APPLIED BIOTECH INDUSTRIES

Technical Data Sheet

Streptomyces rochei

Soil Probiotic & Biological Rhizosphere Conditioner

Streptomyces rochei is a professional-grade microbial inoculant formulated to support soil health, rhizosphere balance, and resilient crop performance. This naturally occurring actinomycete functions as a soil probiotic and beneficial soil bacterium. It rapidly colonizes the root zone, producing beneficial metabolites and shaping microbial communities in ways that favor plant health and root integrity. Through sustained rhizosphere activity and biological competition, this microbial soil inoculant helps create soil conditions that are unfavorable for undesirable organisms while supporting productive, biologically active soils.

- **Builds Rhizosphere Defense:** Produces natural microbial metabolites that help limit pathogen pressure through biological competition in the root zone.
- **Supports Healthier Root Environments:** Rapid rhizosphere colonization and filamentous growth help maintain root integrity under challenging conditions.
- **Enhances Soil Biological Balance:** Encourages beneficial microbial dominance while reducing opportunistic organisms through space and resource competition.
- **Promotes Root Development and Vigor:** Supports root branching and nutrient and water uptake for stronger establishment and sustained growth.
- **Accelerates Organic Matter Turnover:** Extracellular enzyme activity supports residue breakdown and nutrient recycling for long-term soil productivity.
- **Compatible With Sustainable Programs:** Naturally occurring soil microorganism suited for organic, regenerative, and reduced-input soil health systems.

Technical Data

Concentration (CFU/g):
- 100 billion (1.0×10^{11}) CFU/g dry powder
- Custom concentrations available upon request

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

Packaging Options:
- 15 lb (7 kg) pails
- 31 lb (14 kg) pails
- 254 lb (115 kg) drums
- Smaller custom packaging available on request

Shelf-life:
- 12 months at room temperature
- 24 months 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:

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

Frequency:

- Apply during early root establishment or transplanting
- Reapply every 2–4 weeks during active growth stages as needed
- Split or repeated applications outperform single heavy doses

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:

- 7.5–15 grams per acre (18.75–37.5 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

Seed Treatment

Dosage:

- 3–5 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

Organic Matter Amendment

Dosage:

- 5-10 grams per ton of organic substrate, or potting mix

Frequency:

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

Application Method:

- For organic matter amendment, evenly mix the dry microbial powder into the growing media during turning or mixing