Quality product coupled with an excellent service

Promagicell Lifetech Pvt. Ltd. is one of the well-known Agro-Biotechnology enterprises. We are emerging as an agricultural inputs supplying company dedicated to research & development, production, and commercialization of environment friendly products in the form of Bio-fertilizer and Micronutrients for growth and sustainability of agriculture.

We have setup a state-of-the-art laboratory and production unit at land of coffee, Chikmaglur. We are producing and supplying wide range of products such as RAKSHAM™-BioRich Brand Bio-fertilizers, Bio-fungicides, Bio-Nematicides, Growth promoting bio-fertilizers and elements solubilizing bio-fertilizers. We are also producing and supplying micronutrients in the brand name RAKSHAM™-MicroCare.

Continuous upgradation of manufacturing process and aligned services are prime reasons for our exceptional performance. Every single product we supply are tested for different physical and chemical parameters before reaching end user.

We understand that the better quality product gives great performance. We assure our customer, a great sense of satisfaction through our quality product coupled with an excellent service. With this motto, we are launching following products under trademarked brand name RAKSHAM™. Many more products are also in channel to be launched.

- **Biofertilizers (RAKSHAM™-BioRich)**
- **Micronutrients (RAKSHAM™-MicroCare)**

Dr. Mallikarjuna B. G.  M.Sc., Ph.D.
CEO & Scientist
RAKSHAM Agri Products
Promagicell Lifetech Pvt. Ltd.
RAKSHAM™-TrichoRich is a naturally occurring bio-fungicide preparation containing spores and mycelia fragments of a selected strain of antagonistic fungus, *Trichoderma viride*. The product is a defensive biological fungicide that attacks disease causing pathogens before they reach the root system. It is highly interactive in root, soil and foliar environments. This formulation is a very effective biological mean for plant disease management. It can inhibit and eliminate pathogens through different mechanisms like competition, antibiosis, mycoparasitic, hyphen interactions, and enzyme secretion.

**Benefits:** It controls diseases causing pathogens like *Rhizoctonia solani*, *Sclerotia homocarpa*, *Pyniculasa oryzae*, *Fusarium sp.*, *Pyniculasa oryzae*, *Alternaria sp.* which causes root rot, root wilt, stem rot seedling rot, color rot, die-back, damping off, fungal wilt disease in crops and helps to improve the soil health.

**Application & Dosage**

<table>
<thead>
<tr>
<th>Target Crops</th>
<th>Packaging</th>
</tr>
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<td>1 / 5 &amp; 20 litre</td>
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**Benefits:** It controls diseases causing pathogens like *Rhizoctonia solani*, *Sclerotia homocarpa*, *Pyniculasa oryzae*, *Fusarium sp.*, *Pyniculasa oryzae*, *Alternaria sp.* which causes root rot, root wilt, stem rot seedling rot, color rot, die-back, damping off, fungal wilt disease in crops and helps to improve the soil health.

**Application & Dosage**

| Soil application & drip irrigation: 1-2 litre/acre | Foliar spray: 2.5- 5 ml/litre water & 1-2 litre/acre |
| Foliar spray: 2.5- 5 ml/litre water & 1-2 litre/acre |

**RAKSHAM™-PseudomoRich** is a bio-fungicide containing the cells of rhizobacteria, *Pseudomonas fluorescens*, it controls the pathogens by winning the competition for food in the substrate. It improves the yield by improving the plant health through controlling the disease-causing pathogens. It offers long-lasting control against the pathogens by secreting secondary metabolites that exhibit antibiosis effect on the pathogens. It is a common non-pathogenic saprophyte that colonizes in soil, water and on plant surfaces. It produces a soluble greenish fluorescent pigment. *Pseudomonas fluorescens* suppress plant diseases by protecting the seeds and roots from fungal infections.

**Benefits:** It controls the disease causing pathogens such as *Selerotina homoeocarpa*, *Botrytis cinerea* and *pythium Fusarium sp.* causing root rot, root wilt, seedling rot and color rot disease in crops and also helps to improve the soil health.

**Application & Dosage**

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RAKSHAM™-NPK-Rich is a consortium of nitrogen fixing, phosphorus solubilizing and potassium mobilizing microorganisms. *Azospirillum brasilence, Bacillus megaterium & Frateuria aurantia* are combined to produce the consortium. The product is used to make available nitrogen, phosphorus and potash to the plants. The product will also provide balanced forms of micronutrients into available form. These microorganisms decrease the hardness of soil by increasing porosity and water holding capacity. It also increases the resistance power of plants.

**Benefits:** It fixes the atmospheric nitrogen to the plant, supplies phosphorous to the plants & enhances potash up take in plants. It improves plant vigour & health. The product improves the organic content and microbial population of the soil.

**Application & Dosage**
- **Seed:** 10 ml/kg of seed
- **Soil application & drip irrigation:** 1-2 litre/acre

**Target Crops**
- Can be used in all crops

**Packaging**
- 1 / 5 & 20 litre

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**RAKSHAM™-NitroRich** is a product containing aerophilic micro-organism, *Azospirillum*, which fixes the atmospheric nitrogen and makes it available to the plants. *Azospirillum* culture also synthesize some amount of active substances like vitamins, indole acetic acid (IAA), gibberellins and nicotinic acid which helps in seed germination, early emergence and better root growth and development. *Azospirillum* colonization is mainly on the root surface, enhance mineral and water uptake. They also conserve water in field.

**Mode of Action:** *Azospirillum* is capable of fixing nitrogen through assimilation of ammonium and the activity of nitrogenase. *Azospirillum* is also capable of promoting growth of plants through the secretion of phytohormones, the most common being IAA. The IAA along with various other phytohormones alters the metabolism and the morphology of the plant root system in favor of better mineral and water adsorption.

**Benefits:** It fixes the atmospheric nitrogen to the level off 20-40 Kg per hectare and helps to reduce the amount of the synthetic fertilizer application. Helps to improve soil health and to increase crop yield.

**Target Crops**
- Can be used in all crops

**Application & Dosage**
- **Seed:** 10 ml/kg of seed
- **Soil application & drip irrigation:** 1-2 litre/acre

**Packaging**
- 1 / 5 & 20 litre
RAKSHAM™-PhosphoRich is a microbe based product on the selective strain of phosphate solubilizing bacteria (PSB)- Bacillus megaterium, cells contained in the product. These cells grow and multiply by utilizing the carbon source in the soil or root exudates. During their growth, by secreting organic acids they solubilize the fixed phosphorus in the soil and make it available to the plant in an easily usable form.

**Mode of action:** Phosphate solubilisation takes place through various microbial processes. Inorganic Phosphate is solubilized by the action of organic and inorganic acids secreted by PSB. Inorganic acids produced by PSB solubilizes insoluble phosphates by lowering the pH. Inorganic acids can also solubilizes phosphate but they are less effective compared to organic acids at the same pH. Organic Phosphate may constitute 4-90% of total soil Phosphate. Alkaline and acid phosphatases use organic phosphate as a substrate to convert it into inorganic form. Release of organic anions, and production of siderophores and acid phosphates by plant roots/microbes or alkaline phosphatases enzymes, hydrolyze the soil organic Phosphate or split Phosphate from organic residues.

**Benefits:** Supplies phosphorous to the plant to extent of 10 Kg to 15 Kg/ha & avoids soil erosion, improves the soil texture and fertility. Helps to improve soil health and to increase crop yield.

**Application & Dosage**
- **Seed:** 10 ml/kg of seed
- **Soil application & drip irrigation:** 1-2 litre/acre

**Target Crops**
- Can be used in all crops

**Packaging**
- 1 / 5 & 20 litre

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RAKSHAM™-PotashRich is a biofertilizer based on the selective strain of Frатурia sp. cells contained in the product. These cells grow and multiply by utilizing the carbon source in the soil or from the root exudates. During their growth, they solubilize the fixed potash in the soil and make it available to the plant in an easy usable form. It enhances the potash uptake in plants leading to higher productivity. Potash Mobilizing Bacteria (KMB) usually referred to as the plant growth promoting rizobacteria.

**Mode of action:** It converts insoluble form of potash to soluble form by producing organic acids. It encourages early root development, enhance plant growth, crop yield and reduce application of chemical fertilizer. It also improves soil texture and fertility.

**Benefits:** It enhances the potash uptake in plants leading to higher productivity. Helps prevent soil erosion and improves the soil texture & fertility, improves the plant immune system, helps to improve the soil health and crop yield.

**Target Crops**
- Can be used in all crops

**Application & Dosage**
- **Seed:** 10 ml/kg of seed
- **Soil application & drip irrigation:** 1-2 litre/acre

**Packaging**
- 1 / 5 & 20 litre
**Zinc solubilizing biofertilizer**

RAKSHAM™-ZincRich is high-quality zinc solubilizing biofertilizer formulation. Zinc becomes mostly unavailable to crops because of its low levels of mobility and solubility and its tendency to get adsorbed by soil making it unavailable to the plans. Our microbes can help in improving zinc uptake by plants in different ways. The Product consists of an efficient strain of Zinc solubilizing bacteria. It can mobilize Zinc to be readily available for the plants in well-maintained soils.

**Benefits:** RAKSHAM™-ZincRich enhances the uptake of zinc in plants leading to maintain the nutrient proportion and also improves soil nutrient content.

**Application & Dosage**

- **Soil application & drip irrigation:** 1-2 litre/acre
- **Foliar spray:** 2.5-5 ml/litre water & 1-2 litre/acre

**Target Crops:** Can be used in all crops

**Packaging:** 1/5 & 20 litre

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**Metarhizium anisopliae**

RAKSHAM™-MetaRich is a biological insecticide based on a selected strain of naturally occurring entomopathogenic fungus *Metarhizium anisopliae*. It contains spore and mycelia fragments of *Metarhizium anisopliae*, the spores of the fungus when comes in contact with the cuticle of the target pest insect. It germinates and grows directly through the spiracle in the cuticle into the inner body of the host, the fungus proliferates throughout the insect body, draining the nutrients of the insect and the infected insects die.

**Target Pest:** Leafhopper’s, ticks, gnats, thrips, flies, root grubs, borers, cutworms, termites, locusts, ants, beetles and caterpillar pests.

**Benefits:** It effectively controls the economically important pests such as leafhopper’s, root grubs, borers, cutworms, termites, locusts, ants, beetles, and caterpillar pests. It also helps to increase productivity by improving crop health.

**Application & Dosage**

- **Soil application & drip irrigation:** 1-2 litre/acre
- **Foliar spray:** 2.5-5ml/litre water & 1-2 litre/acre

**Target Crops:** Can be used in all crops

**Packaging:** 1/5 & 20 litre
RAKSHAM™- MicroCare is a liquid Micronutrient fertilizer formulation containing various micronutrient including Zinc, Ferrous, Manganese, Boron, Magnesium, Molybdenum.

Micronutrients are essential components in plant metabolic systems such as photosynthesis, cell wall formation, translocation and enzyme synthesis. The distribution of micronutrients in soil micronutrients are not uniform because of wide variation in soil properties, which result in either deficiency or toxicity of micronutrients in soil. Deficiency of any one or more of the micronutrients or secondary nutrients may result in poor plant growth, vigor and crop yield.

Micronutrients are required throughout the growth cycle

Closing the nutrient gap through balanced fertilization

RAKSHAM™-MicroCare has different water soluble micronutrient combinations of product for foliar and soil application.
RAKSHAM™ MicroCare is a Micronutrient fertilizer with Zinc, Iron/Ferrous, Manganese, Boron, Magnesium, Molybdenum.

**Foliar Application Grade Micronutrients**

**RAKSHAM™ MicroCare Active**
(Foliar Application Grade- 1(1))

The product contains following micronutrients with 100% water solubility
- Zinc (Zn): 3%
- Iron (Fe): 2%
- Manganese (Mn): 1%
- Boron (B): 0.5%
- Magnesium (Mg): 0.5%
- Molybdenum (Mo): 0.02%
- Copper (Cu): 0.01%

Dosage: All plantation crops: 5 ml per litre of water
Packing available: Liquid 1 / 5 / 20 litre
Suggestions: Foliar spray: 1 litre per acre per round (Qty. varies with Crop and Soil)
Crops Suitability: All Vegetable Crop, Coffee, Black Pepper, Cardamom, Areca nut, Ginger, Turmeric, Grapes & Pomegranate...

**RAKSHAM™ MicroCare Excel**
(Foliar Application Grade- 1(2))

The product contains following micronutrients with 100% water solubility
- Zinc (Zn): 3%
- Iron (Fe): 0.5%
- Manganese (Mn): 0.2%
- Boron (B): 0.5%
- Magnesium (Mg): 1%
- Molybdenum (Mo): 0.02%
- Copper (Cu): 0.01%

Dosage: All plantation crops: 5 ml per litre of water
Packing available: Liquid 1 / 5 / 20 litre
Suggestions: Foliar spray: 1 litre per acre per round (Qty. varies with Crop and Soil)
Crops Suitability: All Vegetable Crop, Coffee, Black Pepper, Cardamom, Areca nut, Ginger, Turmeric, Grapes & Pomegranate...

**RAKSHAM™ MicroCare Hills**
(Foliar Application Grade- 1(3))

The product contains following micronutrients with 100% water solubility
- Zinc (Zn): 3%
- Boron (B): 0.5%
- Magnesium (Mg): 1%
- Molybdenum (Mo): (0.02%)
- Copper (Cu): 0.02%

Dosage: All plantation crops: 5 ml per litre of water
Packing available: Liquid 1 / 5 / 20 litre
Suggestions: Foliar spray: 1 kg per acre per round (Qty. varies with Crop and Soil)
Crops Suitability: All Vegetable Crop, Coffee, Black Pepper, Cardamom, Areca nut, Ginger, Turmeric & Grapes & Pomegranate...
RAKSHAM™- MicroCare is a Micronutrient fertilizer with Zinc, Iron/Ferrous, Manganese, Boron, molybdenum.

Soil Application Grade Micronutrients

**RAKSHAM™- MicroCare Super**
(Soil Application Grade-2(1))

The product contains following micronutrients with 100% water solubility:
- Zinc (Zn) : 10%
- Iron (Fe) : 5%
- Manganese (Mn) : 2%
- Boron (B) : 0.3%
- Magnesium (Mg) : 1.5%
- Molybdenum (Mo) : 0.02%
- Copper (Cu) : 0.02%

Dosage: All plantation crops: 5 g per litre of water.
Packing available: Powder- 1 & 5 kg
Suggestions: Drip fertigation: 1 kg per acre per round (Qty. varies with Crop and Soil)
Crops Suitability: All Vegetable Crop, Coffee, Black Pepper, Cardamom, Areca nut, Ginger, Turmeric Grapes & Pomegranate...

**RAKSHAM™- MicroCare Mountain**
(Soil Application Grade-2(2))

The product contains following micronutrients with 100% water solubility:
- Zinc (Zn) : 10%
- Boron (B) : 0.5%
- Magnesium (Mg) : 0.5%
- Molybdenum (Mo) : 0.02%
- Copper (Cu) : 0.02%

Dosage: All plantation crops: 5 ml per litre of water.
Packing available: Liquid 1 / 5 / 20 litre
Suggestions: Drip fertigation: 1 litre per acre per round (Qty. varies with Crop and Soil)
Crops Suitability: All Vegetable Crop, Coffee, Black Pepper, Cardamom, Areca nut, Ginger, Turmeric Grapes & Pomegranate...

RAKSHAM™- MicroCare micronutrients are scientifically prepared micronutrient mixture in liquid form for foliar and soil application. This contains essential micronutrients required by plants for their growth and development. The product is having major elements of Zinc which helps in plant hormone balance, Auxin activity & division of cells. Ferrous assists in biological process, photosynthesis and chlorophyll synthesis. Boron helps in uniform ripening process and is essential in sugar transport and amino acid production. Manganese, activates enzymes and chloroplast production. Molybdenum is important for plant growth, it helps in the nitrogen, oxygen and sulfur cycles.

**Benefits:**
- It improves photosynthesis in plants & entire plants will become greenish.
- It will overcome micronutrient deficiency in all crops.
- Application of micronutrients improves and increases uptake of nutrients available in soil.
- Improves disease resistance in all crops.
- Though required in a small quantity, it increases yield both qualitatively and quantitatively.
- Repeated application with 15-20 days interval will keep crop in better health & growth.
RAKSHAM™ - MicroCare Micronutrient application rates table

<table>
<thead>
<tr>
<th>Crop</th>
<th>Dosage</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Soil application</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All crops</td>
<td>2 L-8 L/Acre</td>
<td>Apply as required based on soil and/or leaf analysis. Do not exceed the nutrient requirement of the crop.</td>
</tr>
<tr>
<td><strong>Foliar application</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Row crops</td>
<td>Foliar spray 200 ml-1 L/100 L water. (maximum 1-2 L/acre) Via irrigation system 5-8 L/acre. (maximum 5-8 L/acre)</td>
<td>Use minimum 200 L water/acre for foliar application. Better results might be obtained if a higher water rate is used (up to 500 L/acre). Apply at 3-8 leaf stage and repeat application as required (at least 7-14 days apart) based on soil and/or leaf analysis. Do not exceed the nutrient requirement of the crop.</td>
</tr>
<tr>
<td>Vegetable crops</td>
<td>Foliar spray 200 ml-1 L/100 L water. (maximum 1-2 L/acre) Via irrigation system 5-8 L/acre. (maximum 5-8 L/acre)</td>
<td>Use minimum 200 L water/acre for foliar application. Better results might be obtained if a higher water rate is used (up to 500 L/acre). Repeat application as required (at least 7-14 days apart) based on soil and/or leaf analysis. Do not exceed the nutrient requirement of the crop.</td>
</tr>
<tr>
<td>Fruit Tree crops</td>
<td>Foliar spray 200 ml-1 L/100 L water. (maximum 3-4 L/acre) Via irrigation system 5-8 L/acre. (maximum 5-8 L/acre)</td>
<td>Apply as required based on soil and/or leaf analysis. Repeat application as required (at least 7-14 days apart). Do not exceed the nutrient requirement of the crop.</td>
</tr>
</tbody>
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*Note: Always better to apply micronutrients based on soil test reports.

PRECAUTIONS:

✓ Always wear appropriate personal protective equipment.
✓ Keep out of reach of children.
✓ Do not store mixed product.
✓ Always verify compatibility when mixed with other agricultural remedies.

GENERAL:

✓ RAKSHAM™ - MicroCare is a fertilizer intended as a supplement to normal fertilizer programs.
✓ Foliar spraying should preferable be done during the cooler periods of the day (ideal 20 °C; < 40°C), as well as when the relative humidity is on it’s highest.
✓ Wind speed should be less during foliar spray.
✓ Do not apply to plants when plants are wilted or under stress.
✓ Please use a buffering agent to buffer pH between 5 and 6.
✓ Please use a suitable water-soluble wetting agent and penetrant to improve wetting, sticking and penetrating properties.
✓ Use preferable wide angle hollow cone spray nozzles.
✓ Try to use highest water volume possible per acre. Aim to apply a 0.2% solution (maximum 1%) for foliar administrations.
**Key Function of Elements and Identification of Deficiency**

**Ferrous (Fe)** or iron is essential for respiration and aids in chlorophyll synthesis, converts CO₂ to plant energy.

**Deficiency symptoms:** Interveinal yellowing of younger leaves

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**Zinc (Zn)** activates enzyme responsible for growth hormone and chlorophyll production, enhances and transforms carbohydrates in plants

**Deficiency symptoms:** Interveinal yellowing and rosettes of young leaves, necrotic spots and twigs die back

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**Manganese (Mn)** regulates supply of growth hormones, acts as a catalyst, activates enzymes, aids in photosynthesis and plant respiration

**Deficiency symptoms:** Interveinal yellowing of younger leaves with necrotic spots

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**Magnesium (Mg)** is constituent of chlorophyll, essential for nucleic acid synthesis, increase phosphate uptake, activates several enzymes, plant respiration, photosynthesis and carrier for phosphate and starches.

**Deficiency symptoms:** Interveinal chlorosis of older leaves

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**Calcium (Ca)**, plays a role in plant growth and nutrition, cell wall deposition. The primary roles of Calcium as a soil amendment are to help maintain chemical balance in the soil, reduce soil salinity, and improve water penetration.

**Deficiency symptoms:** Deformed young leaves & desiccation of growing points

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**Silicon (Si)** plays a role in reinforcing the cell wall of plants, and increases resistance to pests and diseases, increased tolerance to drought and heavy metals, as well as increasing both crop quality of yields

**Deficiency symptoms:** Leaves and culms become soft and droopy

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**Boron (B)** is essential in cell wall formation, translocation of sugars, regulates starch production and aids in terminal bud formulation.

**Deficiency symptoms:** Thick textured leaves & affect flowering and seed filling.

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**Copper (Cu)** is an important part of enzyme systems, promotes chlorophyll synthesis.

**Deficiency symptoms:** Yellowing and curling of leaf blades with white tips, die back of shoots.

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**Magnesium (Mg)** is essential to convert nitrate into nitrite and then into ammonia before it is used to synthesize amino acid within the plant

**Deficiency symptoms:** Yellow, wilted and rolled-up leaves with burned margins

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**Sulphur(S)** plays an important role in the defense of plants against stresses pests and essential for growth and development for crops

**Deficiency symptoms:** Yellowing of younger leaves & stunted growth

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* Colour and representation may vary depending on the crop and stage of crop.

On Terminal Buds: Ca & B
On Young Leaves: Cu, S, Fe & Mn
On Old Leaves: N, P, K, Mg, Zn & Mo

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* Colour and representation may vary depending on the crop and stage of crop.
Why With Us

- Result oriented
- Reliable products with best quality
- Better service
- Best pricing

Our products and brand names:

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<tr>
<td>Coffee waste management products:</td>
<td>RAKSHAM™-Bioclear &amp; Biolizer</td>
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</table>

Contact Us: For further information, pricing and demonstration of our products

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