

# Technical Data Sheet

## Bacillus mucilaginosus

### Advanced Biofertilizer for Potassium and Silicate Nutrient Release

*Bacillus mucilaginosus* (formerly *Paenibacillus mucilaginosus*) is a potent agricultural biofertilizer that naturally unlocks insoluble potassium (K), phosphorus (P), and silicon (Si) for plant absorption. This soil inoculant improves soil structure, boosts plant stress tolerance, and promotes root growth, offering a natural, sustainable alternative to chemical fertilizers. Benefits include:

- Solubilizes mineral-bound potassium, silica and phosphorus
- Enhances micronutrient availability (Fe, Zn, Mn, Cu, Ca, Mg, Mo, and S)
- Improves soil structure and moisture retention
- Increases plant resilience to drought and stress

### Technical Data

**Concentration (CFU/g):**

- 10 billion ( $1.0 \times 10^{10}$ ) CFU/g dry powder
- Custom concentrations available upon request

**Particle Size (Mesh):**

- Passes through 100 mesh sieve

**Packaging Options:**

- 22 lb (10 kg) pails
- 44 lb (20 kg) pails
- 340 lb (155 kg) drums
- Smaller custom packaging available on request

**Shelf-life:**

- 1.5 years at room temperature
- 2+ years refrigerated

**Storage Recommendations:**

- Store in a cool, dry location away from direct sunlight.
- Reseal container tightly after each use.

## Application Rates

### Soil Application (Drip, Drench, or Fertigation)

**Dosage:**

- 500–1,000 g per acre (1.25–2.5 kg per hectare)

**Frequency:**

- Apply at least twice: once during the seedling phase and again during the growth phase.
- May be applied every 2-4 weeks as needed.
- Apply first at the seedling phase to allow *B. mucilaginosus* time to colonize the soil and improve potassium solubilization.

**Application Method:**

1. Dissolve thoroughly in water (use enough water to reach the root zone)
2. Use an agitation tank or manual stirring to maintain microbial suspension
3. Apply through drip irrigation lines, micro-sprayers, or fertigation systems, positioning flow as close to the root zone as possible
4. Flush the system after application to prevent clogging or residue buildup

**Do not** tank mix with herbicides, fungicides, bactericides, or chemical pesticides.

### In-Furrow

**Dosage:**

- 100–200 g per acre (250–500 g per hectare)

**Frequency:**

- Apply once at planting to target root initiation and early growth stages.

**Application Method:**

1. Dissolve microbial powder thoroughly in water.
2. Apply directly into the seed furrow or planting trench at seeding time.
3. If using irrigation systems for delivery, ensure solution contacts the root zone.
4. Maintain agitation to prevent settling.

**When tank-mixing with fertilizers:**

- Dilute fertilizer fully in water first before adding microbes
- Do not mix with herbicides, fungicides, bactericides, or pesticides

### Seed Treatment

**Dosage:**

- 2–5 grams per kg of seed

**Frequency:**

- Single application before plantin

**Application Method:**

1. Mix thoroughly with a sticking agent (e.g., sugar solution, gum arabic)
2. Coat seeds evenly, ensuring full surface coverage
3. Allow seeds to dry gently in the shade before sowing

### Organic Matter Amendment

**Dosage:**

- 100–200 grams per ton of organic amendment, compost, substrate, or potting mix

**Frequency:**

- Single application when soil blending

**Application Method:**

- Evenly mix the dry microbial powder into substrate during blending

**Disclaimer:** Results may vary depending on environmental conditions, application rates, and management practices. The manufacturer makes no guarantee of specific results. Seller's liability is limited to replacement of product or refund of purchase price. Manufacturer is not responsible for misuse, mishandling, or application under adverse conditions beyond its control. This product is not registered for pesticidal use with the U.S. Environmental Protection Agency. It is intended as a soil amendment / microbial inoculant only. Keep out of reach of children.