

Si Sol B[®]
Silica solubilizing Bacillus spp
BioFertilizer

Introducing Si Sol B[™]

Silica unlike other essential elements in plants has a function that is mechanical rather than physiological. This characteristic of Silica function explains why Si effects are easily observed in plants that accumulate Silica to a certain extent and why Si effects are more obvious under biotic or abiotic stress.

Silicates make plant cell walls thicker and stronger while increasing the size of the vascular system of the plant.

Thicker cell wall makes plant stronger in all aspect. Enlarged vascular system aids in the plant taking up more water and nutrients resulting in a bigger, healthier, higher yielding plant.

Si Sol B[™] is a biological fertilizer based on a selected strain of naturally-occurring beneficial bacteria of the *Bacillus genus* isolated from a granite quarry. Si Sol B[™] is used as an effective soil inoculant. It solubilizes silica and provides the plant with strength to tolerate biotic and abiotic stresses and improves its resistance to pest and disease attack.

Si Sol B[®] contains spores of the *Bacillus spp.*. It is formulated as Wettable Powder with CFU count of 1×10^8 / g.

With the changes occurring in the global environment, the role of Silica will become more and more important for better and sustainable production of crop

Mode of Action

Metabolite production: Si SOL B[™] containing the microbe produces organic acids as part of its metabolism that has a dual role in silicate weathering.

They supply H⁺ ions to the medium and promote hydrolysis and the organic acids like citric acid, oxalic acid, keto acids and hydroxy carboic acids which form complexes with cations and make the silica available to the plant in an assimilable form.

Method of Application

Seed Treatment: Mix 10 g. of Si Sol B™ with 10 g. of crude sugar in sufficient water to make a slurry and coat 1 kg of seeds. Dry the seeds in shade and sow / broadcast / dibble in the field.

Seedling treatment: Mix 100 g. of Si Sol B™ with sufficient quantity of water and organic manure to form a slurry. The seedlings are dipped in this slurry for 30 minutes prior to planting so that the bacteria get attached to the roots.

Soil application: Mix 3-5 Kg/ acre of Si Sol B™ with compost and apply to an acre of soil.

Drip Irrigation : Mix 3 Kg/ acre of Si Sol B™ in drip stream.

Target Nutrition

Silica mobilization.

Crops

Si Sol B™ is suitable for application on Cereals , Millets , Pulses, Oilseeds, Fibre Crops , Sugar Crops , Forage Crops , Plantation crops ,Vegetables, Fruits, Spices , Flowers , Medicinal crops , Aromatic Crops , Orchards and Ornamentals.

Compatibility

Si Sol B™ is compatible with BioPesticides and other BioFertilizers.

Shelf Life

Si Sol B™ is stable for a period of 1 year from the date of manufacturing.

Mass Composition

CONSTITUENT	WW %	FUNCTION
<i>Bacillus spp</i>	2.0%	Active
Carrier Powder – Talc/Dextrose/Lignite	q.s.	Inactive

BIOLOGICAL COMPOSITION

CONSTITUENT	CFU/g.	FORMULATION
<i>Bacillus spp</i>	1*10 ⁸	Powder

OTHER FORMULATIONS AVAILABLE

<i>Frateuria aurantia</i> CFU/ml	1*10 ⁸	Liquid
<i>Frateuria aurantia</i> CFU/g/ml	1*10 ⁹	Powder/ Liquid
<i>Frateuria aurantia</i> CFU/g	1*10 ¹⁰	Powder
<i>Frateuria aurantia</i>		Lyophilized

Free from Salmonella, Shigella , E.Coli

Cautions for handling and use of product

1. Mixing equipment is to be thoroughly rinsed with water and detergent before using the same equipment for formulating other fertilizers/ pesticides.
2. Surplus product may be disposed in crop lands
3. Do not eat / drink / smoke during application.
5. Direct incidence of Si Sol B™ may cause irritation and therefore it is recommended that the operator should use protective gear viz gloves, apron, mask, eye gear and hood.

Antidotes

In the case of ingestion: Symptomatic treatment

In the case of contact with Eyes: Flush with water liberally for 20 minutes.

Citations

There are many citations in public domain on Silica solubilizing bacteria.

Commitment to Nature

- Si Sol B™ is approved for use in organic agriculture.
- Si Sol B™ is safe to use along with bio fertilizer inoculums like Agri Life Nitrofix™ (Nitrogen Fixing bacteria) ; P Sol B® (Phospho bacteria) ; K Sol B® (Potash mobilizing bacteria); Zn Sol B® (Zinc mobilizing bacteria) :S Sol B® (Sulphur solubilizing bacteria) : Fe Sol B® (Iron / Ferrous solubilizing bacteria) : Mn Sol B™ (Manganese solubilizing microbe) and Agri Life Agrivam® (Vesicular-arbuscular mycorrhiza)
- Si Sol B™ is safe to use along with botanical and microbial bio pesticides.
- Si Sol B™ can be used as an effective component in IPM/ INM programmes, thereby leading to a reduction in use of chemical fertilizers and creating a safer environment.
- Si Sol B™ does not lead to residue problems and doesn't cause resistance or resurgence problems.

Benefits from Si Sol B[™]

- Si Sol B[™] effectively mobilizes unavailable silica ions present as insoluble silicate complexes and make it assimilable by plants
- It strengthens the plant and makes it resistant to attack by pests and diseases by strengthening the cell walls
- It protects crops from lodging, aids the plant in combating biotic and abiotic stresses.
- Natural Silica solubilization improves both plant and soil health and also aids in soil remediation.
- The increase in the beneficial microbe population in soil improves soil health.
- Si Sol B[®] is earthworm friendly, pet friendly, eco friendly and infant friendly