



# SUGARCANE BIOFERTILIZER KIT

## GROWTH & YIELD BOOSTER

LIQUID BIO-INOCULANTS TECHNOLOGY BASED BIOFERTILIZER CONSORTA FOR SUGARCANE CULTIVATION

**K**rishi-Sugarcane Growth & Yield Booster contains a consortia of liquid formulations of biofertilizers necessary for increasing cane growth & yield. Biofertilizers present in booster packs not only facilitate availability of various nutrients to crops in a balanced manner but also enhance efficiency of utilization of applied chemical fertilizers. Subsequent to application of Krishi-Sugarcane Growth & Yield Boosters, it will be possible for farmers to reduce dosage of chemical fertilizers applied up to a minimum of 25%.

Krishi-Sugarcane Growth & Yield Boosters are composed of consortia of the following biofertilizer inoculants:

**Krishi – Acetobacter:** Sugarcane specific pure cultures of Acetobacter. It facilitates fixation of atmospheric nitrogen in aerial parts of sugarcane plant. CFU count,  $2 \times 10^9$ /ml.

**Krishi – Azospirillum:** A liquid formulation containing pure cultures of Azospirillum, which facilitates fixation of atmospheric nitrogen in soil. CFU count,  $2 \times 10^9$ /ml.

**Krishi – Phosphobacterium:** Phosphobacterium produces organic acids in soil and converts insoluble inorganic phosphatic compounds into soluble form and makes them available to plants. CFU count,  $2 \times 10^9$ /ml.

**Krishi-Potash Mobiliser:** A liquid formulation contains pure cultures of Potash Mobilising bacterium. When applied to the soil it facilitates mobilization of K present in soil. CFU count,  $2 \times 10^9$ /ml.

**Krishi-Zinc Solubiliser:** Zinc solubilising bacterium produces organic acids and dissolves unavailable form of Zn present in soil and makes them available to plants. A liquid formulation with CFU count,  $2 \times 10^9$ /ml.

**Krishi-Silicate Solubiliser:** Silicate solubilising bacterium produces organic acids and dissolves silica present in soil and makes them available to plants. A liquid formulation with CFU count,  $2 \times 10^9$ /ml.

**Krishi-Soil bio-Ameliorant:** A unique bacterial formulation, which is useful for soil pH modulation. Repeated applications of Krishi – Soil Bioameliorant facilitate gradual reduction of soil pH at the rhizosphere and enhances uptake of nutrients.

### Krishi-Sulphur Oxidising

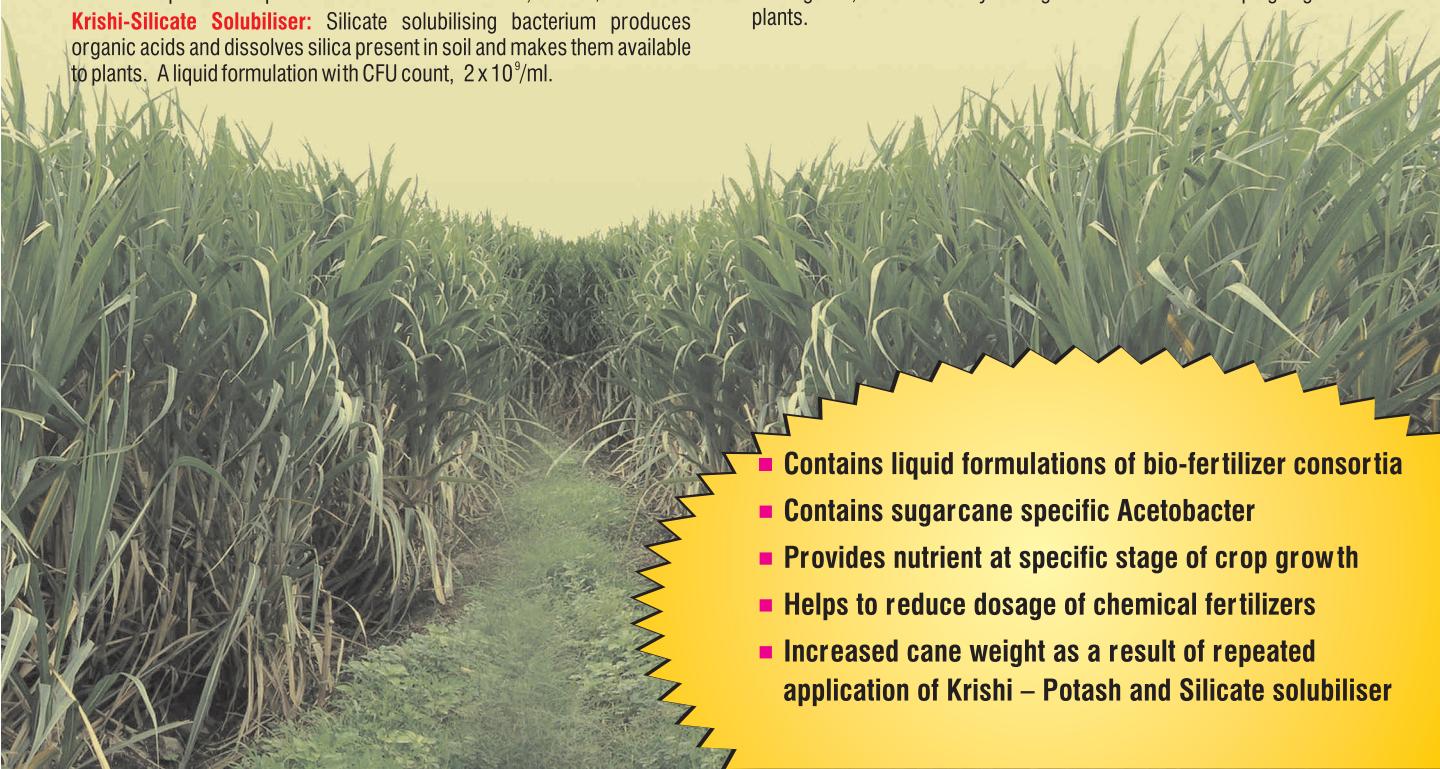
**Bacterium:** A unique formulation useful for oxidation of sulphur present in soil. Sulphur has now gained equal importance in plant nutrition as that of N, P & K.

**Krishi-Pseudomonas:** Contains plant growth promoting cum disease preventing bacterium, *Pseudomonas fluorescens*. A liquid formulation with CFU of  $2 \times 10^9$  per ml.

Application of adequate quantities of farmyard manure/organic manure is essential for the success of biofertilizer technology.

### Krishi-Sugarcane Growth & Yield Booster:

**Growth Booster # 1:** Recommended for application immediately after planting. This will help to meet nutrient requirements and root establishment of young seedlings. Contains microbial culture for fixation of nitrogen in soil (Azotobacter), in various parts of plant (Acetobacter), and phosphorus solubilisation in soil. In addition, Growth Booster # 1 also facilitates pH modulation at rhizosphere and controls population of white grubs, which normally damage white roots of developing sugarcane plants.



- Contains liquid formulations of bio-fertilizer consortia
- Contains sugarcane specific Acetobacter
- Provides nutrient at specific stage of crop growth
- Helps to reduce dosage of chemical fertilizers
- Increased cane weight as a result of repeated application of Krishi – Potash and Silicate solubiliser

**Growth Booster # 2:** Recommended for application immediately after establishment of good root system ie., during first earthing-up (45 days after planting). Growth Booster # 2 contains microbial cultures for N fixation, P solubilisation and K-mobilisation. It also facilitates pH modulation and prevents grubs from attacking succulent white roots.

**Growth Booster # 3:** Recommended for application at three months after planting. Contains bioinoculant for P-solubilisation, K-mobilisation and Silica (Si) solubilisation. At this stage, sugarcane plants have defined inter-node length and plants begin to deposit silica in cell walls. Silicate solubilising bacteria, an unique culture from Gokulam Biotech, facilitates solubilisation of Si and augments photosynthetic efficiency of grown sugarcane plants. This is achieved due to leaf erectness and leave angles at stem as a result of proper silica deposition.

**Yield Booster # 4 & 5:** Recommended for application around four to six months after planting. Sugar development and cane maturation takes place at this stage of growth in cane. Contains cultures for K-mobilisation, Si and Zn solubilisation. Considering the importance of sulphur at this stage of crop growth, especially for cane maturation and sugar development, sulphur oxidising bacterium has also been incorporated in Yield Booster # 4 & 5.

#### Dosage, method and route of application of Krishi – Sugarcane Growth & Yield Boosters:-

Name of Booster	Dosage	Time of application
Growth Booster # 1	One liter/acre	Basal application
Growth Booster # 2	One liter/acre	45 <sup>th</sup> day (first earthing-up)
Growth Booster # 3	One liter/acre	90 <sup>th</sup> day (second earthing-up)
Yield Booster # 4	One liter/acre	5 <sup>th</sup> Month after planting (optional 4 <sup>th</sup> )
Yield Booster # 5	One liter/acre	7 <sup>th</sup> Month after planting (optional 6 <sup>th</sup> & 8 <sup>th</sup> )

- ❖ Sugarcane seed materials can be treated by soaking them in water containing Krishi – Sugarcane Growth Booster # 1, which will facilitate entry of acetobacter inside tissues of sugarcane.
- ❖ In addition to the above application schedule, once a month soil application of Krishi – Sugarcane Yield Booster # 5 at 4<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup> will be beneficial (Not included in the kit, but can be purchased separately).
- ❖ Krishi-Sugarcane Growth & Yield Booster also facilitates pH modulation and control of soil grubs.



**Method of application:** Contents of Krishi-Sugarcane Growth & Yield Booster combo pack are meant for soil application only. Contents of each booster can be mixed in a small quantity of water or well-decomposed organic manure and applied directly to the root zone or can be applied through the fertigation system. Following application of Sugarcane Growth & yield Booster, doses of applied chemical fertilizer can be reduced by 15 to 25%.

**Packing:** Krishi-Sugarcane Growth & Yield Booster is a five-liter combo pack containing one bottle each of Growth Boosters 1, 2, & 3 and Yield Boosters 4 & 5. A master carton will contain 2 x 5 liters of the combo pack (Total 10 liter per master carton). Additional requirements of Booster 4 and 5 may be purchased separately.

**Shelf-life:** Two years.

**General precautions:** A gap of 3 to 7 days should be allowed between application of chemical fertilizer/other farm chemicals and biofertilizers.

**Storage:** Biofertilizer kits must be stored in a cool and dry place away from direct sunlight.

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Net Content : 2 x 5 Ltrs. per carton sufficient for 2 acres

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