Streptomycin and Tetracyclin

Combination antibiotic
Lesser used & Rarely realized
Boon for Agricultural crop
In the 1950s, soon after the introduction of antibiotics in human medicine, the potential of these “miracle drugs” to work wonders on plant diseases was explored. Nearly 40 antibiotics were screened for plant disease control. Of the screened compounds, around 10 are used commercially. And only streptomycin have significant usage.
Introduction of Streptoplus

Molecular Formula: C21H39N7O12
Technical: Contains Streptomycin Sulfate + Tetracycline Hydrochloride in 9:1 Ratio
Formulation: SP (Soluble Powder)

It is a systemic bactericide used @ 100-150 ppm against important bacterial species
STREPTOMYCIN - is an aminoglycoside antibiotic. The primary mechanism of action of streptomycin is binding IRREVERSIBLY to bacterial ribosomes and thereby inhibiting protein synthesis.

TETRACYCLINE - Tetracycline inhibit protein synthesis by Binding reversibly to bacterial ribosomes.
What is a Bacteria?

Bacteria is prokaryotic (No Nucleus in cell) microorganisms. Typically a few micrometres in length, bacteria have a wide range of shapes, ranging from spheres to rods and spirals.
Common Bacterial Diseases

• Blights
• Soft rots
• Leaf Spots
• Tumours and galls
• Cankers
• Vascular diseases
Diseases of Cereal Crops

- Bacterial leaf blight of rice
- Bacterial leaf streak of rice
- Bacterial rot of wheat ears
- Stalk rot of maize
Diseases of Cash Crops

- Bacterial blight of cotton
- Ratoon stunting of sugarcane
- Red stripe of sugarcane
Diseases of Tuber Crops

- Common scab of potato
- Bacterial brown rot of potato
- Black leg and soft rot of potato
Diseases of Horticultural Crops

- Citrus canker
- Citrus greening disease
- Leaf spot of mango
- Fire Blight of Apple
Diseases of Vegetable Crops

- Soft Rot & Leaf spot of Cabbage
- Bacterial Leaf Spot of Okra
- Bacterial Leaf Spot of Tomato
- Onion Soft Rot
- Carrot Soft Rot
Diseases of Chilies

- Bacterial Spot
- Bacterial Wilt
- Soft Rot
Diseases of Soybean

- Halo Blight of beans
- Common Scab
Benefits of Streptomycin:

- Protecting bactericide for many crops.
- Suppresses Bacterial blight infection in most field crops, vegetables and orchards.
- Provides 7-8 days of dependable protection
- Easy / Soft on plants and animals
- Compatible with most pesticides
Major uses of Streptomyces

Major uses include

- Foliar Application
- Seed treatment, and
- On certain vegetable seedlings
- In the greenhouse and in field.
<table>
<thead>
<tr>
<th>CROP</th>
<th>DISEASE</th>
<th>RECOMMENDED USAGE</th>
<th>FIRST SPRAY</th>
<th>FOLLOW UP SPRAY SCHEDULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>Bacterial leaf blight</td>
<td>1. Seed Treatment-</td>
<td>Prepare streptocycline 40 ppm solution and soak seeds for 12 hours before sowing</td>
<td><strong>Seedling treatment:</strong> Dip the seeding in streptocycline 40 to 100 ppm solution. <strong>Spray:</strong> Spray streptocycline 100 to 150 ppm solution at early root stage. Second spray, if necessary before grain set.</td>
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<tr>
<td>Apple</td>
<td>Fire Blight</td>
<td>Spray Streptocycline 25 to 50 ppm solution</td>
<td>Spray trees at 20-30% bloom</td>
<td>Apply at petal fall and late secondary bloom. Continue to spray at 5-7 day intervals to maintain disease control, but not later than 50 days before harvest.</td>
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<tr>
<td>Beans</td>
<td>Halo blight</td>
<td>Spray Streptocycline 100 to 150 ppm</td>
<td>apply first spray 10 days after emergence of leaf.</td>
<td>Spray 3 times at interval of 7 days.</td>
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<tr>
<td>Citrus</td>
<td>Citrus Canker</td>
<td>Spray Streptocycline 50 to 100 ppm</td>
<td>Ist spray after appearance of new growth.</td>
<td>Spray repeatedly at an interval of 15 to 20 days. Spray so as to cover the foliage and young fruits fully.</td>
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<tr>
<td>Cotton</td>
<td>Seeding blight, Angular leaf spot or Black arm disease</td>
<td>Seed Treatment</td>
<td>Soak the seeds in 40 to 50 ppm solution for a period of two hours. Spray: Strepto-cycline 25 to 40 ppm to be sprayed thrice</td>
<td>Before flowering. After flowering. Twenty days after second spray.</td>
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<td></td>
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<td>Spray</td>
<td><strong>Spray:</strong> Two to three sprays of 40 to 50 ppm solution at an interval of 20 days. First spray 30 days after planting</td>
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<tr>
<td>Potato</td>
<td>Black leg &amp; Soft rot, Bacterial brown wilt or Ring or Bangle disease</td>
<td>Seeds treatment</td>
<td>Prior to planting soak potato seed tubers in strepto-cycline 40 to 100 ppm solution for half an hour. <strong>Spray:</strong> First spray 30 days after planting</td>
<td>Two to three sprays of 40 to 50 ppm solution at an interval of 20 days.</td>
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<td>Tomato</td>
<td>Bacterial leaf spot</td>
<td>Nursery Seedling Treatment Spray</td>
<td>Spray seedlings with streptocycline 40 to 100 ppm solution in seed beds. After the appearance of first true leaves after transplanting.</td>
<td>Two sprays of streptocycline, One before transplanting and Another after 1st are effective for controlling the disease.</td>
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<td>Chillies</td>
<td>Bacterial leaf spot of chillies</td>
<td>Nursery Seedling Treatment Spray</td>
<td>Spray seedlings with streptocycline 40 to 100 ppm solution in seed beds. After the appearance of first true leaves after transplanting</td>
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<td>Cabbage</td>
<td>Black Rot</td>
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Conclusion so far... & this is our USP

- Excellent Product
- Control wide range of Bacterial diseases
- Cover all most all crops of all the regions
  - Rice
  - Cotton
  - Sugarcane
  - Maize
  - Soybean
  - Wheat
  - Potato
  - Vegetables
  - Fruit Crops
Thanks