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Grow clean, Grow healthy

No chemicals, no poisonous pesticides,
just the goodness of Nature!

Ponalab Biogrowth Private Limited

Reg. Office: III Floor No.134 20th Main Rajaji nagar 5th Block ,
Bangalore- 560010, KARNATAKA , INDIA

Contact Us: Tel +91 80 23153338; Customer Care: +91 80 23144644

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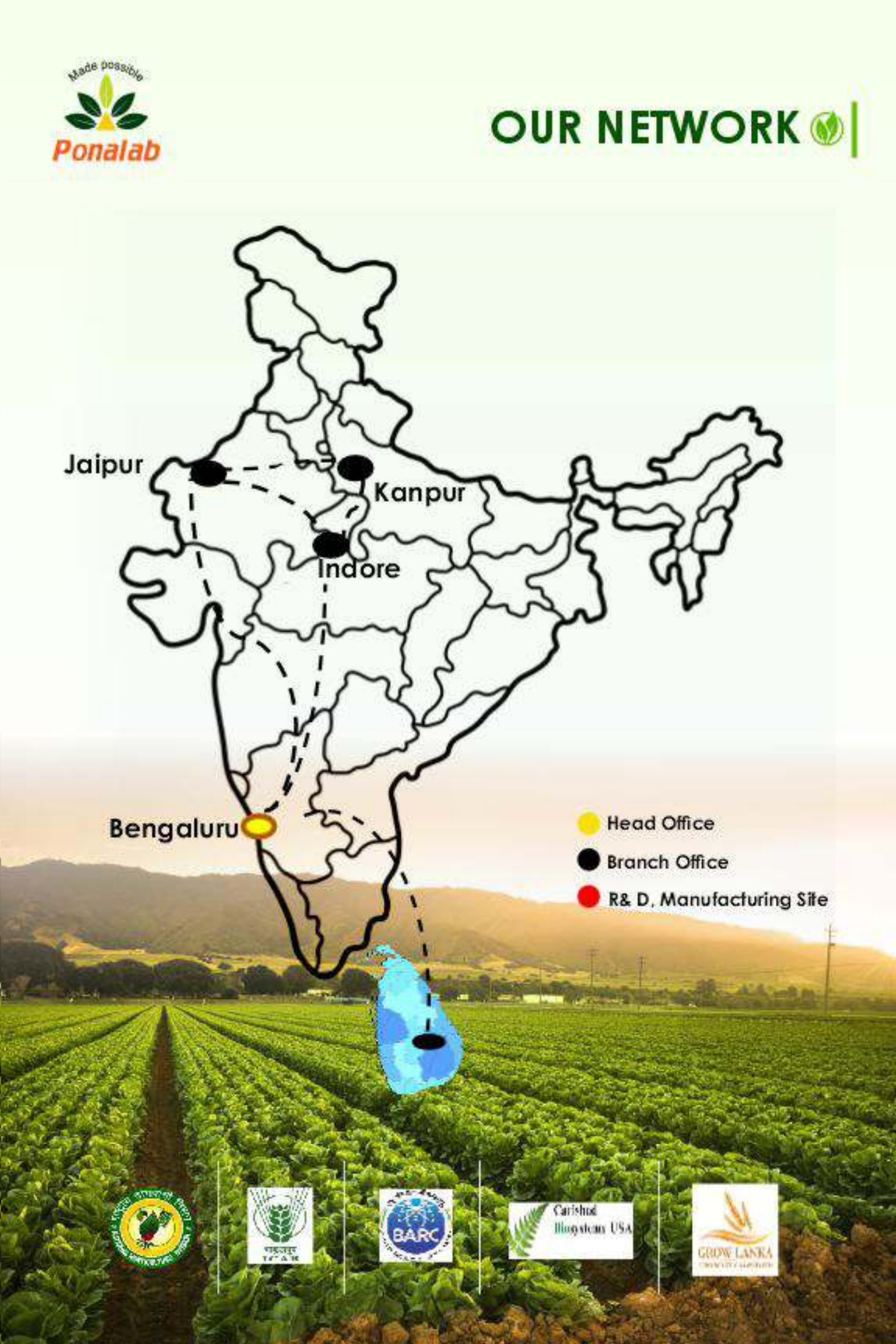
OUR NETWORK



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PONALAB focuses on empowering and enabling the organic driven biotech farming in the country. PONALAB is uniquely positioned to contribute significantly to the "FARMERS FIRST" strategies. A flagship for the farming community, especially to play a catalytic role in the development of affordable and accessible products of national and societal relevance, to promote "MAKE IN INDIA" Programme. Working through a holistic approach, we develop innovations that ultimately benefits the agriculture and allied sectors. PONALAB has today been successful in establishing a pipeline of products that helps technological innovation to move through various stages from idea to proof-of-concept to validation and scale. Target support at each of these stages helps to de-risk the path of innovation and eventual commercialization. PONALAB believes in a mission to constantly innovate and produce products that are the outcome of responses received from the market as well as its customers. PONALAB assures to provide the highest quality products on a consistent basis, both to its national and international customers.

Dr. Dinesh G Sheety
Managing Director

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When agricultural research translate into technology, the benefits accrue to the end users- the farmers. In the last five years we have close associateship with different research councils like Indian Council of Agricultural Research (ICAR) institutes, National Bureau of Agricultural Insects Resources and Defense Research & Development Organization (DRDO) institute *viz.*, Bhabha Atomic Research Centre as well as Tea Research Institute Sri Lanka. The support of various institutions to PONALAB has been established and we believe that the cumulative power of the emerging agriculture ecosystem would propel India to be a Biofarming destination for affordable and accessible products that would be "MADE IN INDIA", for Global Agriculture & Allied sectors. Making our farmers feel proud of their produce using these research oriented quality products.

Dr. Dipika D Shetty
Director

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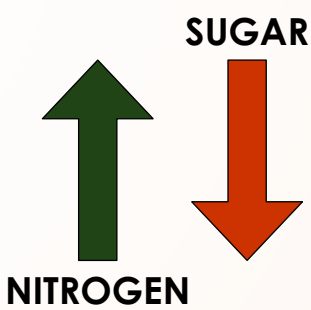
BIO-FERTLIZER

NITROSPIRILLM

Azospirillum is a freeliving, non-symbiotic, nitrogen fixing bacterium that colonizes predominantly on the root surfaces of the plant system. High efficiency of nitrogen fixation coupled with low energy requirements and abundant establishment to plant roots and tolerance to high soil temperature (30-40°C) are some of the prominent characteristics of this organism that makes it ideally suited for required conditions.

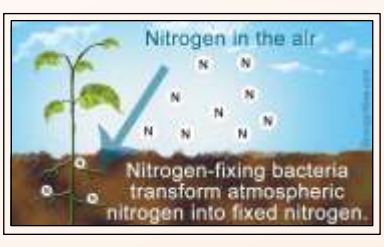
BENEFITS

- Greater root surface area.
- Production of auxin, indole-3- acetic acid increases root hair density.
- Colonies on cortex cells and intact roots of cereal crops.



Recommended crops : Paddy, cotton, sorghum, chilli, fruits and vegetables.

Direction of use	NITROSPIRILLM Powder	NITROSPIRILLM Liquid
Seed treatment	Coat 10 kg of seed with 250-300 g of NITROSPIRILLM. Shade dry and sow within 3-5 hours.	Coat 10 kg of seed with 100-200 ml of NITROSPIRILLM. Shade dry and sow within 1-2 hours.
Seedling treatment	Mix 250-300 g of NITROSPIRILLM in 50 L of water. Dip the root of seedling/sett tubers in the suspension for 10min and plant in the field.	Mix 100-200 ml of NITROSPIRILLM in 50 L of water. Dip the root of seedling/sett tubers in the suspension for 10min and plant in the field.
Soil application	Mix 5 kg of NITROSPIRILLM in 500 kg of organic manure like vermicompost or farm yard manure (FYM) and apply for 1 acre.	Mix 1 L of NITROSPIRILLM in 500 kg of organic manure like vermicompost or farm yard manure and apply for 1 acre.
Composition	CFU-5×10^{7} cells/g	CFU-1×10^{8} cells/ml
Recommended doses	5kg/acre in field application. 50-60 g/plant wise application.	1L/ acre in field application. 10-20 ml/plant wise application.
Precautions	Don't mix with the chemical fertilizers and pesticides. Maintain moisture in the field.	
Storage	Store in cool place away from direct sunlight and heat.	



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BIO-FERTLIZER

PONA A BACTOR

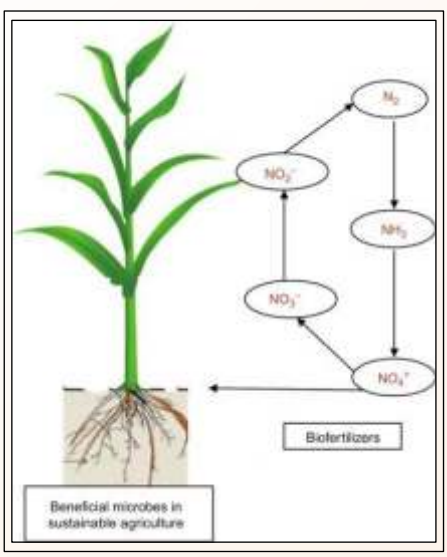
Azotobacter is free-living nitrogen-fixing bacteria. They normally fix molecular nitrogen from the atmosphere without symbiotic relations with plants Azotobacter species have a full range of enzyme *viz*, nitrogenase, ferredoxin and hydrogenase needed to perform the nitrogen fixation. Nitrogen fixation is highly sensitive to the presence of oxygen, hence Azotobacter develops a special defective mechanism against oxygen namely a significant intensification of metabolism that reduces the concentration of oxygen in the cells.

BENEFITS

- N_2 fixation.
- Produces antibiotics.
- Produces growth promoting substance.
- Stimulates soil microorganism.
- Enhances seed germination.
- Enhancing bioremediation of soil from heavy metals.

Recommended crops : Paddy, wheat, maize, Flowers, fruits and vegetables

Direction of use	PONA A BACTOR powder	PONAA BACTOR liquid
Seed treatment	Coat 10 kg of seed with 250-300 g of PONA A BACTOR shade dry and sow within 3-5 hours.	Coat 10 kg of seed with 100-200 ml of PONA A BACTOR shade dry and sow within 1-2 hours.
Seedling treatment	Mix 250-300 g of PONA A BACTOR in 50 L of water. Dip the root of seedling/sett tubers in the suspension for 10min and plant in the field.	Mix 100-200 ml of PONA A BACTOR in 5 L of water. Dip the root of seedling/sett tubers in the suspension for 10min and plant in the field.
Soil application	Mix 5 kg of PONA A BACTOR in 500kgs of organic manure like vermicompost or farm yard manure (FYM) and apply for 1 acre.	Mix 1L of PONA A BACTOR in 500 kgs of organic manure like vermicompost or farm yard manure and apply for 1 acre.
Composition	CFU-5×10^{7} cells/g	CFU-1×10^{8} cells/ml.
Recommended doses	5kg/acre in field application 50-60 g/plant wise application.	1L/acre in field application. 10-20 ml/plant wise application.
Precautions	Don't mix with the chemical fertilizer and pesticides. Maintain moisture in the field.	
Storage	Store in cool place away from direct sunlight and heat.	



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BIO-FERTLIZER

PONA RHIZO

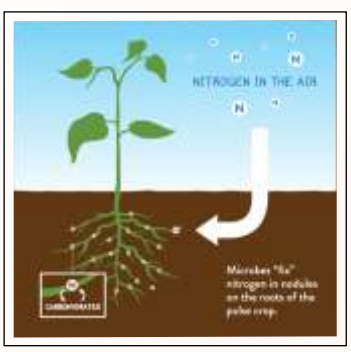
Rhizobium is the most well-known species of a group of bacteria that acts as the primary symbiotic fixers of nitrogen. These bacteria can infect the roots of leguminous plants leading to the formation of lumps or nodules where the nitrogen fixation takes place. The bacterium's & enzyme system supplies a constant source of reduced nitrogen to the host plant and the plant furnishes nutrients and energy for the activities of the bacterium. About 90% of legumes can become nodulated. Fixed nitrogen is made available to plants by the death and lyses of free living nitrogen fixing bacteria are from the symbiotic association of some nitrogen fixing bacteria with plants.

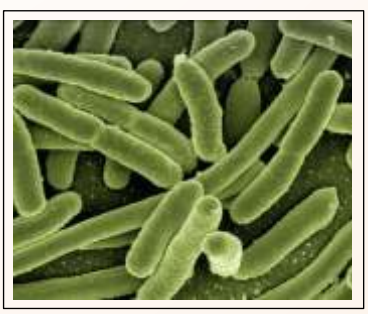
BENEFITS

- Rhizobium can fix 50-200 kg N/ha in one crop season and can leave behind substantial quantity of about 20-30 kg N/ha for the succeeding crops.
- Increases yield upto 10-35%.
- Increases soil fertility and plant growth by the secretion of mucus substances.

Recommended crops : Black gram, red gram, yellow gram, ground nut and all pulses.

Direction of use	PONA RHIZO Powder	PONA RHIZO Liquid
Seed treatment	Coat 10 kg of seed with 250-300 g of PONA RHIZO shade dry and sow within 3-5 hours.	Coat 10kg of seed with 100-200 ml of PONA RHIZO shade dry and sow within 1-2 hours.
Seedling treatment	Mix 250-300 g of PONA RHIZO in 50 L of water. Dip the root of seedling/sett tubers in the suspension for 10min and plant in the field.	Mix 100-200 ml of PONA RHIZO in 50 L of water. Dip the root of seedling/sett tubers in the suspension for 10min and plant in the field.
Soil application	Mix 5 kg of PONA RHIZO in 500 kg of organic manure like vermicompost or farm yard manure (FYM) and apply for 1 acre.	Mix 1L of PONA RHIZO in 500 kg of organic manure like vermicompost or farm yard manure and apply for 1 acre.
Composition	CFU-5×10^{7} cells/g	CFU-1×10^{8} cells/ml
Recommended doses	5kg/acre in field application 50-60 g/plant wise application.	1L/acre in field application. 10-20 ml/plant wise application.
Precautions	Don't mix with the chemical fertilizer and pesticides. Maintain moisture in the field.	
Storage	Store in cool place away from direct sunlight and heat.	





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BIO-FERTLIZER

PONA A ACETO

Acetobacter is a gram negative, endophytic bacterium. This bacterium can actively fix atmospheric nitrogen and provide significant amounts of nitrogen to the associated plants. It is an acid and high salt tolerant and sucrose loving bacteria that can fix up to 150-200kgs of nitrogen per hectare per year. Besides being a nitrogen-fixing bacterium, acetobacter stimulates plant growth by the production of phytoharmones such as indole-3- acetic acid (IAA) and gibberellic acid (GA), in vitro solubilization of plant macro and micronutrients like phosephorous, iron and zinc and biocontrol of the phytopathogens. Acetobacter has a symbiotic relationship with many different plants like sugarcane and coffee by colonizing their internal tissues to promote plant growth.

BENEFITS

- Induce vigorous root growth in early plant.
- Increase crop yield up to 20-40%.
- It improves soil properties and sustain soil fertility.
- Create immunity against soil borne fungal infections.
- Stimulates activity of beneficial microorganisms in the soil.
- Contribute to maintain nitrogen concentration in soil.

Recommended crops : Sweet sorghum, sugar beet, sweet potato, sugarcane, and all other sugar containing crops.

DIRECTION TO USE

PONA A ACETO Powder	PONA A ACETO Liquid
Seed treatment : Mix 100-200 g of PONA A ACETO with 100 L of water then soak for 3-5 hours and then sow.	**Seed treatment :** Coat 10kg of seeds with 100-200ml of PONA A ACETO then soak for 1-2hours and then sow.
Set treatment Mix 5 kg of PONA A ACETO with 200 L of water and soak the setts for 30 mins in this solutions and then plant in the main field.	**Set treatment** Mix 1L of PONA A ACETO with 200 L of water and soak the setts for 30 mins in this solutions and then plant in the main field.
Soil application Mix 5 kg of PONA A ACETO with 500 kg of organic manure like vermicompost or farm yard manure and broad cast over 1 acre of field.	**Soil application** Mix 1L of PONA A ACETO with 500 kg of organic manure like vermicompost or farm yard manure and broad cast over 1 acre of field.
Recommended dosage 5 kg / acre.	**Recommended dosage** 1 L/acre
Composition CFU- 5×10^7 cell/g	**Composition** CFU- 5×10^7 cell/ml
Precaution Don't mix with any chemical fertilizers and pesticide, maintain moisture in the field.	**Storage** Store in cool place away f rom direct sunlight and heat

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BIO-FERTLIZER

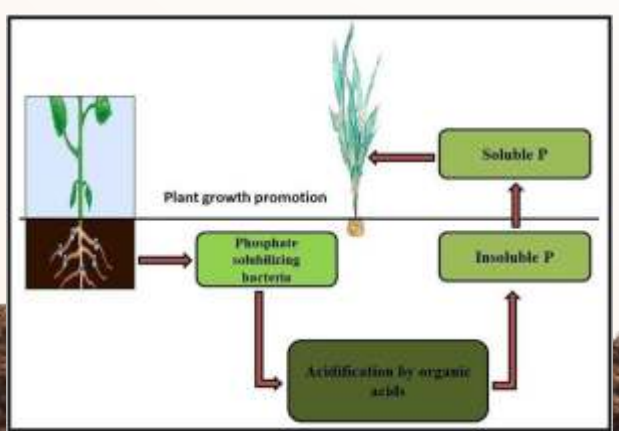
PONA Z PSB

Phosphate Solubilizing Microorganisms through various mechanisms of solubilisation and mineralization are able to convert inorganic and organic soil phosphate irrespectively into the bioavailable form facilitating uptake by pant roots. Therefore, microorganisms play an important role in all the major components of the soil phosphate cycle (*i.e* disssolution-precipitation, sorption- desorption and mineralization- immobilization). An adequate supply of phosphorus during early phases of plant development is important for laying down the primordial of the plants reproductive parts, it plays an important role in virtually all major metabolic processes in plants including photosynthesis, energy signal transduction, macromolecular biosynthesis, and respiration.

BENEFITS

- **Release of complexing or minerals dissolving compounds like organic acid anions, siderophores, protons hydroxyl ions and carbon dioxide.**
- **Liberation of extracellular enzymes.**
- **Release of phosphate during substrate degradation.**
- **Encourages early root development.**
- **Stimulates formation of fats and convertible starches helps in rapid cell development in plants.**
- **Increases resistance to diseases.**

Recommended crops : cereals, pulses, oilseeds, plantation, ornamental, fruits and vegetables.



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BIO-FERTLIZER

PONA Z PSB

Direction of use	PONAZ PSB Powder	PONAZ PSB Liquid
Seed treatment	Coat 10 kg of seed with 250-300 g of PONA Z PSB. Shade dry and sow within 3-5 hours.	Coat 10 kg of seed with 100-200 ml of PONA Z PSB. Shade dry and sow within 1-2 hours.
Seedling treatment	Mix 250-300 g of PONA Z PSB in 50 L of water. Dip the root of seedling/sett tubers in the suspension for 10min and plant in the field.	Mix 100-200 ml of PONA Z PSB in 50 L of water. Dip the root of seedling/sett tubers in the suspension for 10min and plant in the field.
Soil application	Mix 5 kg of PONA Z PSB in 500 kg of organic manure like vermicompost or farm yard manure (FYM) and apply for 1 acre	Mix 1 L of PONA Z PSB in 500 kg of organic manure like vermicompost or farm yard manure and apply for 1 acre.
Composition	CFU-5×10^{7} cells/g	CFU-1×10^{8}cells/ml
Recommended doses	5kg/acre in field application. 50-60g /plant wise application.	1L/ acre in field application. 10-20ml/plant wise application.
Precautions	Don't mix with the chemical fertilizers and pesticides. Maintain moisture in the field.	
Storage	Store in cool place away from direct sunlight and heat.	

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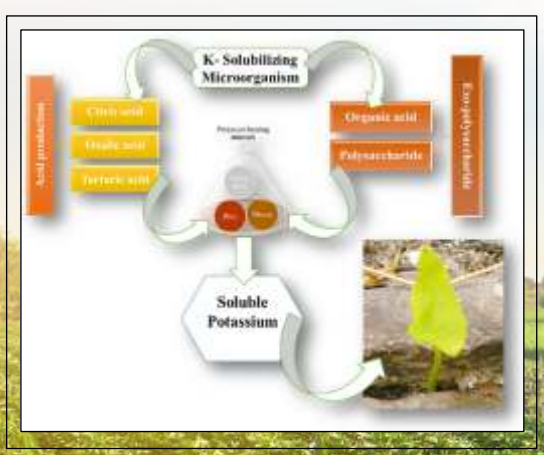
PONA POTASH

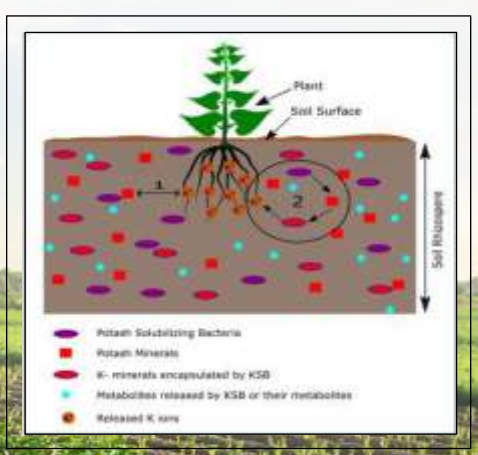
Potassium is an essential macronutrient and most abundantly absorbed cation that play an important role in the growth metabolism and development of plants. Without adequate potassium, the plants will have poorly developed roots, grow slowly produce small seeds, and have lower yields. These potassium solubilizing bacteria were found to dissolve potassium, silicon, and alluminium from insoluble minerals such as mica, illite and orthoclases, by increasing organic acid which either directly dissolves rock or chelated ions to bring into the solution.

BENEFITS

- Facilitates the progress of cell division and growth.
- Increases disease resistance and drought tolerance.
- Regulates the opening and closing of the stomata for osmotic regulation, Essential for photosynthesis.
- Activates enzymes to metabolize carbohydrates for the manufacture of amino acids.
- Assimilates transport during plant endogamy.
- Improves oil content in plants.

Recommended crops: It can be used for cereals, pulses, oilseeds, plantation, ornamental, fruits and vegetables.





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BIO-FERTLIZER

PONA POTASH

Direction of use	PONA ZSB Powder	PONA ZSB Liquid
Seed treatment	Coat 10 kg of seed with 250-300 g of PONA POTASH. Shade dry and sow within 3-5 hours.	Coat 10 kg of seed with 100-200 ml of PONA POTASH. Shade dry and sow within 1-2 hours.
Seedling treatment	Mix 250-300 g of PONA POTASH in 50 L of water. Dip the root of seedling/sett tubers in the suspension for 10min and plant in the field.	Mix 100-200 ml of PONA POTASH in 50 L of water. Dip the root of seedling/sett tubers in the suspension for 10min and plant in the field.
Soil application	Mix 5 kg of PONA POTASH in 500 kg of organic manure like vermicompost or farm yard manure (FYM) and apply for 1 acre.	Mix 1 L of PONA POTASH in 500 kg of organic manure like vermicompost or farm yard manure and apply for 1 acre.
Composition	CFU-5×10^{7} cells/g	CFU-1×10^{8} cells/ml
Recommended doses	5 kg/acre in field application. 50-60 g/plant wise application.	1 L/ acre in field application. 10-20 ml/plant wise application.
Precautions	Don't mix with the chemical fertilizer and pesticides. Maintain moisture in the field.	
Storage	Store in cool place away from direct sunlight and heat.	

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BIO-FERTLIZER

PONA ZSB

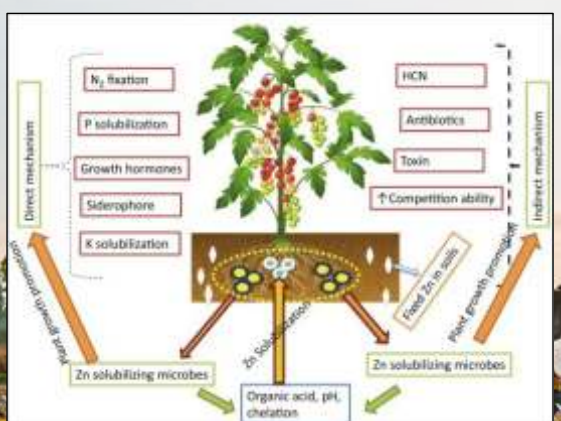
Plant take up zinc in divalent cation but only a minor portion of total zinc is present in the soil solution in soluble form. The Rest of the zinc is in the form of insoluble complexes and minerals. Due to its unavailability in soil, zinc deficiency in plants leads to retard shoot growth, chlorosis, reduced leaf size, susceptible to heat, light, and fungal infection and affects grain yield, pollen formation, root development, water uptake, and transport.

PONA ZSB contains zinc solubilizing bacteria (ZSB) that convert the insoluble form of zinc in the soil to a soluble form making it easily bioavailable to plants for their growth and development through various mechanisms like acidification (organic acid production), chelation, siderophore production, etc., and also ZSB increase the final yield while well maintaining the soil health and fertility for yielding in a sustainable way.

BENEFITS

- PONA ZSB helps in growth hormone production and internode elongation in plants.
- Enhances soil fertility and increases microbial population in soil.
- Increase bioavailability of zinc.
- Reduce the need of synthetic zinc fertilizer in the soil.
- It is natural and eco-friendly product.
- Increase zinc content in food products, enhance food efficacy and cope up with zinc deficiency.

Recommended crops : cereals, pulses, fruits, vegetables, plantation and ornamental crops.



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BIO-FERTLIZER

PONA ZSB

Direction of use	PONA ZSB Powder	PONA ZSB Liquid
Seed treatment	Coat 10 kg of seed with 250-300 g of PONA ZSB. Shade dry and sow within 3-5 hours.	Coat 10 kg of seed with 100-200 ml of PONA ZSB. Shade dry and sow within 1-2 hours.
Seedling treatment	Mix 250-300 g of PONA ZSB in 50 L of water. Dip the root of seedling/sett tubers in the suspension for 10min and plant in the field.	Mix 100-200 ml of PONA ZSB in 50 L of water. Dip the root of seedling/sett tubers in the suspension for 10min and plant in the field.
Soil application	Mix 5 kg of PONA ZSB in 500 kg of organic manure like vermicompost or farm yard manure (FYM) and apply for 1 acre.	Mix 1 L of PONA ZSB in 500 kg of organic manure like vermicompost or farm yard manure and apply for 1 acre.
Composition	CFU-5×10^{7} cells/g	CFU-1×10^{8} cells/ml
Recommended doses	5 kg/acre in field application. 50-60 g/plant wise application.	1 L/ acre in field application. 10-20 ml/plant wise application.
Precautions	Don't mix with the chemical fertilizers and pesticides. Maintain moisture in the field.	
Storage	Store in cool place away from direct sunlight and heat.	

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BIO-FERTLIZER

PONA PLUS

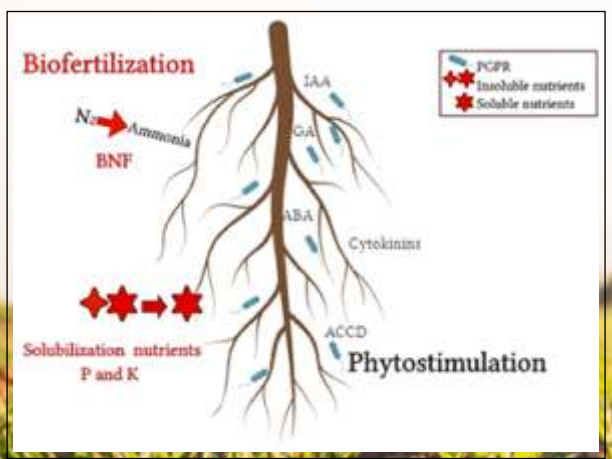
PONA PLUS is a unique bio-formulation constituted of microbial consortium (PGPR) which aid in nitrogen fixation, phosphorous solubilization, and potassium mobilization as well as producing phytoharmones like auxins and cytokinin, enzymes and metabolites that aid in plant growth and development.

The mechanism of PGPR includes regulating hormonal and nutritional balance, inducing resistance against plant pathogens, and solubilizing nutrients for easy uptake by plants. In addition, PGPR shows synergistic and antagonistic interaction with microorganisms within the rhizosphere and beyond bulk soil, which indirectly boost plant growth rate.

BENEFITS

- Improve root proliferation
- Increase nutrient mobility
- Creates plant defense systems
- Play an important role in plant response to biotic and abiotic stresses
- Helps in improving crop productivity

Recommended crops : cereals, vegetables, plantation and ornamental plants.



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BIO-FERTLIZER

PONA PLUS

DIRECTION TO USE

PONA PLUS Powder	PONA PLUS Liquid
Seed Treatment Coat 10kg of seeds with 250-300 g of PONA PLUS then soak for 3-5hours and then sow	**Seed Treatment** Coat 10kg of seeds with 100-200 ml of PONA PLUS then soak for 1-2hours and then sow
Seedling Treatment Mix 250-300 g of PONA PLUS in 5 L of water Dip the roots of seedlings /sett tubers in the suspension for 10 mins and plant in the field	**Seedling Treatment** Mix 100-200 ml of PONA PLUS in 5 L of water. Dip the roots of seedlings /sett tubers in the suspension for 10mins and plant in the field
Soil application Mix 5kg of PONA PLUS with 500 kg of organic manure like vermicompost or farm yard manure and broad cast over 1 acre of field	**Soil application** Mix 1 L of PONA PLUS with 500 kg of organic manure like vermicompost or farm yard manure and broad cast over 1 acre of field
Recommended Dosage 5 kg / acre	**Recommended Dosage** 1 L/acre OR 10-20ml/plant
Composition CFU- 5×10^{7} cell/g	**Composition** CFU- 1×10^{8} cell/ml
Precaution Don't mix with any chemical fertilizers and pesticide, maintain moisture in the field	**Precaution** Don't mix with any chemical fertilizers and pesticide, maintain moisture in the field
Storage Store in cool place away from direct sunlight and heat	**Storage** Store in cool place away from direct sunlight and heat

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BIO-FERTLIZER

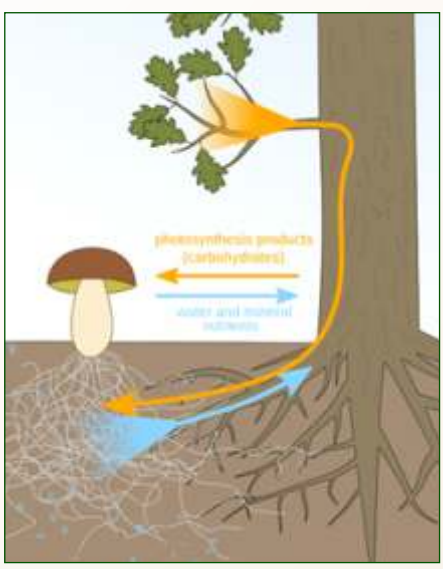
VAMFORT

VAMFORT is a VAM (Vesicular Arbuscular Mycorrhiza) bio-fertilizer. VAM is an obligatory symbiont, which forms a symbiotic association with the roots of 80% of the plants on the lands. VAM and Plants both will get benefits from their association, VAM helps the plants to obtain plant nutrients especially phosphorous from the soil which is relatively inaccessible to the plants in return plant roots serves as habitat and root exudates serves as nutrient for VAM fungi.

VAM fungi confer on host plants several other benefits in addition to enhancement of phosphate uptake. These benefits are biological control of root diseases, nodulation and nitrogen fixation in legumes, hormone production, salinity and drought resistance, improve soil structure and aggregation and increase uptake of several elements such as Nitrogen, potassium and other micronutrients like zinc, copper, boron, molybdenum, magnesium, calcium, and sulphur.

Mode of action of VAMFORT: After the application of VAMFORT to the crop field, it forms association with plants by producing hyphae, which are microscopic tubes that colonize crop roots and grow out in to the soil further than root hairs which are efficiently mobilizes uptake of fertilizers, water and other nutrients and carried back to the plants.

BENEFITS



- Extends the functional system for plant roots
- Increase soil aggregation and persistence.
- Improves water percolation and retention.
- Increase soil organic matter content.
- Reduces soil erosion and improves soil aeration.
- Improve plant nutrient status and reduces fertilizer cost.
- Counteracts metal toxicities.
- Trigger plant defensive systems for disease, pest and abiotic stresses and reduce need for pesticides cost.
- Stimulate the growth of beneficial microorganisms in the rhizosphere.
- Increase the yield and quality of the produce.

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BIO-FERTLIZER

VAMFORT

Recommended crops : cereals, pulses, vegetables, fruits, plantation, fiber crops, forest trees and nursery.

Method of application	Dosage and Direction of use	Crops
Seed treatment	Mix 20-25 g of VAMFORT In cold jaggery solution and apply evenly on seed surface. Dry treated seeds in shade for 30 mins before sowing and use on same day	All cereals, pulses, oil seeds, vegetables, flowers and fodder
Seedling treatment/ sett treatment	Mix 1 kg of VAMFORT with 50-100 L of water and dip the roots of seedlings in the solution for 30 mins and transplant.	Paddy, vegetables, flowers, sugarcane
Soil application	Mix 4 kg of VAMFORT with 50-100 kg of well decomposed manure and broadcast for 1 acre before last ploughing or after first irrigation.	All cereals, pulses, oil seeds, vegetables, flowers and fodder
Spot application	100 g of VAMFORT to each plant	Fruits and plantation crops

Note : Avoid use of chemical fertilizer especially phosphate fertilizer or chemical fungicide before or after 7days of application of VAMFORT.

Storage: Keep It In Cool And Dry Place And Away From Reach Of Children.

Without VAMFORT With VAMFORT

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SEED BIO-PRIMING

VIHAAN

What is vihaan ?

VIHAAN is a wide range of seed coating bio-primer applied to enhance the quality and yield of crops. It has been designed after years of research on numerous bio-agents to identify the best suited bio-agents.

Why use vihaan ?

Most soil borne diseases are caused due to lack of proper seed treatment. About 30% of crops gets damaged due to improper or lack of seed treatment. Govt. of India is also trying its best to encourage farmers to practice of seed treatments. PONALAB has tied up with BARC, one of the nation's premium research institutes to harness the benefits of nuclear research in the field of Agriculture. VIHAAN is an organic granular seed treatment formulation that contains microbes that produces more antibiotics than wild types.

How much vihaan to use (Dose)

VIHAAN is a highly concentrated formulation so a very nominal quantity is required. Dose of VIHAAN can be varied from 3-8 g/ kg of seed to be treated.

How to use vihan ?

Seed Treatment : Mix 5g VIHAAN/ Kg of seeds in 25-50 ml water. Shade Dry for 15-30 min.

Seedling/ Root Dip : Mix 3-5g VIHAAN in 1 Land dip seedlings for 10-15 min before planting.

Rhizome Treatment : Mix 8g VIHAAN/ kg of rhizome in 100-300 ml. Shade dry for 20-35 min.

Presentation: VIHAAN is available in 5g, 50g and 250g packing in the market.

CROPS: VIHAAN can be applied on all seeds, seedlings and rhizomes.


Tomoto seeds


Potato seeds


Vegetable seeds


Rhizome

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BIO-FUNGICIDE

CHAITANYA 24

Pseudomonas fluorescence is a saprophyte usually present in the rhizosphere, which act as bio-control agent and promotes the secretion of essential growth hormones while increasing disease resistance. *Pseudomonas fluorescence* creates greenish fluoroscenece pigment in the rhizosphere that has the potential to protect the plants from fungal infection and prevent root diseases. It also produces a group of antibiotics that competes with other plant pathogens and suppresses their growth and kills them.

Chaitanya24 also acts as efficient oxidizer, helping, reduce environmental pollutants, which will improve the fixation of nitrogen in the soil and improve the availability of useful enzymes. Chaitanya24 improves the soil properties by improving soil permeability and oxygen availability to the roots. Proper oxygen supply will prevent root diseases, fungal infection, and root rots. It is efficient in controlling rice blight in paddy crops.

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BIO-FUNGICIDE

CHAITANYA 24

BENEFITS

- It improves the yield by protecting the plants against most types of fungal infection.
- It is eco-friendly, and maintain an ecological balance.
- Promote plant growth by producing plant growth hormones.
- Target diseases : Bacterial wilt and blight caused by Erwinia and Xanthomonas species.
- Recommended crops : It can be used for vegetables, fruits, cereals, pulses, oil seed crops, ornamental and plantations crops.

DIRECTION TO USE

CHAITANYA 24 Liquid	CHAITANYA 24 powder
Seed treatment Mix 10 ml of CHAITANYA 24 per kg of seeds, soak for 1-2 hours, shade dry and sow.	**Seed treatment** Mix 2-5 g of CHAITANYA 24 in 10ml of water and soak 1kg of seeds for 1-2 hours, shade dry and then sow.
Seedling treatment Mix 10 ml of CHAITANYA 24 per liter of water and dip the cutting/seedlings for 10mins before planting.	**Seedling treatment** Mix 2-5 ml of CHAITANYA 24 per liter of water and dip the cutting / seedlings for 10 min before planting.
Foliar application Mix 1 L of CHAITANYA 24 in 200 L of water and spray for one acre.	**Foliar application** Mix 1-2kg of CHAITANYA 24 in 200L of water and spray for 1 acre.
Soil application Mix 100ml of CHAITANYA 24 in 100-200 kg of FYM and cover it for 7days with polyethylene Turn the mixture in every 3-4 days interval and then broad cast in the field.	**Soil application** Mix 1-2 kg of CHAITANYA 24 in 100-200 kg of FYM and cover it for 7days with polyethene. Turn the mixture in every 3-4 days interval and then broad cast in the field.
Recommended dosage 1 L/acre	**Recommended dosage** 1-2 kg / acre.
Composition CFU- 1×10^{8} cell/ml	**Composition** CFU- 5×10^{7} cell/g.
Precaution Don't mix with any chemical fertilizers and pesticide, maintain moisture in the field.	**Precaution** Don't mix with any chemical fertilizers and pesticide, maintain moisture in the field.
Storage Store in cool place away f rom direct sunlight and heat.	**Storage** Store in cool place away from direct sunlight and heat.

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BIO-FUNGICIDE

KAUSSHIK

(Plant Growth Promoting Bacteria)

KAUSSHIK is a biological control agent, an effective and economical biological partner in disease control programs. It adds value to all programs by providing the additional benefits of resistance management and safety to beneficial insects. KAUSSHIK is based on a naturally occurring strain developed by the Ponalab in Technical Collaboration with Carlsbad Bio-systems, USA & funded by the Government of India under National Horticulture Mission. The bacterium is prevalent in soils and has been found in a variety of habitats worldwide. It is known to be antagonistic towards many fungal plant pathogens. This antagonism may be achieved in several ways including nutrient competition, site e exclusion, colonization and attachment of the bacteria to the fungal pathogen. In addition, there are reports that these strains helps to induce plants' natural systemic resistance or systemic acquired resistance against bacterial pathogens. These bacteria can stop plant pathogen spores from germinating, disrupt germ tube growth and inhibit attachment of plant pathogen to the leaf.

KAUSSHIK is an active ingredient and is a biological control agent for use on several minor crops to treat a variety of plant diseases and fungal pathogens including grey mold, powdery mildew, downy mildew, early and late blight, bacterial spot, rust, cercospora, brown spot, wilt & root rot in Tomato, Chilly, Cucurbit, Grape, Groundnut, Pepper, Potatoes, other Horticultural & Field crops as well as Paddy and Wheat.

KAUSSHIK can be sprayed even on the day of harvest. KAUSSHIK is compatible with IPM programs. It is non-toxic to beneficial insects, mites, bees and other non-target organisms.

PACKING & USAGE :

KAUSSHIK is a powder formulation and is available in 300 g packing.

Soil Application : 2 to 4.5 Kg per acre (rate varies depending on crop & number of applications), It can be used 3 g/Kg as coco peat mixing for Nursery.

Foliar Spray : Spray 3 g /L of clean water evenly on targeted crop in evening hours. Repeat the spray every 20 days intervals.

Seed Treatment : Use 10-25 g/ kg of seed.

Made possible
Ponalab

BIO-FUNGICIDE

KAUSSHIK

(Plant Growth Promoting Bacteria)

BENEFITS

- Its efficacy, biological nature, spectrum of activity, compatibility and mode of action make it an ideal tank-mix or rotational partner in a disease management program.
- It can be used prior to harvest without leaving unsightly deposits on fruit and foliage. Besides, it is safe for humans, plants and the environment.
- Safe to beneficial insects and mites, thus fitting well into biologically-based pest management programs.

Grey mold

Powdery mildew

Downy mildew

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BIO-FUNGICIDE

TRIVIKRAM

(Bio-fungicide)

The future of food production and environmental safety is at risk due to issues in agriculture. The emergence of plant pathogenic microorganisms in crop plantations caused a pandemic plant diseases phenomenon. The best solution is to use bio-control agents.

PONALAB developed a formulation called TRIVIKRAM having *Trichoderma* sps. in combination, which acts as a bio-fungicide in effective control of many fungal diseases. *Trichoderma* sps. have been widely used in agricultural applications due to its well-known biological control mechanism. It has been shown to provide protection to plants against a number of soil-borne/seed borne pathogens like *Rhizoctonia* solani, *Macrophomina phaseolina, Fusarium* sps, *Pythium* and *Armilaria* etc., in nursery beds as well in field by mycoparasitism (parasitize on other pathogenic fungi), antibiosis (trichothecin & sesquiterpine), competition for nutrients and stimulation of systemic resistance in plants.

Beside the interaction of plant and Trichoderma sps. successfully regulate root architecture, and increase the length of lateral and primary roots, which result in the effectiveness of nutrient uptake by the plants.

BENEFITS

- It built resistance in plants to drought and diseases.
- It is compatible with organic manures and bio-fertilizers
- Stimulate plant growth, increase yield, and enhance bio availability and uptake of nutrient as well as improvement of crop quality.
- Target diseases : Root rot, collar rot, stem rot, fruit rot, damping off, wilt and blight diseases of many crops.
- Recommended crops : Cereals, pulses, vegetables, fruits, plantation, ornamental and oilseed crops etc.

Rhizoctonia Solani

Macrophomina Phaseolina

Phythium

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BIO-FUNGICIDE

TRIVIKRAM

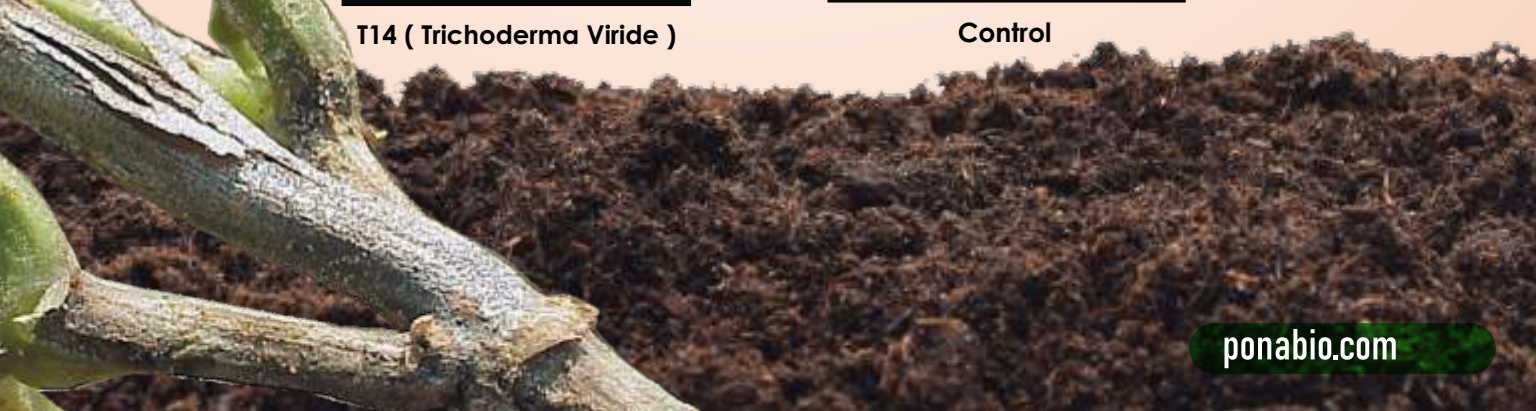
(Bio-fungicide)

DIRECTION TO USE

	TRIVIKRAM liquid	TRIVIKRAM powder
Seed treatment	Coat 10kg of seed with 1L of TRIVIKRAM, soak for 30mins and shade dry then sow.	Mix 10g of TRIVIKRAM per liter of water and treat 1kg of seeds for 30mins before sowing particularly cereals, pulses, oilseeds.
Seedling treatment	Mix 1L of TRIVIKRAM in 5 L of water. Dip the root of seedlings /sett tubers in the suspension for 10min and plant in the field	Mix 10g of TRIVIKRAM per liter of water and dip the cuttings and seedlings for 10mins before planting.
Soil application	Mix 1L of TRIVIKRAMA in 500kg of organic manure like vermicompost or FYM and apply for 1 acre.	Mix 1kg of TRIVIKRAM in 100kg of FYM and cover it for 7days with polyethene. Turn the mixture for 3-4 days interval and then broad cast in the field
Recommended dosage	1L / acre	1-2kg / acre.
Composition	Cfu- 1×10^{9} cell/ml	Cfu- 2×10^{8} cell/g
Precaution	Do not mix with any chemical fungicide and fertilizer. Maintain moisture in the field.	Do not mix with any chemical fungicide and fertilizer. Maintain moisture in the field.
Storage	Store in cool place and away from direct sunlight and heat	Store in cool place and away from direct sunlight and heat

T14 (Trichoderma Viride)

Control



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PADDY & WHEAT SPECIAL

ANKUSH

ANKUSH is a special formulation for paddy that contains a combination of microorganisms capable of fixing atmospheric nitrogen. It also solubilizes phosphorous, potassium, iron, manganese, and silicon which are required by rice. ANKUSH also has the ability to synthesize growth promoting hormones like auxins (IAA), gibberelins, cytokinin, and ethylene thereby increase the growth and development of rice.

ANKUSH is also found to have antagonistic activity against select phytopathogens *viz., Sclerotium rolfsii, Rhizoctonia solani, Fusarium oxysporum* and *Macrophomina phaseolina* etc., by producing secondary metabolites like antibiotics and hydrogen cyanide and keep other pathogens at bay by competitive exclusion due to their rapid colonisation and boost the immunity of rice plant to pathogens attack.

ANKUSH can also destroy certain toxins and pollutants in the soil and protect the rice plants from the toxic effect.

Rhizoctonia Solani

Fusarium Oxysporum

BENEFITS

- Increases chlorophyll content, root development, vegetative growth, mycorrhizal activity, and water and nutrient uptake capacity thereby results in vigorous crop growth.
- Improve soil fertility.
- Reduces and relieves diseases of plants.
- Can fix nitrogen and phosphorous up to 15-25kg/ hac.
- Save up to 25-30% of chemical fertilizers.
- Produces an average increase of 15-30% of yield could be achieved.

Made possible
Ponalab

PADDY & WHEAT SPECIAL

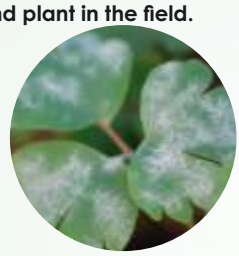
ANKUSH

Seed treatment

Mix 100ml of ANKUSH with 10kg of seeds, shade dry and sow within 1-2hours

Seedling treatment

Mix 100-200ml of ANKUSH in 5L of water, dip the roots of seedling in the suspension for 10min and plant in the field.



Foliar application

Mix 2-3ml in 1L of water and spray.

Soil application

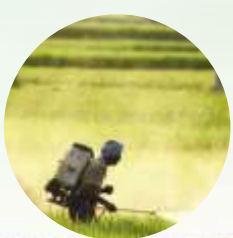
Mmix 1L of ANKUSH in 500kgs of vermicompost/FYM, mix thoroughly and apply for 1 acre

Recommended dosage

1L/acre in field application.
10-20ml/plant wise application.

Composition

CFU-1×10^8 cells/ml



Precaution

Don't mix with any chemical fertilizer and pesticide or fungicide. Maintain the moisture in the field

Storage

Store in cool and dry place and away from direct sunlight and heat. Keep reach out of children

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SYSTEMATIC FUNGICIDES

DAKSH

DAKSH contains alkaloids of plant origin fortified with inorganic salts. It is a systemic fungicide used to control downey mildew, damping off, rots of plant roots, stem and fruits, and other fungal diseases on crops.

DAKSH has direct and indirect effect on fungal pathogens. It directly inhibits oxidative phosphorylation in the metabolisms of pathogen. An indirect effect is the stimulation of the plant's natural defense response against pathogen attack.

It protective action against "Koleroga" by inducing resistance to the plant system.

Koleroga of Arecanut

BENEFITS

Activate plant defense mechanism against pathogens.

Reduce crop losse

Eco-friendly.

Recommended crops : Arecanut, coconut, pepper, ginger, tea, coffee, tobacco, tomato, potato, strawberry, banana, etc.,

Mode of application : mix DAKSH @ 3 ml per liter of water (600ml DAKSH in 200 liter of water in a barrel) and also add wetting agent CHIPKOOY 12 from POANALAB @ 1ml per liter of spray solution for better efficacy and spray on to the foliage/ spathe/crown region completely.

Precaution : Not to be applied on soil, only for leaves application, There should be minimum of 2-3 hours gap from rain after application for effective absorption of DAKSH.

Note: It may be taken up by the plants and become stable and accumulated in plants hence infrequent application is recommended.

Storage : Store in cool and dry place and away from direct sunlight and heat. Keep away from children.

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BIO-VIRICIDE

RANJAY 35

Plant viruses are a serious threat to crops and cause huge economic losses, in different crops like cereals, vegetables, fruits, legumes and cash crops. Some problematic virusus includes cotton leaf viruses, potato yellow leaf viruses, chili leaf curl virus and tomato leaf curl virus.

Chemical control of plant virus diseases is not only difficult but also pollutes the nature. Hence, eco-friendly strategies like botanicals play a major role in controlling viral infection on crops. Botanicals are being extensively used in the management of plant viruses. Effective viricides are lacking of the control of plant viruses.

However, we at PONALAB have developed a plant based product (Botanicals) that inhibits virus infection by inducing local or systemic resistance when applied a few hours prior to virus challenge. The products once sprayed on suitable host plant, prevents infection of vectors such as Whitefly, Aphids and other insects.

Why consider botanicals ?

- Sustainable solutions in agriculture.
- Reduce crop losses.
- Eco-friendly.
- Easily bio-degradable.
- Cost effective agro input.
- Helps in Integrated disease management.

Mode of Application

Prophylactic Foliar Spray- Apply 3-5 g/L of water. After 10 days, 2nd spray should be 1.5 g/L of water. In case of post infection apply 5-6 g/L of water in an interval of 7 days for 3 times.

Storage :

Store in cool and dry place, away from direct sunlight and heat. Keep away from children.


Cotton leaf curl virus


Potato yellow leaf virus


Chilly leaf curl virus


Tomato leaf curl virus

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BIO-PESTICIDE / INSECTICIDE

AARMOUR | ANUNAH | BRUTUS | BALINIEE | DIGANTH

PONA BOSSY |PONA VERTI | HEER

YUKTAVA | ANVITHA

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BIO-PESTICIDE / INSECTICIDE

AARMOUR

(Root grub control)

Host Infection
- Beneficial nematodes
- Penetrate in insect host

In-vivo toxicity
- Utilization of proteins from tissues
- Release of toxic bacteria

Spread of beneficial nematodes
- Infective juveniles (Ijs) multiplication
- Release in to the enviroment

BENEFITS

- Host-finding strategies
- Broad pest insect host range
- Rapid action
- Possible to use conventional
- Safe for all vertebrates & Persist in soil
- Highly sustainable

Sugarcane root grub

White grubs

Life cycle of root grubs

Crops	Plant	Method of application	Quantiy
Field crops	Sugarcane & Maize	Broad casting Mix with 250 kg of sand/cocopit/ sawdust/ organic manure	2-3 kg/ acre @ an interval of 3 times in a cropping season or One time application 5-8 kg/ acre before planting.
Vegetable crops	Brinjal &Potato	Broad casting: Mix with 250 kg of sand/ cocopit/ sawdust/organic manure	2-3 Kg/ acre at an interval of 2 times in a cropping season
Spices crops	Ginger	Broad casting: mix with 250 kg of sand/ cocopit/ sawdust/ organic manure.	4-5 kg/ acre at an interval of 2 times in a cropping season
Plantation crops	Arecanut & Cocunut	Spot Application : Mix with 350 kg of sand/ cocopit/ sawdust/organic manure	8-10 kg/ acre @ 200g/ tree one time application.

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BIO-PESTICIDE / INSECTICIDE

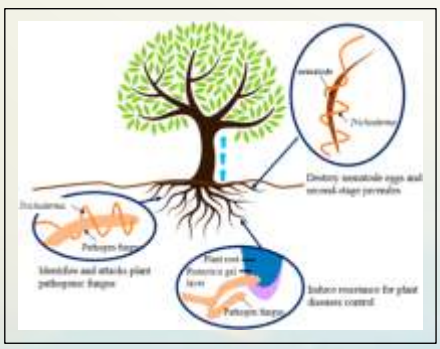
ANUNAH

Fungal pathogens are major threat in agriculture systems, causing significant losses in crop productivity. During the last decades, the control of fungal pathogens has been carried out through the uncontrolled and massive use of chemical fungicide which is very harmful to the environment and health. This requires the development of new efficient and safe alternatives. So PONALAB developed the bio-product called ANUNAH which contains *Trichoderma harzianum* which is a bio-fungicide cum bio-nematicide, highly effective in controlling soil borne diseases caused by fungal pathogens (*Fusarium, Rhizoctonia, pythium, sclerotia, verticilium, alternaria, ustilago sps., botrytis cinera and blister bight*) through various mechanisms like mycoparasitism, antibiosis, competitive exclusion, activation of systemic plant defensive responses, production of cell wall degrading enzymes and attraction of natural enemies. ANUNAH also significantly control root-knot nematode as well as cyst nematode by direct parasitism on both eggs and larva.

BENEFITS

- It is an eco-friendly product. Conserve biological and physical properties of soil without leaving any toxic residues.
- Increase the solubilization and uptake of nutrients, thus improving the general health and fitness of the crop.
- Activate the host plant defense system, providing tolerance to abiotic stress such as drought.

Recommended crops : cereals, pulses, vegetables, fruits, plantation, ornamental and oilseed crops etc.



Mode of action of ANUNAH

Root Knot Nematode

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BIO-PESTICIDE / INSECTICIDE

ANUNAH

Direction of use	ANUNAH Powder	ANUNAH Liquid
Seed treatment	Mix 10 g of ANUNAH Per liter of water and treat 1 kg of seeds for 30mins before sowing particularly cereals, pulses, oilseeds.	Coat 10 kg of seed with 1 L of ANUNAH, soak for 30mins and shade dry then sow.
Seedling treatment	Mix 10 g of ANUNAH per liter of water and dip the cuttings and seedlings for 10mins before planting.	Mix 1 L of ANUNAH in 5 L of water. Dip the root of seedlings /sett tubers in the suspension for 10min and plant in the field.
Soil application	Mix 1 kg of ANUNAH in 100 kg of FYM and cover it for 7days with polyethene. Turn the mixture for 3-4 days interval and then broad cast in the field.	Mix 1 L of ANUNAH in 500 kg of organic manure like vermicompost or FYM and apply for 1 acre.
Recommended doses	1-2 kg/acre	1 L/acre
Composition	CFU- 2×10^{8} cell/g	CFU- 1×10^{9} cell/ml
Precautions	Do not mix with the any chemical fangrade and pesticides. Maintain moisture in the field.	
Storage	Store in cool place away from direct sunlight and heat.	


Blister blight of Tea


Fusarium wilt


Pythium root rot


Corn Smut

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BIO-PESTICIDE / INSECTICIDE

BRUTUS

BRUTUS is a broad spectrum *Bacillus thuringiensis* (Bt) based liquid formulation. It is used commercially to control insects important to agriculture and public health.

BRUTUS is characterized by the release of crystalline protein, δ-endotoxin-Cry & Cyt, a-exotoxin, β-exotoxin, hemolysins, enterotoxins, phospholipases, and chitinase which is toxic to various insect groups. These proteins are produced in the form of protoxins and transformed into toxic peptides by a number of events that occur in the midgut after ingestion of Bt, killing the susceptible insect.

Importantly, BRUTUS is an eco-friendly product that has a high level of toxicity against Cotton bollworm, Diamondback moth (DBM), Pink borer, eggplant fruit & shoot borer and other Lepidopteran pests affecting pulses, vegetables and oilseeds.

Cotton bollworm

Diamond backmoth

Pink borer

Target Insects

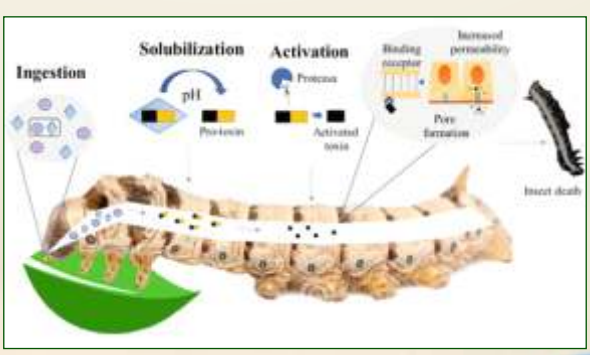
Cotton bollworm, Diamondback moth, Pink borer, Thrips and other Lepidopteran pest

Mode of application

Prophylactic Foliar spray- Mix 250 ml of product in 150 L of water and spray, pre and post pod emergence.

Application rate

Recommended dose (250 ml/ Acre). If high infection, spray can be done 4-5 times in a 4day Interval during cropping season. Spray can be done in late evenings.



Bacillus thurengenesis mode of action

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BIO-PESTICIDE / INSECTICIDE

BALINIEE

(A Herbal Protector)

Plants are, in effect, natural laboratories in which a great number of chemicals are biosynthesized. Many plants have developed natural, biochemical mechanisms to defend themselves from insect and fungal attacks. Some of these chemicals discourage feeding by insects and they provide protection or even immunity & diseases caused by some pathogens. Like other group of soil bacteria, Plant growth promoting microbes (PGPR) produce metabolites that act as growth stimulator as well as plant protection from insects also.

The Use of bio-pesticides in disease management is a popular trend for organic growers & it would be more effective & feasible if the product could be used for disease as well as nutrition management. Baliniee is a miracle liquid product, processed through fermentation using herbal extracts of ethnic medicinal plants & natural PGPR bacteria. It results in a synergistic & positive effects as it is a plant-microbes combination that work for growth as well as insect disease on plants. Baliniee become a potent tool for organic & sustainable cultivation. that control any type of insect , especially red mites.

BENEFITS

- Increase plant bush, rootlets.
- Increase photosynthesis & flowering.
- Activate plant defence mechanism
- Inhibits the action of red mites, thrips & fungi
- Acts a Lipid biosynthesis inhibitor in insects

Red spider mite

Chilly thrips

Cyclamen-mite

Application & Dose :

vegetables, garden crops & orchard crops as a plant growth simulator as well as insects, fungus killer.

Application rate : 2.5 ml / L of water or use 250 ml/ Acre in 100 L of water. In case of a power sprayer use 500 ml/ acre

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BIO-PESTICIDE / INSECTICIDE

PONA BOSSY

Beaveria bassiana is a entomopathogenic fungus that grows naturally in soils. It is considered as a potential biological control agent which controls a number of pests such as termites, thrips, whiteflies, aphids, and different beetles, which causes white muscardine disease in insects. However, the success of this fungus depends not only on high efficacy against insect pests, but also on low virulence against non-target insects.

Thrips

Whiteflies

Aphids

Insect pest infected by *Brevaria bassiana*

Mode of Action :

When the spores of this fungus comes in contact with the host insect, the fungus grows fast inside the insect body by utilizing the nutrients of the insect and forms a large mycelium and spores, and produces the Beauvericin toxin continuously which disturbs the metabolism of the insect, which eventually lead to death of insect in about 3-7 days depending on conditions.

BENEFITS

- It effectively control pests.
- Eco-friendly and maintain the ecological balance.
- Harmless and cost effective agro-input.
- Increases productivity by improving crop health by controlling pests.

Brevaria bassiana mode of action

Recommended crops : All vegetables and fruit crops, cereals, pulses, oil seed crops, floriculture and plantation crops in all the seasons at early insect pest incidence stages.

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BIO-PESTICIDE / INSECTICIDE

PONA BOSSY

Direction of use	PONA BOSSY POWDER	PONA BOSSY LIQUID
Soil application	Mix 2-3 kg of PONA BOSSY with 100-200 kg of vermicompost/FYM and keep it for 7 days under shade and broad cast per acre.	Mix 2-3kg of PONA BOSSY with 100-200kgs of vermicompost/FYM and keep it for 7 days under shade and broad cast per acre.
Pit application	For plantation crops, sprinkle 30gm of PONA BOSSY in to pit before planting. After planting, about 30 g of PONA BOSSY can be mixed with compost and sprinkled around the tree trunk in the soil.	Mix 1-2L of PONA BOSSY with 250-300gm of organic manure thoroughly. Apply 20-30g to pit before planting.
Foliar spray	Mix 3kg of PONA BOSSY in 100L of water and spray for one acre.	Mix 5-7ml of PONA BOSSY in 1L of water and spray uniformly on to the infected plants.
Recommended doses	1-2kg/acre	1L/acre
Composition	CFU- 2×10^{8} cell/g	CFU- 1×10^{9} cell/ml
Precautions	Do not mix with any chemical fungiude and pesticides. Maintain moisture in the field. Compatible with all bio-fertilizer	
Storage	Store in cool place, away from direct sunlight and heat.	

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BIO-PESTICIDE / INSECTICIDE

PONA VERTI

Verticilium lecani is a naturally occurring entamopathogenic fungs that causes white muscardine disease to the insects. PONALAB developed this formulation to enhance the insecticidal activity and biological stability.

Mode of Action:

when the spores of fungus comes in contact with the cuticle of the target pest insect, it germinates and grows directly through the spiracle in the cuticle in to the inner body of the host, by taking nutrients from the insect. It then proliferates and colonizes the entire insect and thus drains the insect of nutrients. It eventually grows through the insect to produces toxins such as dipicolinic acid and bassianolide which kills the insects in 4-6days.

Aphid killed by *Verticillium lecanii*

Target Pest:

Aphids, jassids, whitefly, thrips, mites, leaf hoppers and mealy bugs

Aphids

Jassids

Whiteflies

Thrips

Leafhopper

Mealybug

BENEFITS

- Helps to increase productivity by improving crop health by controlling pests.
- Eco-Friendly and helps to maintain the ecological balance.
- Harmless and low cost agro-input.

Recommended crops : Cereals, pulses, fruits, vegetables, plantation and ornamental crops.

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BIO-PESTICIDE / INSECTICIDE

PONA VERTI

DIRECTION TO USE

PONA VERTI Powder		PONA VERTI Liquid
Seed treatment Mix 7 g of PONA VERTI per kg of seeds. Keep it for 1-2 hours Shade dry before sowing.		**Application** Mix 100 ml of PONA VERTI with 4% jaggery or any biological sticking agent. Mix the seeds required for 1acre uniformly. Keep it for 1-2 hours and dry it in shade and then sow.
Seedling treatment Mix 100-200 gm of PONA VERTI in 5 L of water and dip the seedlings in to the solution for 15mins and then transplant.		**Seedling treatment** Mix 500 ml of PONA VERTI with required quantity of water and dip 1 acre seedling root portion for 15 min.
Soil application Mix 2 kg of PONA VERTI with 250 kgs of vermicompost/Fym. incubate it for 7days and turn frequently with 1-2 days interval and broad cast for 1 acre.		**Foliar spray** Mix 1 L of PONA VERTI with with 250 kg of vermicom post post/Fym. incubate it for 7 days and turn frequently with -2 days interval and broad cast for 1 acre.
Foliar application Mix 1-2 kg of PONA VERTI in 250 L of water and spray uniformly on the plant as well as soil above the base of the plant.		**Foliar application** Dilute 5ml of PONA VERTI with 1 L of water required for one acre and spray uniformly on the plant as well as soil above the base of the plant
Recomeded dosage 2-3 kg/acre.		**Recomeded dosage** 1-2 L / acre.
Composition CFU- 2×10 cell/g.		**Composition** CFU- 1×10^{8} cell/ml.
Precaution Keep it away from children. Store in cool and dry place, away from direct sunlight and heat.		**Precaution** Keep it away from children. Store in cool and dry place, away from direct sunlight and heat.
Storage Don't mix with any chemical pesticide and fungicide		**Storage** Don't mix with any chemical fertilizer, pesticide and fungicide.

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BIO-PESTICIDE / INSECTICIDE

HEER

Metarhizium anisopliae is an entamopathogenic fungi, which acts a biological insecticide to control many pests or insects such as Desert locust, locusts, root weevil, plant hopers, Japanese beetle, catterpillars, aphids, black vine weevil, spittle bugs, termites , cut worms, thrips, and white grubs etc., by causing green muscardine disease to them.

Aphids

Termites

Cutworms

Japanese beetle

Locust

Mode of action: *Metarhizium anisopliae* infects insects that come in contact with it. Once the fungus spores attach to the outer surface of the insect, they germinate and begin to grow. After penetrating the outside skeleton of the insect, they grow rapidly inside the insect by utilizing the nutrients available, causing the insect to die. Certain toxins called destruxin produce by this fungus, causes mortality of insects.

Locust infected by Metarhizium

Mode of action of Metarhizium anisopliae

BENEFITS

- HEER helps to increase productivity by improving the crop health by controlling the pests.
- It is eco-friendly and helps to maintain the ecological balance.
- HEER is cost-effective and harmless.

Recommended crops : Cereals, pulses, vegetables, fruits, orchards, fiber crops and flower crop.

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HEER

BIO-PESTICIDE / INSECTICIDE

DIRECTION TO USE

	HEER Powder	HEER Liquid
Soil application	Mix 2kg of HEER in 100kgs of coirpith/vermicompost/FYM/sand thoroughly and apply 20 g/plant around the base of plant.	Mix 250ml of HEER with 100kg of coirpith/vermicompost/ FYM/ sand thoroughly and apply 20 g/plant
Soil drenching	Mix 2kgs of HEER in 200L of water and drench to the base of each plant	Mix 2-4ml of HEER in 1L of water and drench to the base of each plant
Foliar spray	Mix 2kg of HEER in 250L of water and spray thoroughly on both the side of leaves.	Mix 1-3ml of HEER in 1L of water and spray on both the side of leaves.
Recommended dosage	2kg/ acre	1L /acre
Composition	CFU- 2×10^{8} cell/g	CFU- 1×10^{9} cell/ml
Precaution	Don't mix with any chemical fungicide and maintain moisture in the field. Compatible with all bio-fertilizers.	Don't mix with any chemical fungicide and maintain moisture in the field. Compatible with all bio-fertilizers.
Storage	Store in cool place and away from direct sunlight and heat	Store in cool place and away from direct sunlight and heat

Note:

Apply spray solution in the early morning or late evening.

The Spray solution should target the pests or underside of leaves.

Repeat the application of HEER after 10-15 days based on the pest population (2-3 times)

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BIO-PESTICIDE / INSECTICIDE

YUKTAVA

YUKTAVA is a natural ingredient and eco-friendly formulation which acts as fungicide, pesticide and miticide. It contains an azadiractin which acts as a hormone barrier in plant eating insects by disrupting the growth, breeding and feeding cycles.

It fights against (thrips, mites, whiteflies, aphids, jassids, and mealybugs), which kills the egg, larvaes and adult stages of insects. It also controls fungal diseases *viz.*, powdery mildew, downy mildew, needle rust, anthracnose, leaf spot, black spot, botrytis, twig, tip, and blights.


Powdery mildew


Downey Mildew


Anthracnose


Blight on tomatoes

YUKTAVA is a 100% natural and biodegradable organic solution and an effective herbal alternative to existing pesticides and insecticides.

BENEFITS

- Fast acting liquid formulation.
- Supports organic farming.
- Prevent future attack.
- It can be used safely on food, leaves no dangerous residue in the soil, and effectively reduces or kills pest and insects.
- It is water soluble and easy to use.
- It can help in maintaining environmental health by reducing the level of pollution
- Harmless to plants and maintain stability of soil fertility.

Recommended crops : cereals, pulses, ornamental, plantation and horticultural crops.

Recommended dosage : 3-5 ml/L of water or 750-1000 ml /acre.

Mode of application:
Foliar application : 5 ml per liter spray upside down on plants leaves thoroughly.
Soil application : 5 ml per liter and apply near to roots.

Note: Apply during early morning or late evening.

Storage: Store in cool place and away from direct sunlight and heat.
Keep away from children.

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BIO-PESTICIDE / INSECTICIDE

ANVITHA

ANVITHA contains diatomaceous earth, which is a naturally occurring product made up of millions of fossilized algae which are mined from seas and lakes. It acts as mechanical absorber, this fine powder absorbs lipids from the waxy outer layer of the exoskeletons of many species of insects because of its abrasive and physico-sorptive properties. This waxy layer acts as a barrier that resists the loss of water vapor from the insect's body. Damaging the waxy layer increases the evaporation of water from their bodies, so that they dehydrate, often fatally. It is used to control sucking pests, thrips, aphids, beetles, borers, caterpillars etc., and also it protects against the rotting of plant roots.


Diatomaceous earth killing spider mite


Killing of potato beetle by diatomaceous earth


Spraying of diatomaceous earth on the target pest


Diatomaceous earth killing potato beetle

BENEFITS

- It works as a physical/mechanical pesticide.
- Non -toxic
- Easily wash off with water.
- It contains vital minerals like copper, zinc, iron, phosphorous and selenium.
- Increase water holding capacity of soil and slowly release to the plants, there by preventing the plants from rotting.
- It can be used to condition the soil.
- It helps to keep way the plants from harmful insects.

Recommended crops : cereals, pulses, fruits, vegetables, plantation and orchids.

Recommended crops : 30-40 g per liter of water, mix it properly and spray uniformly on the target pest.

Storage : Keep it in cool and dry place, away from direct sunlight and heat. Keep it away from children.

Caution: Apply only to target pest/insect, it will also kill beneficial insect like honeybees, ladybird beetle if they come in contact with the powder. Avoid breathing the dust as it can irritate mucous membranes.

Made possible
Ponalab

BIO-PESTICIDE / INSECTICIDE

DIGANTH

(Whitefly control)

The whitefly is a phloem-feeding or sap- sucking economically important pest of crops world wide. They secrete sticky honeydew and cause death of leaves. In addition to direct damage, whitefly acts as a vector for plant viruses. Management of whitefly is difficult and they developed resistant against many insecticides. Hence to minimize the use of insecticides and enhance the control potential, an eco-friendly strategy has been developed by PONALAB for long-time management of whitefly and other sucking pest in agriculture and allied areas.

Whiteflies

HOST PENETRATION	→	IN-VIVO INFECTION	→	SPREAD OF BENEFICIAL NEMATODES
Invade insect body opening Escape gut micro flora		Multiply inside blood tissue Release of toxic bacteria		Multiply in to infective progeny Release in environment

Target Crops : Tomato, Brinjal, Citrus, Cotton, Sugarcane & Potato and Minor- Ornamental crops.

Mode of application : Foliar spray- Mix 250 g of DIGANTH in 150 L of water and add 0.2 to 0.4% of polymer based stickers or adjuvants or wetting agents.

Application Rate : Recommended dose (250 g/ Acre). If in case of chronic infection spray should be done three times with an incubation period of 7 days.

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BIO-NEMATICIDE

NEMAERAZER

(Bionematicide)

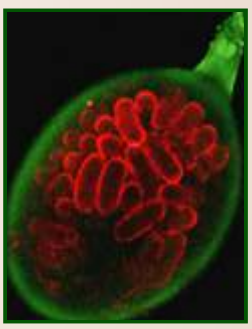
Root-knot nematodes are responsible for great losses in crop production systems across the globe. To reduce these yearly losses of plant products, we at PONALAB developed an alternative strategy using the fungus *Pochonia chlamydosporia* and paeciliomyces lilacinus to control root-knot nematodes in horticutural and agricultural crop production systems.

BENEFITS

- Parasitizes on egg & cyst of root-knot nematode
- Broad nematode host range
- Rapid action
- Safety for all vertebrates
- More effective than chemical agents
- Persist within soil
- Develop plant defense

Root knot nematode

Cyst nematode



Potato Cyst Nematode

Active Ingredients

1% WP-Formulation of *Pochonia chlamydosporia and* paeciliomyces lilacinus

Target Pest

Major- Root & Cyst nematode **Minor**-root rot diseases

Target Crops

Major-Tomato, Brinjal, Okra, Gerbera, Carnation & Pepper **Minor-** Ginger, Turmeric, Tea & Coffee

Mode of application

Broad casting& Spot application

Application rate

Recommended dose (1-2 Kg/ Acre). if In case of chronic infection (5 to 7 Kg/ Acre)NEMAERAZERBionematicide

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BIO-NEMATICIDE

SOWMYAA

(Bio-nematicide)

Paciliomyces lilacinus is a soil-borne saprophyte and a facultative parasitic fungus having greater potential for use as a biological control agent against plant-parasitic nematodes. It has broad spectrum activity against Root-knot nematode, golden cyst nematode, cyst nematode, citrus nematode, burrowing nematode, reniform nematode. *Paciliomyces lilacinus* is capable of parasitizing nematode eggs, juveniles, and females, and thus reduces the plant parasitic nematode population in the soil. This fungus destroys up to 90% of eggs and 75-80% of egg-masses or cysts.When the fungus comes in contact with the nematode, protease activity will induce by the fungus and secrete the proteases in order to penetrate the cuticle and cell wall of the target. Fungus also kills harmful nematodes by pathogenesis.

BENEFITS

- Completely prevent the hatching of the nematode eggs in the soil.
- Helps to increase productivity by controlling the nematode pests.
- Effectively controls nematodes better than the conventional chemical pesticides.
- Eliminating the use of costly and harmful chemicals.
- Eco-friendly, non-toxic to humans, animals, plants, and predators of insects.

Recommended crops : Potato, cabbage, cauliflower, pulses, carnation, gerbera, gourds, tobacco, ginger, carrot, beetroot, coffee, tea, turmeric, arecanut, groundnut, brinjal, tomato, okra, citrus, chilly, banana, pomegranate.

Roots infected by nematodes

Nematodes root

Unaffected root

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BIO-NEMATICIDE

SOWMYAA

DIRECTION TO USE

SOWMYAA Powder	SOWMYAA Liquid
Broad casting Mix 1-2 kg of SOWMYAA in 200 kg of coir pith or sand and broad cast before irrigation	**Application** Mix 1-2 L of SOWMYAA in 200 kg of coir pith or sand and broad cast before irrigation.
Spot application Mix 1-2 kg of SOWMYAA in 200 kg of coir pith or sand and apply 100 g/plant around the base of plants.	**Recommended dosage** Mix 1-2 L of SOWMYAA in 200 kg of coir pith or sand and apply 100 g/plant around the base of plants.
Foliar spray Mix 1-2 kg of SOWMYAA in 250 L of water and spray uniformly on the plant as well as soil above the base of the plant.	**Foliar spray** Mix 2 ml of SOWMYAA in 250 L of water and spray uniformly on the plant as well as soil above the base of the plant
Recommended dosage 1-2 kg / acre.	**Recommended dosage** 1 L/acre.
Composition CFU- 5×10 cell/g	**Composition** CFU- 1×10^{8} cell/ml.
Precaution Don't mix with any chemical fertilizers, fungicide and pesticide, maintain moisture in the field.	**Precaution** Don't mix with any chemical fertilizers, fungicide and pesticide, maintain moisture in the field.
Storage Store in cool place away from direct sunlight and heat	**Storage** Store in cool place away from direct sunlight and heat

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ORGANIC WASTE DECOMPOSER

KACHARASURA

Improper management of agricultural waste pollutes the environment when it is burned or disposed in of water bodies. The best solution to overcome this problem is the application of microbes. PONALAB developed a waste decomposer culture called KACHARASURA, which is used for quick composting of organic wastes such as agricultural wastes, domestic waste, animal waste, human wastes, and other wastes.

Agricultural Wastes

Domestic Wastes

Animal Wastes

KACHARASURA is a dynamic combination of microbes with a proprietary blend of enzymes which has the unique potential to decompose wastes in an effective manner within a short span of time. It is a strategically designed mixture of decomposing bacterial and fungal cultures. Consistent application changes soil physical and biological properties and improves soil health. It also protects plants from pests and pathogens.

BENEFITS

- It accelerates the decomposition process to reach a more balanced C:N ratio within 6-8weeks.
- It accelerates and sustains temperature rise in compost heaps from 60-70°C. Pathogens, pests and weed seeds are totally eliminated by this high temperature decomposition.
- It produces growth stimulants that are required for plants.
- Preserves the environment by biodegradation of waste to nutri-tive organic manure.
- Enhances the soil quality and prevents the growth of harmful bacteria.
- Rapidly remove the foul odour of decaying plant materials, thus repels mosquitoes and flies.

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ORGANIC WASTE DECOMPOSER

KACHARASURA

DIRECTION TO USE

KACHARASURA Powder

Application

Mix 1-2 kg of KACHARASURA in 10 L of water and add 250 g of jaggery and keep it for overnight. Apply this mixture to the waste heap. To achieve proper aeration, mix substrate regularly at an interval of 7-10days

Recommended dosage

1-2 kg / 1000 kg of waste material

Composition

CFU- 5×10 cell/g

Precaution

Avoid contact of contents of the bottle with body parts. Don't use chemical fertilizer or pesticide while mixing the content

Storage

Store in cool place, away from direct sunlight and heat.

KACHARASURA Liquid

Application

Mix 1-2 L of KACHARASURA in 10 L of water and add 250 g of jaggery and keep it for overnight. Apply this mixture to the waste heap. To achieve proper aera-tion, mix substrate regularly at an interval of 7-10days

Recommended dosage

1-2 L /1000 kg of waste material

Composition

CFU- 1×10^{8} cell/ml

Precaution

Avoid contact of contents of the bottle with body parts. Don't use chemical fertilizer or pesticide while mixing the content

Storage

Store in cool place, away from direct sunlight and heat.

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PLANT GROWTH PROMOTERS / STIMULATORS

BHUMIRAS 22

Bhumiras22 is an eco-friendly product designed to meet the needs associated with a sustainable environment. It is a natural humic compound extracted from the peat through an alkaline process. Natural organic humus is formed through the biological breakdown or decomposition of dead plant and animal life over millions of years. The thick brown or black substance that remains after most of the organic litter has decomposed is humus.

BHUMIRAS22 contains many useful nutrients for healthy soil, one of the most important being nitrogen, which is a key nutrient for plants.

BENEFITS

It stimulates root development in plants and also helps to retain water through stronger soil structure.

It enhances the growth of soil microorganisms, this helps to improve the soil structure, balance pH levels, and protect crops against harmful toxins and metals.

Essentially increases plant immunity to pest and diseases and also extreme climatic conditions.

It contributes to their faster and more efficient absorption of nutrients by the plant. It improves the taste of fruits and vegetables, increases yield and improve quality.

Recommended crops : BHUMIRAS 22 can be used for all kinds of crops.

Mode of Application : Foliar spray: Mix 200ml of BHUMIRAS 22 in 200-400L of water thoroughly & spray all over the plant during early morning or late evening.

Drenching : Mix 3-5ml of BHUMIRAS22 in 1L of water thoroughly and drench around the plant accordingly.

Seed treatment : Mix 3-5ml of BHUMIRAS22 per kg of seeds. Shade dry and sow within in 1-2 hours.Apply 3-5 times of BHUMIRAS22 for best result.

Dosage : 200ml/ acre. **Composition :** Humic acid 12%

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PLANT GROWTH PROMOTERS / STIMULATORS

JEEVA

JEEVA is an organic compound consisting of multiple elements which can be applied for their beneficial impact on the growth and cultivation of crops. It makes an important contribution to soil fertility and stability leading to exceptional plant growth and development and also improves nutrient retention capacity in soil. JEEVA is widely used by the farmers for several benefits including supporting the demands of plants. This can be used directly on the plant foliage as well as to the soil or in the form of fertilizer mix. Use of JEEVA will majorly contribute to the betterment of soils physical and chemical properties.

BENEFITS

- Stimulate seed germination and viability, root respiration, formation and growth.
- Increase photosynthesis rate in leaf.
- Increase nutrient uptake.
- Increase vegetative plant growth and improvement.
- Increase water holding capacity of soil helping plants to resist environmental stress.
- Increase aeration of the soil.
- Stimulate microbial growth in soil.
- Helps to retain water soluble inorganic fertilizers in soils releasing them as needed by the plants to make soil more fertile and productive.

Recommended crops : Cereals, pulses, vegetables, fruits, oilseed plantation and ornamental crop.

Dosage : 2-3 kg/acre

Mode of application: Soil application: Apply 2-3 kgs of JEEVA in one acre of land with chemical fertilizer like urea, DAP through drip irrigation or broadcasting.

Composition : Humic acid-8%, amino acid-5%, seaweed extract-1% and organic matter-20%
Storage: Store in cool and dry place. Keep out of reach of children.Note: Do not swallow or inhale.

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PLANT GROWTH PROMOTERS / STIMULATORS

POMUS17

POMUS 17 is an exclusive eco-friendly product developed under the latest biotechnology research at PONALAB. It is a powerful combination of humic acid, fulvic acid, amino acid and seaweed extract for healthy root and shoot development and also organic input for nutrient management.

BENEFITS

- It stimulates overall growth and induce more flowering.
- It provide valuable source of carbon to soil micro-organisms.
- Stimulates enzymatic reaction in plants to increase respiration.
- It induces healthy growth of the plant and helps to fight against various stresses.
- It offers good seed germination and synthesis of chlorophyll.
- Improve uptake and translocation of micro and macro nutrients.
- Resulting in higher yield and better quality of the crop.
- Non-toxic and safe to use.

Recommended crops : sugarcane, cereals, pulses, oilseeds, fibre crops, fruits, vegetables, flowers, plantation, medicinal and cash crops.

Dosage : 2-4ml/L of water or 1 L/acre in 100 liters of water by drip or foliar spray.

Composition : Humic acid-6%, amino acid-4%, seaweed extract-2% and fulvic acid-2%

Storage : Store in cool and dry place. Keep out of reach of children.

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PLANT GROWTH PROMOTERS / STIMULATORS

TANMAYI

TANMAYI is a soil conditioner and natural source of micronutrients, macronutrients, secondary nutrients and plant growth hormones which help to increase the intake of dissolved nutrients. This enrich the agricultural land and make the soil fertile and improve the immune system of the plants.

It is a non-polluting, renewable bio-fertilizer that contains essential growth hormones like cytokinin, gibberelins, and auxins in plants. These hormones control phototropism and plant cell elongation, which in turn facilitates uniform plant growth.

Adding TANMAYI to the soil enriches the capacity to fix atmospheric nitrogen and making it easily available to the plants and promoting soil fertility. There by Increasing the fruit, flower and vegetable yield while also increasing their shelf life.

BENEFITS

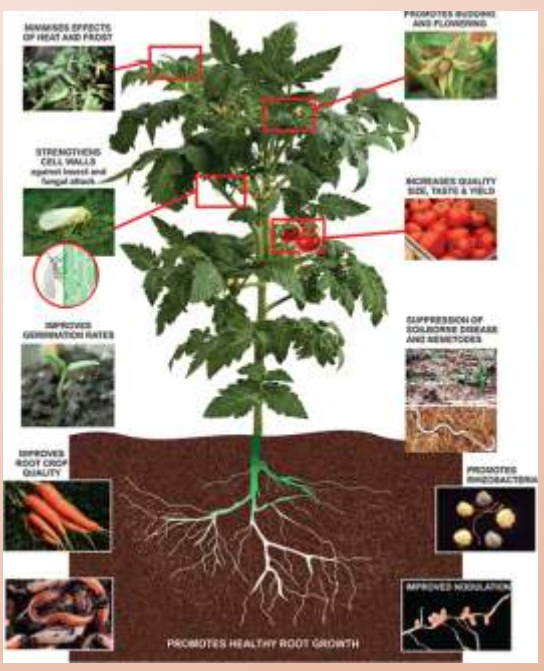
- Improves seed germination and root development.
- It provides vigorous growth and boost immunity against bacteria, fungus and pests.
- Improve photosynthesis & protein synthesis.
- Better nutrient circulation in plants.
- Increase immunity against diseases.

Recommended crops : vegetables, flower gardens, orchards, turf grass, fruits, hydroponics, green house crops etc.

Dosage and mode of application :

Add 2-3 ml of seaweed liquid extract to 1 L of water and mix well. Spray this to the plants using sprayer.
It is recommended to spray on plants before sunrise or after sunset to avoid burning leaves.

Storage : keep it in a cool and dry place. Keep it away from children.



Benefits of application of TANMAYI

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PLANT GROWTH PROMOTERS / STIMULATORS

RAHEEL

RAHEEL is an eco-friendly product developed under latest biotechnology research at PONALAB. It is a powerful combination of humic acid, fulvic acid, amino acid and seaweed extract for healthy root and shoot development and also organic input for nutrient management.

BENEFITS

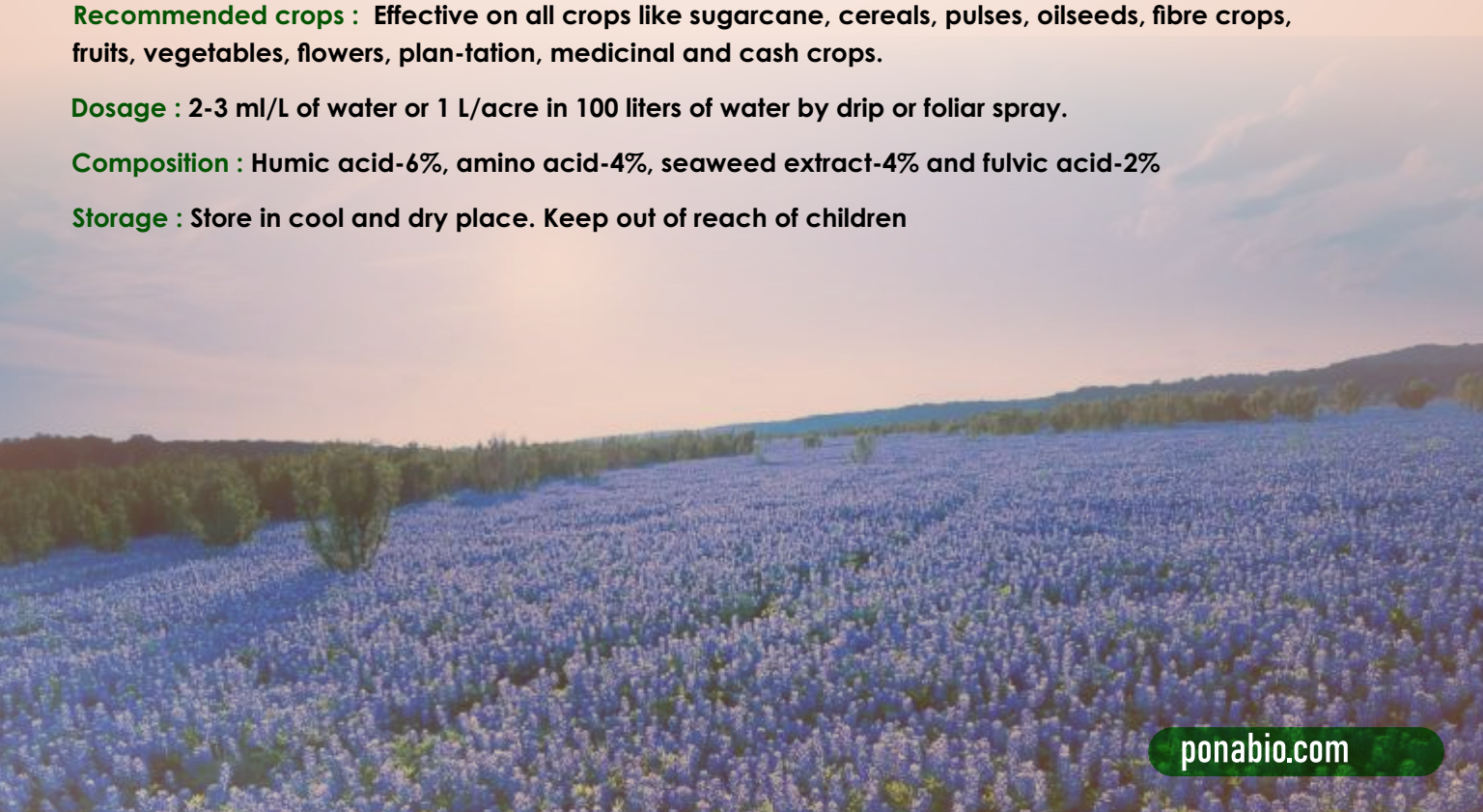
- It stimulates overall growth and induce more flowering.
- It provide valuable source of carbon to soil microorganisms.
- Stimulates enzymatic reaction in plants to increase respiration.
- Improve soil structure enhances seed germination and growth.
- It induces healthy growth of the plant and helps to fight against various stresses.
- It offers good seed germination and synthesis of chlorophyll.
- Improve uptake and translocation of micro and macronutrients.
- Resulting in higher yield and better quality of the crop.
- Non-toxic and safe to use.

Recommended crops : Effective on all crops like sugarcane, cereals, pulses, oilseeds, fibre crops, fruits, vegetables, flowers, plan-tation, medicinal and cash crops.

Dosage : 2-3 ml/L of water or 1 L/acre in 100 liters of water by drip or foliar spray.

Composition : Humic acid-6%, amino acid-4%, seaweed extract-4% and fulvic acid-2%

Storage : Store in cool and dry place. Keep out of reach of children



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PLANT GROWTH PROMOTERS / STIMULATORS

PONA BOOSTER

PONA BOOSTER is an organic fertilizer that is soluble in water. It contains potassium humate which increases the available potassium in soil and reduce the loss of potassium fertilizer in the soil by increasing the absorption and utilization of potassium by the plants. PONA BOOSTER actually acts as a fertilizer additive to increase the efficiency of applied fertilizers especially nitrogen and phosphorous based fertilizer, and stimulates plant growth.

BENEFITS

- Improve the soil structure and balance the soil pH.
- Increase water holding capacity and fertilizer use efficiency.
- Enhance the growth of beneficial microorganisms in the soil and increase the resistance of plants against biotic and abiotic stress.
- Prevent soil from toxic contaminants like heavy metals and pesticide residue.
- Enhance seed germination and promote root and plant growth.
- Increase yield and quality of the produce.

Recommended crops : cereals, pulses, oilseed crops, plantation, fruits and vegetables, ornamental and medicinal crops.

Recommended dosage:

Soil application : Mix 250-500 g of PONA BOOSTER with organic manure or chemical fertilizer and apply for one acre

Foliar spray : 150-200g /acre

Drip irrigation : 200-500g /acre

Composition : Potassium humate-98.0 % w/v and inert matter- 2.0 % w/w

Storage : Store in cool and dry place and keep away from direct sunlight. Keep a way from children.

Improve seed germination

Stimulate root growth

Improve soil structure

Increase yield and quality

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Ponalab

SPREADER

CHIPKOOY 12

CHIPKOOY12 is a superior wetting agent, developed to improve the wetting, spreading and penetration of chemicals by lowering its surface tension. Reduction in surface tension to a very low level, resulting in a very rapid wetting cum spreading on leaves. When incorporated in formulations, near complete coverage of leaf is achieved in less time. The product facilitates uptake of chemicals in to plant tissue.

CHIPKOOY12 is a specially formulated versatile product possessing a low molecular weight non- ionic surfactant that helps to enhance the performance of agricultural products such as herbicides, insecticides, fungicides, water soluble fertilizers and plant growth regulators that are water soluble. Since the CHIPKOOY12 is highly concentrated and therefore well suited for all kinds of spray application.

BENEFITS

- Easy dispersion in aqueous system.
- Greatly increase the uptake of chemicals in to the plant tissue.
- Wider coverage & better control can be achieved with low use rates reducing formulation volume.
- Exhibit superior “Rain fastness”.
- Has excellent quality and storage stability.
- Easy to use and cost effective, Chemically inert and non-toxic.

Recommended crops : It can be used for all the crops.

Recommended dose : 100ml/acre.

Mode of application : Mix 1ml of CHIPKOOY12 in 1liter of water and use for spraying and in case of drip irrigation or drenching use 100ml/acre in 100-200 L of water.

Precaution :

Spraying should be done either in the early morning or late evening.

 # Avoid direct contact with eyes and mouth.

 # Wash hands after use and keep away from children.

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INSECT CONTROLLER

PHEROMONE TRAPS AND LURES

Funnel trap is a type of trap used to collect a wide range of insect pest. Funnel trap usually contains a pheromone lure in which the lure is suspended in the middle of the trap. These traps are used for monitoring and also for controlling insect population by the mass trapping technique.

How it works: Pheromones are chemicals used by insect to communicate with each other. Insects send these chemical signals to attract males for mate. So pheromones are released from the lure placed inside the trap and attract the opposite sex of the same insect species.

BENEFITS

- It is an eco-friendly product.
- Reduce health risk associated with chemicals.
- Reduced use of chemical pesticides, hence reduce the cost of production.
- Target insect pests get controlled.
- An Increase in the yield and quality of the product can be achieved.

How to use : The funnel trap and lures should be placed in the field at equal distance. The pheromone will get released from the lures in required amount on regular basis and attracts the target insects and killed inside the trap. The dead insect must be collected and disposed on regular basis for better results.

Recommended units : 12-15 traps per acre can be placed for significant result which will last for more than 20-25 days.

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INSECT CONTROLLER

PHEROMONE TRAPS AND LURES

Available pheromone lures at ponalab are :

Pheromone lures	Target insect pest
Ponaverpac	*Helicoverpa armigera* (cotton boll worm)
Pona litura	*Spodoptera litura* (cut worm in tobacco)
Pona lutella	*Plutella xylostella* (diamond back moth in crusiferous vegetables)
Pona pink lure	*Pectinophora gossypiella* (Pink boll worm in cotton)
Catch tuta 9	*Tuta absoluta* (tomato leaf minor)

Helicoverpa Armigera (cotton boll worm)

Plutella xylostella
(diamond back moth)

Spodoptera litura (cut worm)

Pectinophora gossypiella
(Pink boll worm)

Tuta absoluta
(Tomato leaf minor)

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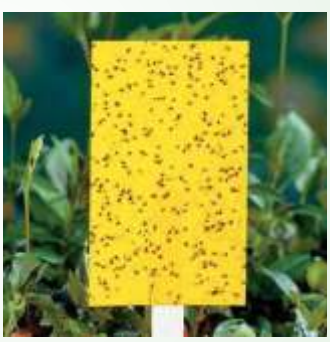
INSECT CONTROLLER

YELLOW STICKY TRAP

What is yellow sticky trap and how it works?

Yellow sticky trap is just a bright yellow color board with glue/gum on it. It is commonly used to control the population of some insect pest as insects/pest as they get attracted to it. Once it gets closer, it gets stuck to the gum on the surface of the paper and eventually dies.

Yellow sticky trap



Insects are stucked in yellow sticky trap

BENEFITS

- It is an eco-friendly product.
- Reduce health risk associated with chemicals.
- Reduced use of chemical pesticides, hence reduce the cost of production.
- Variety of insect pests get controlled.
- Increase in the yield and quality of the product can be achieved.

How to use : The yellow sticky traps to be placed in the field in equidistance based on recommendations.

Recommended crops : It can be used for cereals pulses, oilseeds, fruits, vegetables, plantation crops. It can also be used in green house or playhouses.

Target pest : Aphids, whitefly, leaf hopper, leaf miner, jassids and other sucking pest.

Recommended units : 12-15 units of yellow sticky traps can be placed in one acre area. This is significantly control the population of insect pest.

Whiteflies

Leaf hoppers

Leaf miner

Jassids

Aphids

ANIMAL NUTRITION

ABOUT PONALAB

Ponalab is a dynamic manufacturer and marketer of comprehensive agricultural solutions for sustainable organic farming with solutions spanning plant and animal products for farmers across the globe.

Beginning as a manufactures of bio-fertilizer and bio-pesticides in 2006, Ponalab made a strategic venture alongside the agro products that focused purely on animal feed products and enzymes for poultry, swine and cattle.

Our investments in research and development, as well as quality standards, all stand testimony to our commitment towards ensuring sustainable organic farming. Our promise of value includes

- A no compromise approach to quality assurance.
- Research and development investments to optimize cost to quality.
- Focus on brand and image building as a means to long-term profitability.
- Cleanroom facilities & ISO 9001:2008 certified manufacturing facilities.
- GMP (ICH 1999) compliant manufacturing facility with schedule M license.

Made possible
Ponalab

ANIMAL NUTRITION

PONT 60

It is the mission of PONALAB to conduct basic and applied research on selected diseases of economic importance to the livestock and poultry industries. The goals of the research mission are to produce knowledge and technology to reduce economic losses from infectious, genetic, and metabolic diseases to the livestock and poultry industries and the associated rural agricultural community, to reduce or eliminate pre-harvest contamination or infection of livestock and poultry with food-borne human pathogens, and to prevent suffering and death caused by diseases in agriculturally important livestock and poultry.

Our important constraint limiting livestock and poultry industries in developing nations worldwide, and especially among resource-poor farmers, is Enterobacteriaceae infection in livestock and poultry. Therefore, maintaining with chlorinated derivative of 8-hydroxy quinoline 5-monochloro-8-hydroxyquinoline, 7-monochloro-8- hydroxyquinoline, as a vertinary feed supplement/ additive we can reduce the problems of bacterial infections in Necrotic enteritis, protozovan diseases caused by *Eimeria spp., Babesia bigemina* and *Theileria annulata* and fungal diseases like *Aspergillosis Candidiasis, Coccidioidomycosis.*

DISCRIPTION	HALQUINOL B.P 80	PONT 60
Indegrediants	It is a triple acting non antibiotic antimicrobial compound. The livestock doesnot get resistance to the same if used continuously.	It is a triple acting non antibiotic antimicrobial compound.
Usage Treatment Benefits	Each I Kg contains 98% of active ingredient is obtained by the controlled chlorination of three components 5,7-dichloro, 5-monochloro and 7-monochloro with its core ingredient 8-hydroxyquinoline.	Each IKg contains 60% of active ingredient is obtained by the controlled chlorination of three components 5,7-dichloro, 5-monochloro and 7-monochloro with its core ingredient 8-hydroxyquinoline.
Store	Growth promotion: 250 g/ ton of feed.	Growth promotion: 50 g- 100 g / ton of feed. 200 g / ton of feed for 5-7 days.

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ANIMAL NUTRITION

RUSHALI

A question : Why raise livestock?

Whether it is to provide for ourselves, or as a profession, why do we do it? At Ponalab, we believe that the reason for raising livestock is the real requirement. Good dairy and poultry products, good, healthy meat, as draft animals where used, and of course, the joy of having the animals around. All these requirements translate into just one but singularly important characteristic that each of these animals must possess. Health...and each of Ponalab's livestock solutions are aimed primarily at addressing this need.

Rushali, meaning beautiful, elegant and in essence, a sight for sore eyes, is also the effect this feed supplement has on your livestock.

What it is…

It is an eclectic mix of plant extracts, probiotics, and a healthy dose of fermented prebiotics that enhance the animal's digestion and assimilation of nutrients.

Plant Extracts

Well, one of the most significant aspects of a herbivore is the fact that it digests a lot of nitrogenous material and a real whole lot of proteins. One equally significant aspect of having livestock around is the fact that they discharge everything from Methane to Ammonia. And we haven't begun mentioning how much of this excess nitrogen ends up in their milk. The use of plant extracts concentrates the quantity of astringents in their digestive system, precipitating the alkaloids and amino acids thereby reducing the pollutants in the animals' discharges. Tannin is just one such additive that we use to help animals digest food better and also alleviate them from the stress of intestinal gas and flatulence. A cosmetic but economically significant side effect to using plant extracts is the fact that the animals and their enclosures don't smell so bad, reducing the overall maintenance costs of your livestock infrastructure.

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RUSHALI

Key benefits include :

- Pro-biotics Provides all the necessary nutrition Enhances natural immunity
- Improves resistance to stress and parasites
- Improves production of lipid proteins and amino acids
- Enhances milk production and improves digestion
- Improves longevity as well as fertility as a result of good health.

Pro-biotics

OK – We all know what probiotics are...microbes that have a positive effect when with in the digestive system of the human, or animal for that matter. Considering they're the animals and you the master, shouldn't their well being be your responsibility? This is where Ponalab's Animal Feed Solutions come in handy. With a generous dose of probiotics that help in promoting digestion, weight gain, resistance to common diseases and parasites. At Ponalab, we would like your livestock to not just be happy, but also make you wealthy. And to us, the easiest way to make you wealthy is to keep your livestock healthy. That's why our formulations combine the benets and efficiencies of Plant extracts, Probiotics and Prebiotics in the right proportions.

Composition :

Bidobacterium bidum , Bidobacterium longum , Lactobacillus sporogenus, Bacillus subtilis, Saccharomyces boulardii

Dosage :

Poultry (broiler and layer) - 20 days a month Quantity: 1ml/litre

Goat/Swine: 10 days a month, 20 ml per day

Cattle: 20 days a month, 20 ml per day.

Fish: 2 out of every 3 days, 1 L /acre aqua-farm.

Should you have any questions, please feel free to write in,
call our numbers or visit us. It would be our pleasure and pride to help you .

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ANIMAL NUTRITION

VINACID

(An ideal water acidifier)

Nature has designed crops to store whole bugs and seeds and not the finely ground, easily digested feed normally used in the poultry industry. So when crop is full of feed and low quality of water is added, it favours the growth of harmful bacteria and mold which will impair the digestive system of poultry. A pH range of 6.5 to 8.0 is favourable for the growth and multiplication of pathogenic micro- organisms. Lowering the pH through water acidification early in the flock and prior to processing helps mitigate the potential food-safety risk of pathogenic bacteria such as *Ecoli, Salmonella, Clostridium and Campylobacter.* Organic water acidification is the solutions to maintain the health and growth of piglets without antibiotic use.

Using VINACID as an acidifier in the drinking system along with proper cleaning will help the birds and piglets develop commensal in the gut which improves gut health, feed absorption of nutrients leading to better body weight and reduction in FCR.

VINACID is a blue coloured liquid water acidifier for poultry and swine. It comprises of buffered organic acids blended with unique anti-bacterial essential oils.

BENEFITS

- Promotes the digestive process and enhances nutrient absorption.
- Improves body weight and reduce F.C.R.
- Helps to reduce the incidences of salmonellosis, collibacillosis spread through water.
- Helps to lower microbial load in water.

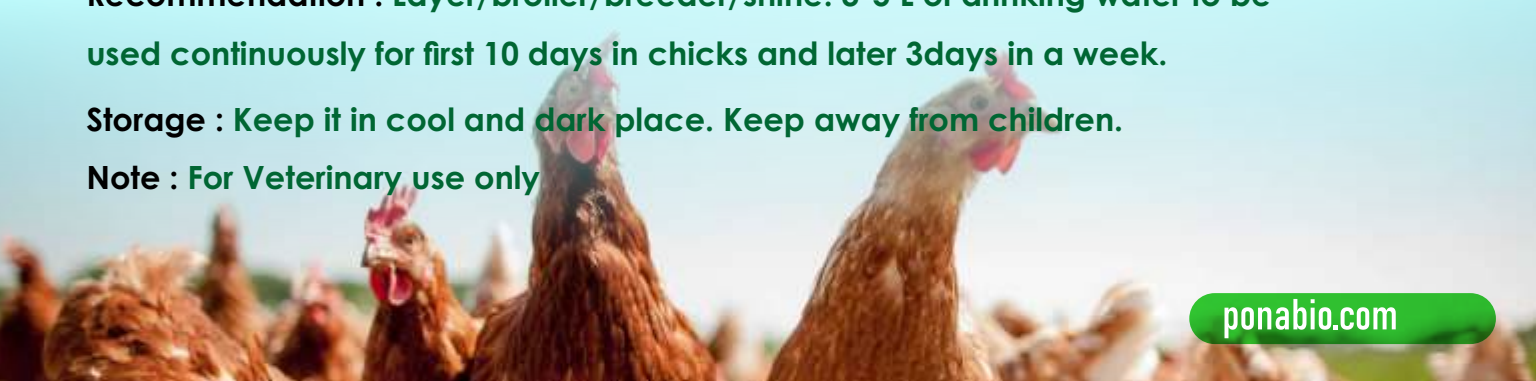
Composition of VINACID:

Buffered organic acid, lactic acid, formic acid, citric acid, phosphoric acid with essential oils.

Recommendation : Layer/broiler/breeder/shine: 3-5 L of drinking water to be used continuously for first 10 days in chicks and later 3days in a week.

Storage : Keep it in cool and dark place. Keep away from children.

Note : For Veterinary use only



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ANIMAL NUTRITION

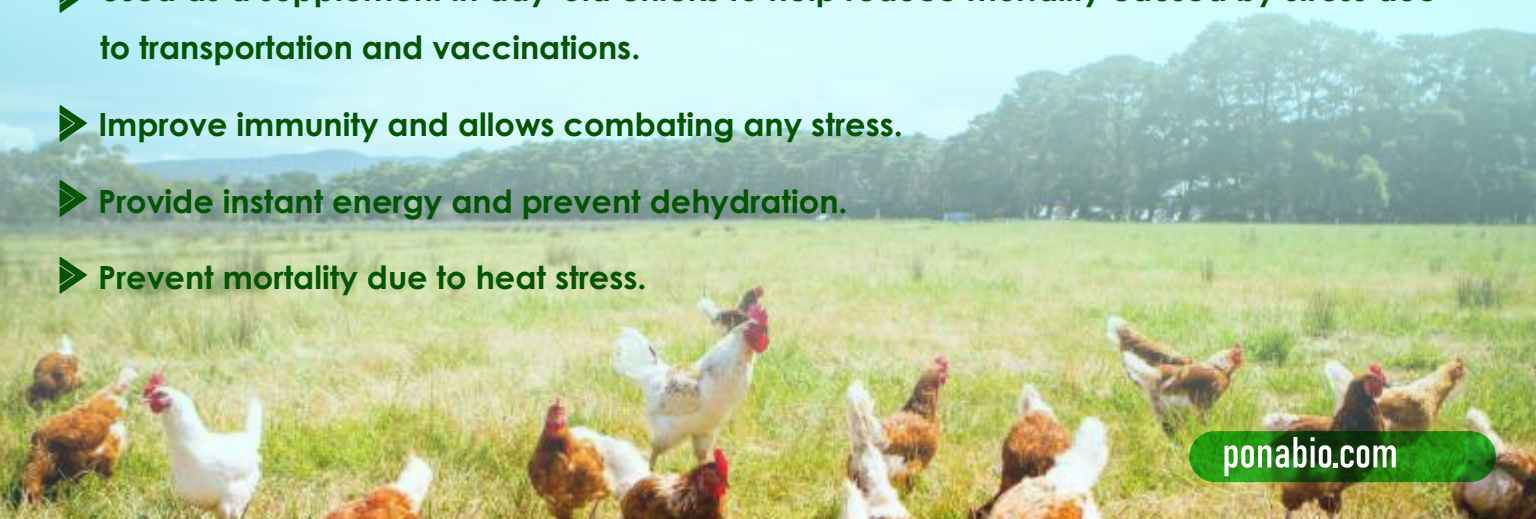
VINOLITE

Dietary Electrolyte Balance (DEB) is major concern in the poultry industry. Minerals play an important role in biological functions in poultry. They play an important part in enzyme systems regulating cellular functions, osmotic balance, acid-base balance and detoxification systems. Water transports nutrients, gasses, waste products and hormones in the birds in addition to balancing acids and alkali and also to dissipating heat produced due to digestion and heat stress. Key electrolytes like sodium bicarbonate and chloride found in the fluid between cells, potassium, phosphate, magnesium, sodium, calcium, and bicarbonates found within the cells have high electrolytic activity at the body temperature of poultry.

But poultry suffers at temperature above 25°C Where heat stress is evident. This can be seen via open mouth breathing and panting resulting in progressive loss of CO_2 giving rise to a condition of alkalosis resulting in disturbance of acid-base balance hampering DEB. The

BENEFITS

- Suggested to be used as an additive in water as feed for reducing heat/humidity induced stress.
- Useful electrolyte source during outbreak of diseases especially affecting the gut.
- Used as a supplement in day-old chicks to help reduce mortality caused by stress due to transportation and vaccinations.
- Improve immunity and allows combating any stress.
- Provide instant energy and prevent dehydration.
- Prevent mortality due to heat stress.



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ANIMAL NUTRITION

VINOLITE

Composition : Each 100gm of VINOLITE contains

Calcium lactate	2.0 g
Potassium chloride	5.5 g
Sodium chloride	0.9 g
Sodium bicarbonate	3.0 g
Sodium acid phosphate	0.7 g
Sodium citrate	6.6 g
Magnesium sulphate	0.9 g
Ascorbic acid (coated)	1.8 g
Lactobacillus viable spores	3000 × 10^8 CFU
Dextrose anhydrous Q. S	

Enhanced with Vitamins and Reservet, fortified with ASA

Drinking water: 1 g in 2 L of water.

Feed: 1 kg/ton of feed.

Storage : Keep it in cool and dark place

Note : Animal feed supplement not for human use

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ANIMAL NUTRITION

VINOMET

(A liquid non-antibiotic growth promoter)

Antibiotic growth promoters are frequently being used to enhance weight gain in poultry production. This leads to the emergence of antibiotic resistance bacterial pathogens in the microbial community of the poultry gut.

Withdrawing sub-therapeutic use of antibiotics in conventional and organic poultry production system may help to mitigate the emergence of antibiotic resistance pathogens. However, reduced growth rates in animals that are observed in the absence of antibiotic growth promoters will impact the efficiency of production and perhaps jeopardize food security. These emerging issues for both conventional and organic poultry production highlight the need for alternative approaches to improve feed efficiency in the absence of antibiotic supplements.

VINOMET is one such product, a non-antibiotic growth promoter for poultry. Chemically the product is a combination of amino acids and chelated minerals, which optimize the nutritional value of other feed proteins, maximizes the production yield and minimizes the quality variation in the flocks.

Feeding of high-quality of vitamins and minerals to poultry decreases the mortality rate, and increases the breast, thigh and body weight. It helps in better FCR, improves immune response, results in longer production life, enhances hatch rates, improves egg shell quality and lowers egg shell cracks.

Feeding VINOMET to poultry increases the profitability in broiler rearing, increase egg production in layers, and yield of quality chicks in breeder farms.

VINOMET is a special supplement for layers, breeders, poultry, and broiler coupled with a highly stable molecule of reservet. It makes for an ideal growth promoter with great benefits.

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ANIMAL NUTRITION

VINOMET

BENEFITS

- Promotes growth and uniform body development in broilers.
- Supplements the essential amino acids.
- Builds better heat/ stress resistance in birds.
- Reduce mineral deficiency.
- Aids the birds to overcome leg weakness.
- Improves egg production in layers.
- Decrease occurrence of irregular and misshapen eggs during peak lay and early lay.

Composition: Each 500 ml of VINOMET contains

Chlorine chloride	64.0g
Lysine	64.0g
Methionine	128.5g
Phosphorous	155.2mg
Magnesium	595.5mg
Sodium	460.0mg
Zinc	217.0mg
Iron	224.3mg
Copper	157.4mg
Cobalt	207.5mg
Manganese	383.1mg

Enhanced with Vitamins and Reservet,

Recommendation :

Broiler: 1ml per L of drinking water

Layer: 1ml in 2 L of drinking water

Breeder: 1ml in 2 L of drinking water

Storage : Store at room temperature and keep away from children.

Note : For veterinary use only.

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ANIMAL NUTRITION

TOX BINDER

(Management and control of mycotoxins)

Livestock enterprises faces losses is due to the contamination of animal feed ingredients and compounded feeds by moulds and their toxic metabolites known as mycotoxins. Some of the primary toxigenic moulds (*Fusarium* spp. *Aspergillus* spp, Penicillium spp.) and mycotoxins (Aflatoxins, Ochratoxin- A, Trichothecenes, Fumonisins, Mycophenolic acid).

Mycotoxins are very stable and resistant to different storage and processing conditions.. Ingestion of feed contaminated with mycotoxin induce loss in productivity and immunity, damages to the liver, kidney, reproductive system. Hence, mycotoxins need to be eliminated in the poultry feed as they pose a substantial health hazard in birds.

Livestock feed toxin binders are a great way to reduce mycotoxicosis and improve livestock health and productivity. Toxin binders added to poultry feed provide an excellent source of nutrients and health security.

TOX BINDER is a substance that is added to poultry feed in small quantity in order to trap mycotoxins that enter the blood stream, where they can cause serious harm to the birds. The binder decontaminates mycotoxins in the feed by binding them strongly enough to prevent toxic interactions with the consuming bird and to prevent mycotoxin absorption across the digestive tract. It is considered as the most promising dietary approach to reduce effects of toxins.

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ANIMAL NUTRITION

TOX BINDER

(Management and control of mycotoxins)

BENEFITS

- Prevention of stress on the liver and improvise its function.
- Lower pH of the gut as well as feed.
- Used in high moisture feed to avoid subclinical and chronic form of aflatoxicosis.
- Aid in reduction of incidence of bacterial contamination of feed and alleviates effects of multiple mycotoxicosis

Composition of TOX BINDER

1. Buffered organic acids
2. Activated charcoal
3. Mannan oligo-saccharide
4. HSCAS (specially treated)
5. Lipotropic agents and

Enhanced with multi use essential oils.

Recommendation : 1 kg per tonne of feed

Storage : Keep it in cool and dry place , protect from direct sunlight.

Note : Use for only poultry feed as a supplement, not for any medicinal use.

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ANIMAL NUTRITION

JUMBLE

(mineral mixture for poultry and cattle)

Micronutrients play a key role for metabolic activities and enhancing the immunity power of animals and birds. Each element of micronutrients plays a major role in the the physiological functions of animal and birds. Usually, this is also the primary cause for the apparent symptoms of clinical deficiency.

There are a variety of reasons why nutrition is important. Animals and birds need proper nutrition to provide energy for work and vital functions such as performance, growth, fertility, and immunity. Adequate nutrition helps animal to reproduce, maintain body temperature, and develop proper bone structures.

Animals and birds can develop health problems without proper nutrition, which may result in fatality, Thus, a good nutrition is important for all of the systems of an animal and birds to properly work and function together.

JUMBLE has all the essential micro nutrients required for the animal.

BENEFITS

- Helps to overcome vitamins and mineral deficiency.
- Helps in improving growth rate in birds and animals.
- Better utilization of absorbed nutrients.
- Increase growth and milk production.
- Improves reproduction and inter-calving period.
- Increase productivity life of animals.
- Improve fertility in male & female breeders.
- It helps in increasing weight of animals and birds.
- Improves muscle growth.
- Improve immunity.
- Helps in strong bone formation.
- Improve milk quality, fat and SNF in animals.

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ANIMAL NUTRITION

JUMBLE

Composition of Jumble

Vitamin A	Magnesium
Vitamin D3	Potassium
Vitamin E	Sodium
Nicotinamide	Manganese
Cobalt	Sulphur
Copper	Zinc
Iodine	Calcium
Iron	Phosphorous
Selenium	Bioactive chromium
Trisodium citrate	

Recommended dosage :

For cattle: For large animals : 30-50 g daily. Small animal: 15-25 g daily.

For poultry : Mix 1 kg of jumble in 1000 kg of poultry feed.

Note : Cattle and poultry feed supplement are not for human for medicinal use.

Storage : Store in cool and dark place. Protect from direct sunlight.

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ANIMAL NUTRITION

HALQUINOL

(Happy and healthy livestock with HALQUINOL)

What is, and why Halquinol?

Halquinol is one of the best, If not arguably the best broad bases antimicrobial that has a proven effect on bacteria and fungi that infect most livestock. Halquinol is produced by the controlled chlorination reaction which contains 5-monochloro-8-hydroxy quinolone, 5, 7-dichloro-8-hydroxyquinoline & 7-monochloro-8-hydroxy quinolone. This antimicrobial has been effectively used to treat bacterial, fungal and protozoan infections in swine, poultry, dairy, aquatic and equine livestock.

The long name of ingredients aside, halquinol can prevent the culling of your livestock due to gram positive and gram negative bacteria, as well as some of the most deadly Salmonella that tend to affect the meat if they are present in the intestines, while sparing the probiotics that exist within the alimentary canal of animals.

Halquinol also promotes better digestion and acts as an anti-diarrheal. Furthermore, it causes a reduction in intestinal motility thereby improving digestion and assimilation of nutrients in livestock.

How it works ?

The efficiency of halquinol is in its mechanism, where it destroy the ability of the target cells to respire, and is thus always able to completely eliminates the infection. The mode of action is not unlike how cyanide or carbon monoxide is poisonous to humans, while being completely harmless to animals and humans.

The secondary effect of reduction in intestinal motility further enhances the efficacy of halquinol giving it ample time to remove all traces of infections.

Spectrum of effect :

Halquinol is typically administered at the rate of 600mg per kilogram or 8.6 oz per lb. The treatment is usually spread over 5 to 7 days but it is imperative that the prescription is by a veterinary practitioner.

As a drug, it has a shelf life of up to 5years, when stored away from excessive heat, moisture and direct sunlight.

Bacteria	Fungi	Protozoa
Escherichia coli	*Aspergillus spp.*	*Entamoeba histolytica*
Salmonella pullorum	*Candida albicans*	*Eimeria bovis*
Salmonella enteritidis	*Epidermophyton floccosum*	*Eimeria spp.*
Salmonella typhimurium	*Trichomonas mentagrophytes*	*Eimeria spp.*
Proteus vulgaris	*Microsporium audouinii*	
Staphylococcus spp.		
Clostridium perfringens