

Technical Data Sheet

Bacillus methylotrophicus

Soil Probiotic for Nutrient Mobilization & Plant Resilience

Bacillus methylotrophicus is a spore-forming, fast-colonizing soil probiotic and plant growth-promoting rhizobacterium (PGPR) that rapidly colonizes roots, solubilizes nutrients, and supports microbial diversity in the rhizosphere. Known for its robust production of organic acids, lipopeptides, and phytohormones, this strain contributes to early plant establishment, improved nutrient efficiency, and enhanced resilience under abiotic stress. Its durable spore-based formulation ensures long shelf life, storage stability, and compatibility with a wide range of biological inputs.

- Stimulates early root development through production of phytohormones and organic acids
- Solubilizes key nutrients including phosphorus, potassium, iron, and zinc for efficient plant uptake
- Colonizes roots and forms biofilms that support beneficial microbial communities in the rhizosphere
- Enhances abiotic stress tolerance under salinity, drought, and low-nutrient conditions
- Compatible with compost teas, biological blends, and soil health programs for regenerative and organic systems

Technical Data

Concentration (CFU/g):

- 300 billion (3.0×10^{11}) CFU/g dry powder
- Custom concentrations available upon request

Particle Size (Mesh):

- Passes through 100 mesh sieve

Packaging Options:

- 9 lb (4 kg) pails
- 18 lb (8 kg) pails
- 143 lb (65 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:

- 25–50 grams per acre (65–130 grams 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 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:

- 5–10 grams per acre (12.5–25 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 microbes
- 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 or disease pressure

Application Method:

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

Seed Treatment

Dosage:

- 2–4 grams per kg of seed

Frequency:

- Single application before planting

Application Method:

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

Composting or Organic Matter Amendment

Dosage:

- 2.5–5 grams per ton of compost, organic substrate, or potting mix

Frequency:

- Single application before use or at the beginning of composting/soil blending

Application Method:

- For composting, dissolve powder in water. Then spray piles and turn to evenly distribute product through the piles/windrows.
- For organic matter amendment, evenly mix the dry microbial powder into the growing media during turning or mixing

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.