray 1 - 1.5 ml/liter water firstly 45 days after planting stage and secondly 90 days after planting stage. Water rate: 400 - 500 liters per hectare.	Wheat Spray 1 - 1.5 ml/liter water firstly 30 - 35 days after sowing and secondly 45 - 50 days after sowing. Water rate: 400 - 500 liters per hectare.	Apple 1st application at petal fall stage @ 1 ml/ltr water (Foliar). 2nd application post-harvest @ 1 ml/ltr water (Foliar). Maximum water rate: 1500-2000 liters per hectare.

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc. We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

BORON ETHANOLAMINE 11% SC

Boron 11% is a liquid micronutrient fertilizer for crops that have a requirement for additional boron. Boron 11% is water soluble; thus, it is easily assimilated and absorbed by crops via foliar application. Foliar application of boron is useful to enhance the vine growth, number of fruits, fruit size, and yield of many cucurbitaceous crops (vegetable crops). Its application stimulates the growth of cambium tissues and apical meristems, promotes the mobility of calcium, and increases the production of pollen and fertilization.

Liquid Boron is a preventive and curative solution to control the insufficiency and deficiency of boron in various crops.

SYMPTOMS:

- Earliest signs of Boron deficiency show an alteration in the physiology of plants and trees that prevents the absorption of micronutrients (phosphorus, chlorides, potassium, etc.) from the soil.
- Leaves become small, thick, and brittle.
- Growing points start dying.
- The plant stem thickens, internodes shorten, and flowering, seed setting, and seed formation all decrease.

BENEFITS:

- Boron is an important micronutrient which is critical for the growth and health of all crops.
- Helps in overcoming the second most widespread micronutrient deficiency problem after zinc.
- Aids in the formation of the cell wall and ensures plant stability, including the movement of energy into plant growing parts.
- Flower and pollen formation is enhanced by the application and plays a role in final seed setting.
- Effective in nitrogen fixation and nodule formation in legume crops.
- Recovers the stunted root growth of plants.

TIME OF APPLICATION:

First: 20 days after planting.

Second: At flower initiation stage.

CROPS	FOLIAR (Per Ltr. Water)
Beets, Carrots, Cucumbers	1-2 ml
Broccoli, Cabbage, Cauliflower, Melons	1-3 ml
Tomatoes, Potatoes, Peas, Lentils, Beans, Peppers	1-2 ml
Sugar Beets, Potato, Carrots	2-4 ml
Barley, Wheat, Corn, Soybeans, Sunflowers	1-2 ml
Apples, Grapes, Pears, Cherries, Peaches, Guava	1-2.5 ml
Horticulture Field	1-2 ml

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc.

We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

Micro-Nutrient Fertilizer

LIQUID CALCIUM 11% (CONCENTRATED)

Calcium 11% SC is a highly concentrated micronutrient liquid that allows a higher calcium input to be available to the plant. Liquid Calcium 11% is applied during the flowering stage, and it stimulates internal chemical pathways that promote fruit set, resulting in increased fruit yields. The application of this micronutrient liquid makes the cell wall strong, which increases plant resistance to pests and disease. The product is specially formulated to provide maximum crop safety.

BENEFITS:

- Plays an extremely important role in the development of plant tissues and help plants to grow better.
- Helps in the better growth and development of the plant cell wall.
- Crucial to activate certain enzymes and to send signals that coordinate certain cellular activities in the plants.
- Makes calcium available to the plant for healthy root development and builds immunity inside the plant against attacking pests and pathogens.
- Enhances nutrient absorption by roots and its distribution inside the plant body.

TARGET PLANTS:

Grain crops, Vegetable crops, Oilseed crops, Fruit crops, Sugarcane, Cotton, etc.

DOSAGE AND APPLICATION METHOD:

CROP	Dosage/ Liter Of Water	Application Timing
General	1.50 ml	1-2 times at flowering stage and at fruit fill time 10-15 days interval.
Vegetable	1.50 ml	4-5 times flowering stage and at fruit fill time between 10-15 days interval.
Fruit	2.00 ml	3-4 times at fruit set, fruit development and fruit set 10-15 days interval.
Other Crops	1.50 ml	3-4 times at growth time and flowering time 10-15 days interval.

DRIP IRRIGATION APPLICATION:

2 Litres of Calcium 11% for 1 Acre

The irrigation tank should be filled with half of the required amount of water. Measure the required amount of Calcium 11%, stir properly and then add the remaining water to form a uniform mixture.

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc. We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

Micro-Nutrient Fertilizer

(Liquid Fertilizer) ZINC GLYCINATE

Zinc Glycinate is a glycine mineral specifically used for foliar application. The advantage of using glycine minerals is that the glycine surrounds and protects the minerals from adverse interactions. These interactions can take place in a solution, in the soil, or on the surface of the leaf.

BENEFITS:

- Improves metabolism in plants.
- Support in protein metabolism.
- Helps in the early establishment of seedlings.
- Better bud formation in fruit crops and tillering in cereals.

STANDARD SPECIFICATION:

Product Parameters	Specification
1. Zinc (as Zn) % w/w	6.80%
2. pH (1% distilled water)	4.0 – 5.5
3. Specific Gravity gm/ml	1.21 – 1.28

TARGET CROPS:

Apple, Banana, Brinjal, Cabbage, Citrus, Cucurbits, Grapes, Maize, Mango, Pomegranate, Rice, Tobacco, Tomato, Wheat, Other Field Crops, Cash Crops, Spices & Condiments.

Field Crops	Fruit Crops	Vegetable Crops
1st Spray- 20-30 days after transplanting/sowing	1st Spray- Active growth stage	1st Spray- 25-30 days after transplanting/sowing
2nd Spray- 40-45 days after transplanting/sowing	2nd Spray - Flowering stage	2nd Spray- 25- 30 days after 1st application

Dosage	Application Method	Compatibility	Phytotoxicity
1.5 - 2.0ml / litre of water	Spray only	Do not mix with lime, copper, sulphur or mineral oil based products	Phytotoxicity has not been reported, when used as recommended.

Note: We recommend 500 ltr. of water per hectare. In long duration crops, need to go for > 2 sprays at an interval of 20 days depending on need.

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc. We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

Micro-Nutrient Fertilizer

CALCIUM GLYCINATE (Liquid Fertilizer)

Calcium Chelate is a glycine-chelated liquid formulation that contains 6.0% calcium. Calcium Chelate is used as a foliar application treatment for soils and crops where calcium deficiency is diagnosed or suspected. Calcium aids in disease resistance and convert nitrate-nitrogen into the forms required for protein formation. Calcium also activates a number of plant growth-regulating enzyme systems and improves the absorption of other nutrients by roots and their translocation within the plant.

BENEFITS:

- Provides calcium for healthy soil.
- Provides calcium for nutrient uptake.
- Provides calcium for early season growth.
- Provides calcium for healthy plant tissue.
- Provides calcium for nutritious forages.
- Provides calcium for higher yields and profit.

STANDARD SPECIFICATION:

Product Parameters	Specification
1. Calcium (as Ca) % w/w	6.0%
2. pH (1% distilled water)	5.5 – 7.0
3. Specific Gravity gm/ml	1.15 – 1.22 gm/ml

TARGET CROPS:

Apple, Peanuts, Almonds, Banana, Brinjal, Cabbage, Chilli, Citrus, Cotton, Grapes, Mango, Pomegranate, Tomato, Plantation, Litchi, Other Crops.

Dosage	Application Method	Application Time
2-3 ml/Lit of water	Spray only	First spray at flowering stage
		Second spray at fruit development stage

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc. We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

BORON GLYCINATE (Liquid Fertilizer)

Boron is necessary for plant development, growth, crop yielding, and seed development because it aids in the transfer of water and nutrition in plants. It is necessary for the balance of sugar and starch and plays a role in the movement of sugar and carbohydrates. It is important for pollination and seed production. This formulation is glycine-chelated and contains boron.

BENEFITS:

- Increase the yield and shelf life of the produce.
- It helps in new cell formation and root development.
- It helps in the formation of proteins and amino acids.
- Increase the number of flowers and fruits.
- It is a completely water-soluble, efficient boron fertilizer.
- Ensures the growth and high yield of all crops.
- Keep plants green and healthy.
- It is a micronutrient fertilizer for foliar spray.
- Better flower retention.
- Better fruit setting.

STANDARD SPECIFICATION:

Product Parameters	Specification
1. Boron (as B) % w/w	5.0%
2. pH (1% distilled water)	8.0 – 9.0
3. Specific Gravity gm/ml	1.10 – 1.23 gm/ml

TARGET CROPS:

Apple, Banana, Brinjal, Cabbage, Chilli, Citrus, Cotton, Grapes, Mango, Pomegranate, Tomato, Plantation, Litchi, Other Crops.

Dosage	Application Method	Application Time
2 ml/Lit of water	Spray only	First spray at flowering stage
		Second spray at fruit development stage

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc. We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

Bio-Fungicides

TRICHODERMA VIRIDE

CFU Count: Min 2×10^6 cfu/gm

BENEFITS:

- Eco-friendly bio-fungicide, does not cause any harm to the environment and non-targeted beneficial pest.
- Protects crops in nursery beds and in the field from a variety of soil-borne or seed-borne pathogens through the action of mycoparasitism and antibiosis.
- Decomposes raw organic farm waste, solubilizes soil phosphorus, reclaims contaminated soils, promotes plant growth, and safeguards the soil eco-system.
- Promotes plant growth and vigour while also increasing plant resistance to drought and disease.
- Compatible with organic manures and bio-fertilizers.

TARGET CROPS :

Paddy, Maize, Rice, Pulses, Vegetable crops, Oil seeds, Cotton, Ginger, Turmeric, Cardamom, Tea, Coffee, and Fruits crops etc.

TARGET PATHOGENS :

Highly effective to control the *Pythium spp.*, *Rhizoctonia spp.*, *Fusarium spp.*, *Sclerotinia spp.*, *Macrophomina*, *Cephalosporium sp.*, *Sclerotium rolfsii*, *Phytophthora spp.*, and *Meloidogyne spp.* (root knot nematodes).

DOSAGE AND APPLICATION METHOD:

Seed Treatment:

10 gm of formulation mix in 50ml. of water and applied on 1kg of seed uniformly, shade dry the seeds for 20 to 30 minutes before sowing.

Nursery Bed Treatment:

Mix 50 gm of formulation mix in 10 ltr. of water and drench nursery bed 1 Sq. meter area at time of seeding.

Seedling Treatment:

Dissolve 100 gm of formulation in 10 ltr. water and dip the roots of seedlings for 30-45 min before transplanting.

Soil Application:

Mix 2.5 kg with 50 Kg FYM and broadcast in a one-hectare field before sowing.

Foliar Application:

Mix 5 gm with 1 ltr water.

*Dossier are available

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc.

We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

TRICHODERMA HARZIANUM

CFU Count: Min 2×10^6 cfu/gm

BENEFITS:

- Eco-friendly bio-fungicide, does not cause any harm to the environment and non-targeted beneficial pest.
- Protects crops in nursery beds and in the field from a variety of soil-borne or seed-borne pathogens through the action of mycoparasitism and antibiosis.
- Decomposes raw organic farm waste, solubilizes soil phosphorus, reclaims contaminated soils, promotes plant growth, and safeguards the soil eco-system.
- Promotes plant growth and vigour while also increasing plant resistance to drought and disease.
- Compatible with organic manures and bio-fertilizers

TARGET CROPS :

Paddy, Maize, Rice, Pulses, Vegetable crops, Oil seeds, Cotton, Ginger, Turmeric, Cardamom, Tea, Coffee, and Fruits crops etc.

TARGET PATHOGENS :

Highly effective in controlling pathogens such as *Pythium spp.*, *Rhizoctonia spp.*, *Fusarium spp.*, *Sclerotinia spp.*, *Macrophomina*, *Cephalosporium spp.*, *Sclerotium rolfsii*, *Phytophthora spp.*, and *Meloidogyne spp.* (root knot nematodes).

DOSAGE AND APPLICATION METHOD:

Seed Treatment:

10 gm of formulation mix in 50ml. of water and applied on 1kg of seed uniformly, shade dry the seeds for 20 to 30 minutes before sowing.

Nursery Bed Treatment:

Mix 50 gm of formulation mix in 10 ltr. of water and drench nursery bed 1 Sq. meter area at time of seeding.

Seedling Treatment:

Dissolve 100 gm of formulation in 10 ltr. water and dip the roots of seedlings for 30-45 min before transplanting.

Soil Application:

Mix 2.5 kg with 50 Kg FYM and broadcast in a one-hectare field before sowing.

Foliar Application:

Mix 5 gm with 1 ltr water.

*Dossier are available

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc.

We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

Bio-Fungicides

PSEUDOMONAS FLUORESCENS

CFU Count: Min 1×10^8 cfu/gm

BENEFITS:

- Protect crops from a number of soil borne/seed borne plant pathogens.
- Nature-friendly and active against specific plant pathogens.
- Induces resistance in plants against pathogens.
- Helps in controlling pathogenic nematodes present in soil.
- Promotes plant growth through its PGR activity.

TARGET CROPS :

Vegetable crops, Oil seeds, Cotton, Paddy, Maize, Rice, Pulses, Sugarcane, Ornamental crops, and fruit crops.

TARGET PATHOGENS :

Highly effective against various plant pathogens such as *Fusarium spp.*, *Verticillium spp.*, *Phytophthora spp.*, *Pythium spp.*, *Rhizoctonia spp.*, *Botrytis spp.*, *Sclerotium spp.*, *Sclerotinia spp.*, *Xanthomons spp.* etc.

DOSAGE AND APPLICATION METHOD:

Seed Treatment:

10gm of formulation mix in 40ml. of water and applied on 1kg of seed uniformly, shade dry the seeds for 20 to 30 minutes before sowing.

Nursery Bed Treatment:

Drench nursery beds (one Sq meter) with @ 5-8gm of *Pseudomonas fluorescens* formulation per liter of water before sowing the seeds specially for transplanted crop like Paddy, Capsicum, Eggplant, Tomatoes, Cabbage and Cauliflowers etc.

Seedling Treatment:

Dissolve 100gm of formulation in 10 ltr. water and dip the roots of seedlings for 30-45 min before transplanting.

Soil Treatment:

Mix 2.5 - 4 kg of *Pseudomonas fluorescens* formulation in 250 kg of FYM / compost / well decomposed organic manure and broadcast in the field (one Hectare / 10,000 Sq. mt.).

Foliar Application:

Spray 4.0gm/lt to protect blast and blight diseases of paddy crop after 40-45 days of transplanting.

*Dossier are available

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc.

We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.



BACILLUS SUBTILIS

Bacillus subtilis is a Bio-Fungicide and plant growth promoting rhizobacteria (PGPR), which colonizes on roots and protects the root system of the plant. It hinders spore germination in plant pathogens and prevents pathogens from attaching to the plant; it outcompetes other soil microbes, making it exceptional for soil-borne, leaf and fruit fungal diseases. It improves nitrogen fixation, solubilizes soil phosphorus, and produces siderophores, which have bio control potential (promote plant growth while suppressing pathogen growth). It helps plant in secondary metabolites production, regulation of intracellular phytohormone activity, and increased stress tolerance.

BENEFITS:

- Competitive effects of *Bacillus subtilis* allow it to multiply and colonize massively and rapidly, due to which infection of plant pathogenic microorganisms on plants occurs, which helps in achieving antibacterial and disease-preventing effects.
- Antibacterial and bacteriostatic activities of *Bacillus subtilis* allow it to produce various substances such as subtilin, organic acids, antibacterial proteins, etc. These substances inhibit the growth and reproduction of pathogenic bacteria, destroy the bacterial structure, and kill pathogens.
- Enhance the plant's disease resistance by inducing the plant's disease resistance potential.

TARGET CROPS :

Berries, Citrus, Banana, Grapes, Strawberries, Tropical Fruits, Coffee, Cole Crops, Corn, Cucurbit Vegetables, Fruiting Vegetables, Leafy Vegetables, Legume Vegetables, Mushrooms, Oilseed Crops, Root/Tuber/Bulb Crops, Seed Crops, Spices, Nuts, Turf Grass, Watercress, Nursery Plants, and Ornamental Plants

TARGET DISEASES :

Downey mildew, Powdery mildew, Leaf blight, Double rot, Gray mold, Root rot, Root wilt, Seedling rot, Early blight, Late blight, Leaf spot, Stem rot, and Mildew diseases in crops.

DOSAGE AND APPLICATION METHOD:

Seed Treatment:

Mix 10 ml formulation with 10gram of crude sugar and apply uniformly on 1kg of seeds. Shade dry the seeds for 20-30 min before sowing.

Drench Application:

Mix 5- 12 liter formulation in 250 liters of water and drench the soil over 1 hectare.

Foliar Application:

Mix 5- 12 liter formulation in 250 liters of water and apply it with the sprayer in 1 hectare of land.

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc. We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

Bio-pesticides

BEAUVERIA BASSIANA

Beauveria bassiana is a unique biological insecticide. It is a fungus that naturally grows in soil. It is an entomopathogenic fungus that causes white muscardine disease in a variety of sap-sucking insects such as whiteflies, aphids, and thrips.

When *Beauveria bassiana* spores come into contact with a target pest, they germinate quickly and grow inside the insect via the spiracles in the cuticle. After spreading throughout the insect's body, the fungus produces toxins, drains all of the nutrients, and eventually kills the insect. The activity of this fungus is favoured by warm and humid weather. The killing speed is determined by the number of spores that contact the insect, the insect's age and susceptibility, and the environmental conditions.

CFU: NLT 1×10^8 CFU/gm or ml

BENEFITS:

- Naturally occurring, eco-friendly entomopathogenic fungus.
- Effectively controls most of the economically important crop pests.
- Pest control improves crop health, which increases productivity.
- Residues are not harmful to consumers and can be used up until the day of harvest.

TARGET CROPS :

Cereals, Pulses, Vegetables, Fruit crops, Cole crops, Orchards, Cotton, and Ornamentals in greenhouses, nurseries, lawns, & landscapes

TARGET INSECTS

Caterpillars, Weevils, Borers, Leafhoppers, Jassids, Whitefly, Aphids, Thrips, Mealybug, Fungus gnats, Mites, and May beetles.

DOSAGE AND APPLICATION METHOD:

Foliar spray:

Mix 5 kg *Beauveria bassiana* formulation in 400 lt water, filter with muslin cloth and spray in one hectare / affected area.

Soil application:

Beauveria Bassiana formulation can be sprinkled around the root-zone and incorporated into the soil either mechanically or through watering the plant. It can also be incorporated into the soil through irrigation systems during the pre or post planting stage (Filter the mixture before using the sprayer).

For greenhouse pest problems, repeat the applications every 15-20 days.

Beauveria bassiana formulation (4 kg) can be mixed with 100-150 kg of FYM/ organic fertilizer or field soil and can be broadcasted in field uniformly.

For white grubs and termites, it may be used in combination with *Metarhizium* (1:1 w/w soil drenching).

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc.

We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.



METARHIZIUM ANISOPLIAE

Metarhizium anisopliae is a biological insecticide which is an entomopathogenic fungus that causes muscardine disease on a range of insects like different bugs, weevils, and hoppers.

When spores of *Metarhizium anisopliae* come into contact with a host's cuticle by any means, the fungus rapidly grows and proliferates inside the insect. Once inside the body, it produces toxins that initiate protein degradation. The insect eventually dies as a result of chemical, mechanical, water loss, and nutrient loss effects. The killing speed depends on the number of spores contacting the insect, the insect's age, susceptibility, and environmental conditions.

CFU Count: Min 1×10^8 CFU/gm

BENEFITS:

- Controls crop pests, which have economic importance in agriculture.
- Eco-friendly and helps maintain the ecological balance, making it recommended for sustainable agriculture.
- Helps in the elimination of disease-causing pests and leads to improved plant health and, thereby, increased crop productivity.
- It does not cause harm to beneficial parasites or useful predators. It has excellent potential for thrips control in various crop ecosystems. It can also be applied during harvesting.

TARGET CROPS:

Fruit crops, Cole crops, Sugarcane, Cotton, Groundnut, Maize, Sorghum, Barley, Rice, Potato, Soybean, and Ornamentals in greenhouses, nurseries, etc.

TARGET INSECTS:

Root weevils, Black vine weevil, Spittlebug, White grubs, Termites, Japanese beetle, Caterpillar, Semi toppers, Beetle grubs, Borers, cutworms, Sucking pests like Pyrilla, Mealy bugs, Aphids.

DOSAGE AND APPLICATION METHOD:

Foliar spray:

2.5 - 4 kg of formulation in 400 lit of water. The spray volume depends *Metarhizium anisopliae* on the crop canopy. Filter the solution with muslin cloth before spray on the target pest. Spray should be done during evening hours on both sides of the leaves.

Soil Application:

Mix 5 kg of formulation with 400 kg of FYM /compost /well *Metarhizium anisopliae* decomposed organic manure. Spray some water for moisture and cover it with a polythene sheet. Remix the heap after 4 days and again cover the heap. This process should be done under shade. After complete process (8-10 days), broadcast this mixture into 1-hectare field.

Soil Drenching:

Mix 10 gm per ltr in water and drench.

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc. We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

Bio-pesticides

BACILLUS THURINGIENSIS

Bacillus thuringiensis (Bt) is a species of bacteria that lives in soil. *Bacillus thuringiensis* is widely used in agriculture for insect pest control. The endotoxins produced by this bacterium are found in a crystalline inclusions. In addition to the toxic endotoxins, other proteins are involved in the invasion of the host and which blocks the host's immune defences. These proteins are not toxic to all mammals, as they cannot get activated inside the mammalian system.

CFU:Min 1X10⁸ CFU/gram

MODE OF ACTION:

Bacillus thuringiensis (Bt) produces the Crystal (Cry) and Cytolytic (Cyt) protein families, a diverse group of proteins with activity against insects of different orders - Lepidoptera, Coleoptera, Diptera, as well as against other invertebrates such as nematodes. Their primary action consists of lysing midgut epithelial cells by introducing them into the target membrane and forming pores.

BENEFITS:

- Reduce reliance on chemical insecticides and make Bt-protected crops an obvious choice for product development with highly effective pest control.
- It is highly specific and does not show any adverse effects on humans or animals.
- Supplemental in the pest control by enhancing populations of beneficial organisms.
- Helps in increasing the infestation free yield of the crops.

TARGET PEST:

European corn borer, South-western corn borer, Tobacco budworm, Cotton bollworm, Pink bollworm, and Colorado potato beetle.

TARGET PLANTS:

Cabbage, Broccoli, Potatoes, Corn, Cotton Turnip, Greens Vegetables, Cauliflower, Melons, Cotton, Corn, Lettuce, Tomatoes, Ornamentals and many more.

DOSAGE:

Foliar application is recommended at a dosage of 5 g per litre of water.

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc. We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

AZADIRACHTIN (NEEM)

Azadirachtin is a primary insecticidal compound found in neem oil. Azadirachtin based pesticides are one of the most effective broad spectrum bio-pesticides. Azadirachtin, together with other constituents of neem seeds, exhibits insect repellent, antifeedant, and insect growth regulator properties.

MODE OF ACTION:

Azadirachtin primarily works as an anti-feedant, which disrupts insect's normal growth and molting, repels larvae and adults, sterilizes adults, and deters egg laying. It effectively prevents insects from destroying the crop.

BENEFITS:

- Produce a great variety of secondary metabolites potentially applicable in IPM programs.
- A broad spectrum pesticide with active action on more than 600 pest species.
- Minimizes the potential risk of insect resistance.
- Azadirachtin is very well received by the root system, and subsequently, it is systematically distributed through the xylem into the green parts of plant tissues and stored in leaves in an unchanged form.
- Harmless to non-target and beneficial organisms like earthworms, honey bees, mammals, and other vertebrates.
- Safe to use with conventional and special fertilizers simultaneously.
- Organic, non-toxic, 100% biodegradable, and eco-friendly.

AVAILABLE FORMULATIONS AND DOSAGE:

FORMULATION	DOSAGE
Azadirachtin 0.03% EC (300ppm)	5 litre / hectare
Azadirachtin 0.15% EC (1500ppm)	3 litre / hectare
Azadirachtin 0.3% EC (3,000ppm)	2 litre / hectare
Azadirachtin 1% EC (10,000ppm)	1.5 litre / hectare
Azadirachtin 3% EC (30,000ppm)	1 litre /hectare

TARGET PEST:

Thrips, Jassids, Aphids, and White Flies; and Chewing Pests Like Helicoverpa, Spodoptera, and Loppers Azadirachtin is a broad-spectrum pesticide that affects over 600 species of pests, including insects, nematodes, fungi, and viruses.

TARGET PLANTS:

Fruits, Vegetables, Plantation Crops, Greenhouses, Turf, Outdoor Ornamentals, and Agricultural Crops such as Sugarcane, Paddy, Cotton and Tea.

*Dossier are available

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc.

We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

Bio-Nematicide

PAECILOMYCES LILACINUS

CFU Count: Min 2×10^6 cfu/gm

BENEFITS:

- Effectively controls economically important nematodes like root knot nematodes, burrowing nematodes, cyst nematodes, lesion nematodes, etc. among a wide range of crops.
- Naturally occurring fungus commonly found in soils and widely used as a nematicide is applied to the soil to control nematodes that attack plant roots.
- Actively fight against plant root nematodes by infecting eggs, juveniles, and adult females.

TARGET CROPS:

Maize, Sorghum, Soybean, Chickpea, Cow pea, Eggplant, Potato, Capsicum, Tomato, Cucumbers, Ornamental flowers, Vineyards Ornamentals in greenhouses and nurseries.

TARGET DISEASES:

Plant parasitic nematodes present in field soil include Root knot nematodes: *Meloidogyne* spp.; Cyst nematodes: *Heterodera* spp. and *Globodera* spp.; Root lesion nematodes: *Pratylenchus* spp.; Reniform Nematode: *Rotylenchulus reniformis*.

DOSAGE AND APPLICATION METHOD:

Soil Application:

10 kg of *Paecilomyces lilacinus* formulation to be mixed with 100 kg FYM / well decomposed organic manure and applied around the rhizosphere uniformly for existing crops in the field is sufficient for one hectare at the time of soil application and repeat after 40 days of planting.

Drip System:

10 kg of *Paecilomyces lilacinus* formulation to be mixed with 1000 Liters of water and filter the contents well. After filtering it can be incorporate into the soil through the drip irrigation systems either before or after planting. In the case of high nematode population pressures and in perennial crops, multiple applications are recommended.

Soil Drenching:

Mix 10g per ltr in water and drench.

Plant Growth Regulators

PACLOBUTRAZOL

Formulations: Paclobutrazol 23% SC, Paclobutrazol 40% SC (w/w)

Paclobutrazol (PBZ) is a plant growth regulator, widely used in many crops in order to produce fruit throughout the year by inhibiting gibberellin synthesis, a hormone responsible for vegetative plant growth.

Paclobutrazol inhibits shoot growth and causes dwarfing while increasing fruit bud formation, flowering, and fruit set. This plant growth regulator improves pest and disease tolerance, resistance to fungal disease, and reduces pruning demands. The use of Paclobutrazol increase chlorophyll content. Paclobutrazol acts as a stress protectant by maintaining relative water content, membrane stability index, photosynthetic activity, and photosynthetic pigments, and thereby enhancing the yield.

MODE OF ACTION:

On application of in plants, the biosynthesis of gibberellic acid is blocked. This Paclobutrazol results in a restriction of terminal growth, and the shoot, leaves, and internodes are therefore compressed into a shorter length. The diameter of the trunk and branches is also reduced. The ABA and the chlorophyll component phytol are also increased, which results in florigen formation and ultimately flowering in the terminal shoots.

APPLICATION METHOD:

The application of Paclobutrazol can be done by soil drenching or collar drenching

CROP	DOSAGE	MODE OF APPLICATION	EFFECT
Mango	1.0 g a. i./m canopy	Soil application	Growth reduction, flower induction
	4.0 - 6.0 g a.i./ tree		Growth reduction, increased sex ratio, flowering and yield
Pineapple	150 (mg/L)	Foliar spray	Delayed harvesting and yield improvement
Litchi	5 g a.i /m ² plant spread	Soil application	Growth reduction, enhanced flowering and yield
Peach, Apricot, Grape	0.5-2.0 g a.i./tree	Soil application	Growth regulation, enhanced flowering and yield
Avocado	0.6-1.25 g/ltr	Foliar application	Yield enhancement
Apple	50 - 200 mg/ltr	Foliar application	Yield improvement
Guava	500 ppm	Foliar application	Yield improvement, Growth reduction
Rice	50 mg/ltr	Soil application	Increase in grain yields and improvement in grain qualities, increase in the number of spikelets per panicle, seed setting rate. Paclobutrazol treatment also significantly improves head rice rate & amylose content. Increase in stress enzyme super oxide dismutase (SOD) and peroxidase (POD) activities
Cotton	0.05 g/m ²	Soil application, when plant height reaches 40- 50 cm	Decline in Verticillium wilt disease in cotton, increase in yield
Maize	300 mg/ltr	Seed soaking with Paclobutrazol	Increase in maize grain yields
Lentils	0.6 kg a.i./ha	11-12 leaf stage, foliar treatment	Increased dry matter production, seed yield, harvest index and yield components in lentils.

*Dossier are available

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc.

We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.

Plant Growth Regulators

GIBBERELIC ACID

Gibberellic acid is widely used in agriculture due to its properties as a plant growth regulator. Gibberellic acid is involved in the induction of seed germination, the promotion of shoot growth, the lengthening of internodes, the determination of a plant's sex expression, and the promotion of flowering. The gibberellic acid application also leads to an increased rate of cell division.

BENEFITS:

- Helps in stimulating rapid stem and root growth, induces mitotic division, and also increases seed germination rates.
- Ensures a high-quality fruit yield that is more resistant to adverse weather and other potential avenues of decay and injury.
- Gibberellic acid contributes to bud and flower development.

AVAILABLE FORMULATIONS AND DOSAGE:

FORMULATION	DOSAGE	TARGET CROPS
Gibberellic Acid 40% WSG	2.5-10gm product in 60-100 litres of water	Rice, Grapes, Pineapple, Apple, Cherries, Berries, Citrus, Watermelon etc.
Gibberellic Acid 10% SL	200 - 250 ml in 500 liters of water	Paddy, Cotton, Groundnut, Wheat, Sugarcane, Okra, Brinjal, Grapes and Cucurbits crops.
Gibberellic Acid 20% SL	125 - 175 ml in 500 litres of water	Rice, Sugarcane, Cotton, Groundnut, Banana, Cabbage, Cauliflower, Grapes, Brinjal, Okra, Mulberry etc.

APPLICATION METHOD:

Versatile product can be applied by foliar spray and drench application as per the requirement.

*Dossier are available

*The application method is solely for guidance purposes. Application rates will vary due to climate, frequency, soil, etc.

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TRIACONTANOL

Triacontanol is a natural plant growth regulator found in epicuticular waxes. It is a saturated long-chain alcohol that is known to have a growth promoting activity when exogenously supplied to a number of plants. Triacontanol enhances the physiological efficiency of the cells and, thus, exploits the genetic potential of plant to a large extent. In fact, Triacontanol increases free amino acids, reduces sugars, and soluble protein in plant body. Triacontanol increases the dry matter production and this leads to inter-relationship between primary and secondary metabolism, and thus an increased biosynthesis. It is an incredibly versatile phytohormone which can be use with any type of plant.

BENEFITS:

- Helps in increasing the rate of photosynthesis in the plants, which leads to superior plant growth and development.
- Increase the protein biosynthesis in the plant for better yield production.
- Enhance the transport of nutrients in a plant and enzyme activity.
- Enhances seed germination and proper root growth in the plants.
- Increases the energy storing capacity in the plant cell mitochondria.
- Helps in opening the stomata.

AVAILABLE FORMULATIONS AND DOSAGE:

FORMULATION	DOSAGE	APPLICATION RATE	METHOD OF APPLICATION
Triacontanol 0.1% EW	250 ml/hectare the dilution is recommended in 250-300 litres of water/ hectare	Two to three spray as recommendation	Foliar Spray
Triacontanol 0.05% EC	625 ml/hectare the dilution is recommended in 500-700litres of water/hectare	Two to three spray at 45, 65 and 85 days after planting	Foliar Spray
Triacontanol 0.05 GR	15 kg/hectare of land is recommended	Two to three days before Sowing or Transplanting	Soil Application

TARGET CROPS:

Potato, Cotton, Tomato, Rice, Chillies and Groundnut, and Leafy vegetables .

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Plant Growth Regulators

FORCHLORFENURON (C.P.P.U.) 0.1% L

Forchlorfenuron (C.P.P.U.) is a highly active cytokinin-like plant growth regulator that promotes chlorophyll biosynthesis, cell division, and cell expansion. CPPU (N-(2-Chloro-4pyridyl)-N'-phenyl urea), a new synthetic phenyl urea derivative of cytokinin, increases plant growth by inhibiting cytokine oxidase, a regulator of cytokinin activity. It acts synergistically with natural auxins to promote plant cell division and lateral growth.

BENEFITS:

- It is effective on grapes for increasing fruit size.
- Stronger cap stem attachment.
- Delay the harvest in later regions.
- Increase in yield, height, and weight of plants.

AVAILABLE FORMULATIONS AND DOSAGE:

CROP	DOSES (g a.i./acre)	EFFECT
Blue berries	5-8	Berry size increased
Rabbiteye blue berries	5	Berry size and berry set increased
Bush berries (Black Currant, Red Currant, Elderberry, Gooseberry and Lingonberry)	5	Berry size increased
Seedless grapes	8-15	Increased berry size, improved cluster weight & total yield. Improved fruit quality in cold storage and delay in grape maturation.
Seeded grape for fresh market	5-25	Increased berry size, improved cluster weight & total yield.
Seeded grapes for wine	5-25	Increased berry set, or berry size
Seeded grapes for wine	5-25	Increased berry set, or berry size
Grapes for raisin	5-25	Increased fruit set and/or berry size, and may affect drying ratio.
Kiwi fruit	5-10	Increased fruit size
Pears	5-8	Increased fruit size resulting in increased yield.
Cherries (Sweet)	5-8	Increased fruit diameter
Figs	5-8	Maximize the number of figs
Pistachios	5-8	Increased nut weight
Plum/Prune	4-5	Increased fruit set

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We encourage users to conduct their own testing in order to determine what is best for their crop under their specific conditions and environments.



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