

# EndoPrime®

## CONTAINS NON-PLANT FOOD INGREDIENTS:

### Soil Amending Guaranteed Analysis

#### 15.7% Total Active Ingredients

*Glomus intraradices* .....(562 propagules/g)

*Glomus mosseae* .....(562 propagules/g)

*Glomus aggregatum*.....(562 propagules/g)

*Glomus etunicatum* .....(562 propagules/g)

15% Humic acid derived from Leonardite

#### 84.3% Total Inert Ingredients (Clay)

**A concentrated suspendable powder containing 4 high performing endomycorrhizal fungi, formulated for use as an in-furrow spray, seed treatment, soil drench, transplant treatment, bare root treatment, and potato seed piece treatment for improvement of plant vigour.**

## GENERAL INFORMATION

EndoPrime is a suspendable powder that contains living propagules of multiple species of arbuscular mycorrhizal fungi that colonize the rhizosphere of plants in a symbiotic manner. The mycorrhizal fungi expand out beyond the plant roots or rhizosphere region of the soil surrounding the plant roots to acquisition nutrients and water.

Arbuscular mycorrhizal fungi (AMF) form symbiotic associations with roots of most agriculturally important crops. EndoPrime improves plant vigour by enhancing the root system's ability to efficiently absorb water and nutrients under variable environmental conditions throughout the entire crop cycle.

EndoPrime contains 2,250 propagules per gram of the following four endomycorrhizal species: *Glomus intraradices*, *Glomus mosseae*, *Glomus aggregatum*, *Glomus etunicatum*.

## GENERAL USE INSTRUCTIONS

EndoPrime is a suspendable powder that can be applied as:

- an in-furrow spray at planting, transplant water treatment, hill drench at planting, surface band at planting, soil shank injection at planting, or by chemigation. This product can also be applied directly to plants grown in the greenhouse for transplanting purposes.
- EndoPrime can be used on newly seeded, transplanted or established crops. The goal is to make physical contact between the inoculum and the roots. Direct the application of EndoPrime near the living root or seed of the plant, where new roots will grow through it.
- Since EndoPrime is most effective when the host plant requires nutrients for optimal plant growth, excessively high levels of phosphorous fertilizer used at planting may reduce the ability of EndoPrime to colonize the plant.

## COMPATIBILITY WITH OTHER AGRICULTURAL PRODUCTS

Compatibility and performance data for EndoPrime with other agricultural products are limited. **DO NOT** tank-mix EndoPrime with other products unless compatibility has been verified. If considering tank-mixing EndoPrime with other products use the following compatibility jar test before mixing an entire tank:

Add water from the same water source to a clear glass or plastic jar. Add the products in correct proportions. Mix thoroughly and let stand for a minimum of 15 minutes. Separation, gelling, or generation of heat are all signs of incompatibility.

Always read and follow all label directions and precautions for each product. When using combinations of products, the most restrictive label limitations and precautions must be followed. **DO NOT** mix EndoPrime with any product that has a prohibition against tank-mixing.

**For further information consult your Sumitomo Chemical Australia representative.**

## SPRAY PREPARATION

Spray equipment must be clean and free of previous pesticide deposits before applying EndoPrime. Fill spray tank ¼ to ½ full of water. Add EndoPrime directly to the spray tank. Mix thoroughly to fully disperse the product. Once dispersed and suspended, add remaining amount of water. Continued agitation is required (mechanical or hydraulic). Avoid storage of mixed spray solutions for periods greater than 24 hours. Re-suspension of the spray solution after storage is critical.

**IMPORTANT: After mixing with water, shake or stir vigorously. Maintain continuous agitation in the mix tank during mixing and application to assure a uniform suspension. When spraying EndoPrime, use filters or screens no smaller than #50 mesh.**

## DIRECTIONS FOR APPLICATIONS THROUGH SUBSURFACE DRIP TAPE

EndoPrime can be applied through subsurface drip tape, so as to treat the soil around the crop root zone. This is best accomplished by making sure contact between the plant roots and AMF occurs, drip irrigation applications should be divided to improve the movement into the root zone. The drip irrigation should be initiated to apply 30% of the total water to wet the soil and root zone. This will be followed with a 30% total volume including the AMF target rate. The

last segment of the application process is to apply 40% of the total water to move the AMF into the root zone.

Fill tank with 30-50% water, add in EndoPrime slowly with continual agitation to make sure there is not clumping and uniform distribution throughout the system. Once suspended, add in the additional water while agitation is running to make sure that the material is uniformly distributed through the spray mixture.

Inject EndoPrime downstream of sand and/or screen filters smaller than 50 mesh.

## APPLICATION INSTRUCTIONS FOR CROP CATEGORIES

CROP	APPLICATIONS	PLANTING RATE (PLANTS/ HECTARE)	USE RATE	CRITICAL COMMENTS
Vegetable Transplants: <ul style="list-style-type: none"> <li>• Leafy Vegetables (lettuce, celery, etc)</li> <li>• Fruiting Vegetables (tomato, pepper, etc)</li> <li>• Cucurbits (melons, pumpkin, squash, etc)</li> </ul>	Pre-Plant Tray Drench	<37,500	100-150 g/ha	When applying EndoPrime as a transplant tray drench, it is important that: <ul style="list-style-type: none"> <li>• Uniform distribution of drench is made to moist potting media.</li> <li>• Sufficient water volume is used, allowing movement of product into the root zone.</li> <li>• No more than 10% run through of solution occurs.</li> <li>• Application is made between seeding and 2nd true leaf stage for best results and maximum time for establishment.</li> </ul> For at-plant transplant water applications, apply solution to the soil using hand-held, mechanical or motorized equipment. Maintain continuous agitation during application. Delivery of EndoPrime should be in such a manner that the treated water reaches the transplant roots or is applied below or to the side of the transplant so new root growth reaches the product.
	OR	37,500-75,000	150-200 g/ha	
	At-Plant Transplant Water	75,000-112,500	200-250 g/ha	
	OR	>112,500	250-300 g/ha	
	Subsurface Drip Tape			

CROP	APPLICATION	USE RATE	COMMENTS												
Onion Transplants	Bare Root Spray OR Pre- or At-Plant Banded Spray	100-150 g/ha	<p>Prior to applying EndoPrime as a pre-plant spray to onion roots, remove excess soil from roots.</p> <p>Completely spray roots to ensure thorough coverage.</p> <p>For banded spray applications, incorporate product using overhead irrigation or rainfall, within 72 hours of application.</p>												
Seeded Vegetables: (carrots, onions, lettuce, beans, tomato, etc.)	In-Furrow Spray (at planting) OR Post-Plant Banded Spray OR Subsurface Drip Tape (post-plant)	100-150 g/ha	<p>For in-furrow treatments, apply in a sufficient spray volume to disperse the propagules in the bottom of the furrow where seeds will fall. Mount spray nozzle so that spray is directed in the furrow just before seeds are dropped and covered.</p> <p>For post-plant banded spray applications, incorporate product using overhead irrigation or rainfall, within 72 hours of application.</p>												
Potato	Seed Piece Treatment OR In-Furrow Spray (at planting)	100-150 g/ha	<p>For in-furrow treatments, the rate per broadcast hectare should remain constant at the chosen rate 100-150 grams/hectare. However, the rate per linear meter (i.e. 100m. of row) will vary, depending on row spacing.</p> <p>Use the chart below to determine the EndoPrime rate per 100m of row.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Row spacing</th> <th>75cm</th> <th>80cm</th> <th>85cm</th> <th>90cm</th> <th>100cm</th> </tr> </thead> <tbody> <tr> <td>Grams/100m</td> <td>1.1</td> <td>1.2</td> <td>1.3</td> <td>1.35</td> <td>1.5</td> </tr> </tbody> </table> <p>For potato seed piece treatment, apply 100-150 grams product onto seed pieces needed to plant one hectare. Apply using equipment that ensures uniform and thorough coverage of each seed piece.</p> <p>For in-furrow treatments, mount spray nozzle so that spray is directed in the furrow, onto the seed pieces, just before they are covered.</p> <p>Since EndoPrime is most effective when the host plant requires nutrients for optimal plant growth, excessively high levels of phosphorous fertilizer used at planting may reduce the ability of EndoPrime to colonize the plant</p>	Row spacing	75cm	80cm	85cm	90cm	100cm	Grams/100m	1.1	1.2	1.3	1.35	1.5
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Sweet Potato	Seed Root (Slip) Treatment OR At-Plant Transplant Water	100-150 g/ha	<p>Prior to applying EndoPrime as a pre-plant treatment to sweet potato seed roots, wash slips to remove excess soil.</p> <p>Completely immerse seed roots for 1-2 minutes in a well agitated suspension to ensure thorough coverage. Make sure seed slip treatment slurry has enough viscosity to stick to the roots.</p> <p>Spraying root slip roots may improve the coverage of the roots to achieve adequate coverage.</p> <p>For at-plant drench applications, apply solution to the soil surface as a drench using hand-held, mechanical or motorized equipment. Maintain continuous agitation during application.</p>												

CROP	APPLICATION	USE RATE	COMMENTS
Strawberry, blackberry; loganberry; raspberry, black and red; wild raspberry	Bare Root Treatment OR At-Plant Soil Drench OR Subsurface Drip Tape	150-200 g/ha	Prior to applying EndoPrime as a pre-plant treatment to strawberry roots, wash transplants to remove excess soil.  Completely immerse or spray roots to ensure thorough coverage.  For at-plant drench applications, apply solution to the soil surface as a drench using hand-held, mechanical or motorized equipment. Maintain continuous agitation during application.
Sorghum, Cotton, Mungbeans, Soybeans, Wheat, Barley, Oats, Corn, Chickpeas, Faba beans, Lentils, Rice, Sugarcane, Pigeon Peas, Lablab, Sunflowers, Linseed, Field Peas, Triticale, Navy beans, Peanuts, Hemp, Poppies and Pyrethrum.	In-furrow or seed treatment	100 g/ha	Apply in-furrow with seed (or cane billets) with the goal for the solution to come in contact with the seed (or cane billets) and roots when germination occurs.  OR Apply as a seed treatment at a sufficient rate per kg of seed to give 100g of product per hectare when seeding rate is accounted for. If applying as a seed treatment, mix with water at a sufficient dilution to adequately cover all the seeds.  100g of EndoPrime mixed with a minimum of 500 mL and a maximum of 1 Litre of water per 100 kg of seed is recommended.  Refer to COMPATIBILITY WITH OTHER AGRICULTURAL PRODUCTS section when mixing with other products.  Maintain continuous agitation in mix tank during mixing and application to assure a uniform suspension.  Use filters or screens no finer than #50 mesh.

CROP	APPLICATIONS	RATE PER 1,000 PLANTS	COMMENTS
Trees & Vines (New Plantings)	Bare Root Spray or Dip	50 g	Use for tree seedling production (endomycorrhizal trees). EndoPrime can be applied as a bare root spray, or as a container drench. Suggested dilution rate: 50 grams mixed in 10 Litres of water. Spray or dip roots of plants prior to planting.
	Container Drench	80 g	Determine drench volume by applying water to a single container to the point of run through.
	In-Field Drench (i.e. Tanking)	100 g	Apply the diluted mixture around the trunk of each tree. Use sufficient water volume to move product into the root zone.

CROP	APPLICATIONS	STAGE OF DEVELOPMENT	RATE PER 1,000 PLANTS	COMMENTS
Trees & Vines (Established)	In-Field Drench	1 year or less	100 g	In-field drench: Apply diluted product around the trunk of each tree or vine during active growth. Use sufficient water volume to allow movement of product into the root zone.
		2 to 4 years	150 g	
	Directed Spray (over root zone)	1 year or less	100 g	For directed spray and berm applications, incorporate product using overhead irrigation or rainfall, within 72 hours of application.
		2 to 4 years	150 g	
		5 + years	400 g	

For trees and vines grown with a cover crop between the rows, make an application of EndoPrime to the seed of the cover crop at the time of planting as a seed treatment in the hopper box.

## STORAGE CONDITIONS:

Product can be stored in a cool, dry area (less than 50oC) without loss of viability.

### Warning:

Avoid breathing dust. Use outdoors or in a well-ventilated area. If inhaled, remove person to fresh air and keep comfortable for breathing. Avoid eye contact. If in eyes, rinse cautiously for several minutes. Dispose of contents/container in accordance with local regulation.

**THIS PRODUCT IS NOT CONSIDERED TO BE A DANGEROUS GOOD UNDER THE AUSTRALIAN CODE FOR THE TRANSPORT OF DANGEROUS GOODS BY ROAD AND RAIL**

**IN A TRANSPORT EMERGENCY DIAL 000 POLICE OR FIRE BRIGADE**

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## IMPORTANT NOTICE

These goods are to be used only for the purpose and as specified on the label, and are not suitable for any other purpose. To the fullest extent permitted by law, we do not accept or bear any liability on any basis for any loss, damage, cost or expense, arising in any way, directly or indirectly, in connection with the goods.

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