Technical Data Sheet

Bacillus pumilus

Next-Generation Microbial Inoculant for Phosphate Solubilization and Crop Resilience

Bacillus pumilus is a high-performance biofertilizer and plant growth-promoting rhizobacterium (PGPR) that enhances nutrient cycling, soil health, and plant development. It solubilizes phosphorus, supports nitrogen availability, and stimulates beneficial rhizosphere microbes. This versatile soil inoculant accelerates crop residue decomposition, strengthens root systems, and improves yield potential, while also boosting plant tolerance to salinity, drought, and heavy metals.

- Solubilizes phosphate for improved nutrient uptake
- Enhances nitrogen cycling and fertilizer efficiency
- Supports natural plant defense responses (ISR activation)
- Stimulates phytohormone production for robust plant growth
- Improves stress tolerance to drought, salinity, and heavy metals

Technical Data

Concentration (CFU/g):
- 500 billion (5.0×10^{11}) CFU/g dry powder
- Custom concentrations available upon request

Particle Size (Mesh):
- Passes through 100 mesh sieve

Packaging Options:
- 13 lb (6 kg) pails
- 26 lb (12 kg) pails
- 220 lb (100 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:

- 20–40 g per acre (50–100 g per hectare)

Frequency:

- Apply during early root establishment or transplanting
- Reapply every 2–4 weeks during active growth stages as needed

Application Method:

1. Dissolve powder 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.

Seed Treatment

Dosage:

- 1–2 grams per kg of seed

Frequency:

- Single application before planting

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

In-Furrow

Dosage:

- 4–8 grams per acre (10–20 grams 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 microbial powder
- Do not mix with herbicides, fungicides, bactericides, or pesticides

Foliar Spray

Dosage:

- 12.5–25 grams per acre (30–60 grams per hectare)

Frequency:

- Begin at vegetative or pre-flowering stages
- Reapply every 7–14 days, especially during periods of high stress

Application Method:

1. Apply in the early morning or evening to reduce UV exposure
2. Use a non-ionic surfactant or wetting agent for improved adhesion
3. Ensure thorough coverage of foliage, including undersides of leaves
4. Agitate spray solution continuously during application

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.