

2024-0138
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GROUP **BM02** FUNGICIDE

ASPERELLO T34 Biocontrol

Biological Fungicide Wettable Powder

Live Organism

For suppression or partial suppression of certain diseases caused by *Fusarium oxysporum*, *Pythium*, *Phytophthora*, *Rhizoctonia solani*, *Sclerotinia* spp., *Botrytis cinerea* and *Didymella bryoniae* in greenhouse ornamentals, specific greenhouse and field grown food crops, Cannabis produced commercially indoors, grey mould (*Botrytis cinerea*) and crown rot (*Phytophthora* spp.) on greenhouse berries and small fruits .

COMMERCIAL

KEEP OUT OF REACH OF CHILDREN

READ THE LABEL BEFORE USING

ACTIVE INGREDIENT: *Trichoderma asperellum* strain T34 12.00 %

This wettable powder formulation contains a minimum of 12.00 % or 1×10^9 colony forming units per gram of dry weight.

REGISTRATION NO. 30229 PEST CONTROL PRODUCTS ACT

POTENTIAL SENSITIZER

Net Contents: 100 - 500 grams

Batch number:

Expiry date:

Manufactured by:
Biocontrol Technologies, S.L.
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SPAIN

Distributed by:
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Spanish Patent ES 2 188 385 B1
European Patent EP 1 400 586 B1
USA Patent US 7 553 657 B2

PRODUCT INFORMATION

ASPERELLO T34 Biocontrol is a biological fungicide containing dry conidia of the beneficial fungus *Trichoderma asperellum* strain T34 which is used preventatively for the suppression or partial suppression of certain diseases caused by *Fusarium oxysporum*, *Pythium*, *Phytophthora*, *Rhizoctonia solani*, *Sclerotinia* spp., *Botrytis cinerea* and *Didymella bryoniae* in greenhouse ornamentals, specific greenhouse and field grown food crops, and Cannabis produced commercially indoors.

The product must be applied repetitively, throughout the life of the crop in order to maintain the appropriate level of *Trichoderma* in the growing media or on the crop to obtain an optimal effect. To get the best results against soil-borne pathogens, start at plant propagation (sowing, seedlings, cuttings), follow up at transplanting and apply at regular intervals of 2 to 3 months afterwards. To optimize results against gummy stem blight (*Didymella bryoniae*), start spraying at an early growth stage (seedlings) and apply at regular intervals of 7-10 days during the disease period.

ASPERELLO T34 Biocontrol, preventively applied, protects plants from diseases due to its capacity to colonize the growing media, foliage and the plant roots, creating a physical barrier against pathogens and competing directly for space and/or nutrients. Also, ASPERELLO T34 Biocontrol has a direct effect on the pathogenic fungus through parasitism and/or antibiosis. Finally, ASPERELLO T34 Biocontrol induces plant resistance responses (ISR).

ASPERELLO T34 Biocontrol germinates and grows around the crop roots in a wide range of soils and growing media. It develops in a variety of pH (4-9) and growing media temperatures (15-35°C), but its optimal growth occurs at pH 6-8 and temperatures between 20-30°C.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN. May cause sensitization. Avoid contact with skin, eyes and clothing. Avoid breathing dust and spray mist.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Wear a long sleeved shirt, long pants, waterproof gloves, socks and shoes and a NIOSH-approved particulate filtering facepiece respirator with any N, R or P filter when handling, mixing/loading or applying the product and during all cleanup/repair activities. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before re-use. Keep and wash PPE separately from other laundry. Wash hands before eating, drinking, chewing gum, using tobacco or using toilet.

For Outdoor Spray Applications: Apply only when the potential for drift beyond the area to be treated is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment, and sprayer settings.

ENVIRONMENTAL PRECAUTIONS

To reduce runoff from treated areas into aquatic habitats, avoid application to areas with a moderate to steep slope, compacted soil, or clay. Avoid application when heavy rain is forecast. Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative filter strip between the treated area and the edge of the water body. Additional guidance can be found on the Runoff Mitigation portion of the Canada.ca website.

FIRST AID

If swallowed: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

- If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.
- If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.
- General:** Seek medical attention or contact a poison control centre IMMEDIATELY if irritation occurs and persists or is severe. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION: Treat symptomatically.

Compatibility:

The use of ASPERELLO T34 Biocontrol is recommended 7-10 days after a soil or substrate sterilization, fumigation, solarization or biofumigation, once the sterilizing agent or fumigant has dissipated or as otherwise stated by the product manufacturer.

ASPERELLO T34 Biocontrol should not be applied in a tank mix with other products (pesticides or liquid fertilizers). The impact of other products, applied before or after ASPERELLO T34 Biocontrol, on its performance has not been fully investigated. Some pesticides, particularly fungicides, may reduce the effectiveness of ASPERELLO T34 Biocontrol. Contact your Biobest advisor or consult the Side Effect List at Biobest website (www.biobestgroup.com) for more information on compatibility with other products.

Restrictions

It is not possible to evaluate the efficacy and/or phytotoxicity of ASPERELLO T34 Biocontrol on all plant species and varieties. It is recommended to conduct a small scale test by treating a limited number of plants, at recommended use rates, prior to initiating large scale use. Contact your Biobest advisor or consult Biobest website www.biobestgroup.com for more information.

Effectiveness of ASPERELLO T34 Biocontrol has been demonstrated in a range of growing media types including coir, peat, perlite, rockwool and soil.

DIRECTIONS FOR USE

ASPERELLO T34 Biocontrol can be applied by spraying, drenching, dipping or chemigation (including drip (trickle) irrigation, furrow, hand held, overhead boom, sprinkler and other irrigation systems). DO NOT apply this product through any other type of irrigation system.

Application equipment should be thoroughly cleaned before use so that no traces of previous pesticides remain. Suspend the correct amount of ASPERELLO T34 Biocontrol in a small amount of water and shake to obtain good product dispersion. Add this suspension to the application tank, complete by adding the total volume of water necessary to treat the crop, stirring continuously to ensure a homogeneous application of the product.

DO NOT apply in greenhouses unless otherwise specified in the crop-specific use directions.

DO NOT apply by air.

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests. DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes. DO NOT allow releases, effluent or runoff from greenhouses containing this product to enter lakes, streams, ponds or other waters.

Field sprayer application: DO NOT apply when wind speed is less than 1 km/h. Avoid application of this product when winds are gusty. DO NOT apply with sprays finer than the American Society of Agricultural and Biological Engineers (ASABE) S572 (572.1 to 572.3) Fine classification. Boom height must be 60 cm or less above the crop or ground.

Chemigation: DO NOT apply when wind speed is less than 1 km/h. Avoid application of this product when winds are gusty. DO NOT apply with sprays finer than the American Society of Agricultural and Biological Engineers (ASABE) S572 (572.1 to 572.3) Medium classification. Applications MUST be conducted WITHOUT the use of end guns.

DO NOT apply when wind speed causes non-uniform distribution and/or favours drift beyond the area intended for treatment. DO NOT apply by chemigation if the area to be treated is within 100 m of a residential area or park.

When chemigation is used, make sure ASPERELLO T34 Biocontrol reaches the roots in the late afternoon and that it leaves the irrigation system as soon as possible. This will minimize the wash-out risk and help obtain a good installation around the roots.

Application equipment should be thoroughly cleaned after use.

Crops	Diseases	Application type	Rate	Remarks
Greenhouse ornamentals	For suppression of fusarium wilt (<i>Fusarium oxysporum</i>) For partial suppression of post-emergence damping off and crown rot (<i>Pythium aphanidermatum</i>)	Incorporation in the growing media	10 g/m ³ of growing media	If mixing with water for application, use 50-100 L of water per m ³ of growing media.
		Spray/drench (seedtrays, multipots & other types of seedling containers)	0.5 g/m ² In sufficient water (5L per m ²)	Dose calculated for a depth of 5cm, adjust rate for greater depths.
		Root bath (long dip) for cuttings & plug trays to suppress fusarium wilt	1 g/100 L water	
		Chemigation after planting	5 g/50-100 L water per m ³ growing media (or 5g/1000 1L pots)	Repeat this application one week later if plants were not treated during propagation. Apply a follow-up treatment every 2-3 months.
Greenhouse cucurbit vegetables (Crop Group 9)	For suppression of fusarium wilt (<i>Fusarium oxysporum</i>) For partial suppression of post-emergence damping off and crown rot (<i>Pythium aphanidermatum</i> , <i>Phytophthora capsici</i>)	Incorporation in the growing media	10 g/m ³ of growing media (or 10 g/1000 1L pots)	If mixing with water for application, use 50-100 L of water per m ³ of growing media
		Spray/drench (seedtrays and multipots & other types of seedling containers)	0.5 g/m ² In sufficient water (5 L per m ²)	Dose calculated for a depth of 5 cm, adjust rate for greater depths.
		Chemigation after planting	5-10 g per 50-100 L of water per m ³	Apply a follow up treatment every 2-3 months.

			of growing media (or 5-10 g/ 1000 1L pots)	Use the higher rate in high susceptible crops or if a high disease pressure is predicted.
	For suppression of gummy stem blight (<i>Didymella bryoniae</i>)	Foliar spray	250 – 500 g/ha in sufficient water (500-1000 L/ha)	In sufficient water to thoroughly wet the crop but avoiding run off. Start the application at an early growth stage and repeat at 7- to 10-day intervals for as long as the pathogen is present or conditions are conducive to disease. Use the higher rate and shorter spray interval in high susceptible crops or if a high disease pressure is predicted.
Greenhouse fruiting vegetables (Crop Group 8-09)	For suppression of fusarium wilt (<i>Fusarium oxysporum</i>) for tomato and pepper ONLY	Incorporation in the growing media	10 g/m ³ of growing media (or 10 g/1000 1L pots)	If mixing with water for application, use 50-100 L of water per m ³ of growing media
	For partial suppression of post-emergence damping off and crown rot (<i>Pythium aphanidermatum</i>)	Spray/drench (seedtrays and multipots & other types of seedling containers)	0.5 g/m ² In sufficient water (5 L per m ²)	Dose calculated for a depth of 5 cm, adjust rate for greater depths
	For partial suppression of post-emergence damping off and crown rot (<i>Phytophthora capsici</i>) on tomato, pepper, and eggplant ONLY	Chemigation after planting	5-10 g per 50-100 L of water per m ³ of growing media (or 5-10 g/ 1000 1L pots)	Apply a follow up treatment every 2-3 months. Use the higher rate in high susceptible crops or if a high disease pressure is predicted.
Greenhouse tomato	For partial suppression of grey mold (<i>Botrytis cinerea</i>)	Foliar spray	250 – 500 g/ha	Begin applications prior to disease development or at the beginning of the symptoms. Apply at 7- to 10-day intervals. Apply in sufficient water volume to obtain thorough coverage. Use the higher rate

				and shorter spray interval in high susceptible crops or if a high disease pressure is predicted.
Greenhouse strawberries	For suppression of fusarium wilt (<i>Fusarium oxysporum</i>)	Incorporation in the growing media	10 g/m ³ of growing media (or 10 g/1000 1L pots)	If mixing with water for application, use 50-100 L of water per m ³ of growing media
	For partial suppression of post-emergence damping off and crown rot (<i>Pythium aphanidermatum</i>)	Spray/drench (seedtrays and multipots & other types of seedling containers)	0.5 g/m ² In sufficient water (5L per m ²)	Dose calculated for a depth of 5 cm, adjust rate for greater depths.
	For partial suppression of crown rot (<i>Phytophthora cactorum</i>)	Chemigation after planting	5-10 g per 50-100 L of water per m ³ of growing media (or 5-10 g/ 1000 1L pots)	Apply a follow up treatment every 2-3 months. Use the higher rate in high susceptible crops or if a high disease pressure is predicted.
Cannabis produced commercially indoors	For suppression of fusarium wilt (<i>Fusarium oxysporum</i>)	Incorporation in the growing media	10 g/m ³ of growing media (or 10 g/1000 1L pots)	If mixing with water for application, use 50-100 L of water per m ³ of growing media
	For partial suppression of post-emergence damping off and crown rot (<i>Pythium aphanidermatum</i>)	Spray/drench (seedtrays and multipots & other types of seedling containers)	0.5 g/m ² In sufficient water (5L per m ²)	Dose calculated for a depth of 5cm, adjust rate for greater depths.
		Chemigation after planting	5-10 g per 50-100 L of water per m ³ of growing media (or 5-10 g /1000 1L pots)	Apply a follow up treatment every 2-3 months. Use the higher rate in highly susceptible crops or if a high disease pressure is predicted.
Greenhouse transplants of: Cucurbit vegetables (Crop Group 9) Fruiting vegetables (Crop Group 8-09) Brassica leafy vegetables (Crop Group 5)	For suppression of fusarium wilt (<i>Fusarium oxysporum</i>) on greenhouse vegetable transplants of cucurbit vegetables (Crop Group 9), lettuce, spinach, swiss chard, celery, bean, pea, onion, garlic, brassica leafy vegetables (Crop Group 5), tomato, pepper, and strawberry ONLY	Incorporation in the growing media	10 g/m ³ of growing media (or 10 g/1000 1L pots)	If mixing with water for application, use 50-100 L of water per m ³ of growing media
		Spray/drench (seedtrays and multipots & other types of seedling containers)	0.5 g/m ² In sufficient water (5L per m ²)	Dose calculated for a depth of 5 cm, adjust rate for greater depths.
		Chemigation after	5-10 g per 50-	Apply a follow up

Bean Pea Onions Garlic Strawberry Lettuce Spinach Swiss chard Celery	For partial suppression of post-emergence damping off and crown rot (<i>Pythium aphanidermatum</i>) on greenhouse vegetable transplants of cucurbit vegetables (Crop Group 9), lettuce, spinach, swiss chard, pea, brassica leafy vegetables (Crop Group 5), fruiting vegetables (Crop Group 8-09), and strawberry ONLY For partial suppression of post-emergence damping off and crown rot (<i>Phytophthora capsici</i>) on greenhouse vegetable transplants of cucurbit vegetables (Crop Group 9), bean, tomato, pepper, and eggplant ONLY	planting	100 L of water per m ³ of growing media (or 5-10 g/ 1000 1L pots)	treatment every 2-3 months. Use the higher rate in highly susceptible crops or if a high disease pressure is predicted.
Potatoes (field)	For suppression of black scurf (<i>Rhizoctonia solani</i>)	In-furrow spray	Apply at 250 g/ha	Apply at planting in a water volume sufficient to ensure thorough coverage of the seed and surrounding furrow (minimum 150 L water/ha)
Strawberries (field or tunnel)	For suppression of crown rot (<i>Phytophthora cactorum</i>)	Dip application prior to transplanting	1 g/1 L of water	
		Drench application or Chemigation	Apply at 500 g/ha	Apply monthly during the growing season. Apply in sufficient water volume that the product reaches the root zone.
Raspberries (field or tunnel)	For suppression of crown and root rot (<i>Phytophthora cinnamomi</i>)	Dip application prior to transplanting	1 g/1 L of water	
		Drench application or Chemigation	Apply at 500 g/ha	Apply monthly during the growing season. Apply in sufficient water volume that the product reaches the root zone.
Lettuce (field)*	For suppression of lettuce drop(<i>Sclerotinia sclerotium</i> and <i>Sclerotinia minor</i>)	Pre-transplant application and Drench application or Chemigation	Apply at 10 g/m ³ of growing media and 250-500 g/ha in field	Apply at 7- to 10-day intervals. Apply in sufficient water volume that the product reaches the root zone.

				Use the higher rate and shorter interval in high susceptible varieties or if a high disease pressure is predicted.
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*For greater efficacy, incorporate ASPERELLO T34 Biocontrol into the growing media of the transplants according to the use directions under “Greenhouse Transplants” prior to transplanting lettuce in the field.

Incorporation in the growing media used for propagation

Apply a dose of 10 grams of ASPERELLO T34 Biocontrol per m³ of propagation growing media (or per 1000 1L pots) before sowing, sticking or potting. Mix the 10 grams ASPERELLO T34 Biocontrol directly into the growing media or into 50-100L of water and add to a m³ of growing media (volume of 50-100 mL of water per L pot = 5-10% of pot volume).

Spray/drench of growing media used for propagation

A treatment with a spray or drench to a m² of cultivated area with seed trays, multipots or other types of seedling containers 5 cm in depth or less, can also be prepared using a rate of 0.5 grams of ASPERELLO T34 Biocontrol mixed in 5 L of water. Application can take place before or just after sowing, sticking or planting. A suspension prepared of 10 grams of ASPERELLO T34 Biocontrol in 100 L water will treat 20 m² of propagated area (5 L of suspension per m² = 0.5 grams of ASPERELLO T34 Biocontrol per m²).

Root bath (long dip)

Dip the roots of the cuttings for several hours or overnight in a suspension containing 1 g of ASPERELLO T34 Biocontrol in 100 L of water (or 0.01 g ASPERELLO T34 Biocontrol in 1 L water).

Pretransplant dip

Prior to planting in the field, dip the roots of the transplants in a suspension containing 1 g of ASPERELLO T34 Biocontrol in 1 L of water.

Chemigation of container-grown crops at planting or during the crop season

Apply 5-10 grams of ASPERELLO T34 Biocontrol in 50-100 L of water per m³ of growing media at planting. The rate of 10 g/ 50-100L water /m³ of growing media can be split in two applications of 5 g/ 50-100Lwater/ m³ of growing media at one week intervals.

Repeat the treatment every 2-3 months as a follow-up treatment. Use the higher rate in highly susceptible crops or when a high disease pressure is anticipated.

Foliar Application

Spray ASPERELLO T34 Biocontrol in a sufficient water volume (500-1000 L/ha) depending on plant development to thoroughly wet the crop but avoiding run off. Begin applications prior to disease development or at the beginning of the symptoms. Reapply every 7-10 days when the conditions are expected to be conducive for disease development.

Drip or Chemigation Application to Field Crops

Apply in sufficient water volume to ensure the ASPERELLO T34 Biocontrol reaches the root zone. Use the higher rate in highly susceptible crops or when a high disease pressure is anticipated.

In-furrow Application

Apply ASPERELLO T34 Biocontrol at 250 g/ha rate as in-furrow application at planting.

Maximum total concentration: Do not exceed the maximum concentration of 10 g/L water.

MINOR USES

NOTE TO USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR THE INDICATED SPECIAL USE APPLICATIONS:

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than Biocontrol Technologies, under the User Requested Minor Use Label Expansion program. For these uses, Biocontrol Technologies has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) under all environmental conditions or for all crop varieties when used in accordance with the label. The user should test the product on a small area first, under local conditions and using standard practices, to confirm the product is suitable for widespread application.

Crops	Diseases	Application type	Rate	Remarks
Greenhouse berries and small fruits (Crop Group 13-07)*	For partial suppression of grey mould (<i>Botrytis cinerea</i>) and crown rot (<i>Phytophthora</i> spp.)	Incorporation in the growing media	10 g/m ³ of growing media (or 10 g/1000 1L pots)	
		Spray/drench	0.5 g/m ² In sufficient water (5L per m ²)	Apply a follow up treatment every 2 – 3 months
		Chemigation after planting	5-10 g per 50-100 L of water per m ³ of growing media (or per 1000 1L pots)	Apply a follow up treatment every 2 – 3 months
		Foliar	0.6 to 1 kg/ha In sufficient water (500-1000 L/ha)	In sufficient water to thoroughly wet the crop but avoiding run off. Apply a follow up treatment every 7 to 10 days

Application Timing (Crop / pest stage): Use preventatively.

Number of Applications: Unlimited

***Crop Group 13-07 – Berries and Small fruits:** Amur River grape; Aronia berry; Bayberry; Bearberry; Bilberry; Blackberry; Blueberry, highbush; Blueberry, lowbush; Buffalo currant; Buffaloberry; Che; Chilean guava; Chokecherry; Cloudberry; Cranberry; Currant, black; Currant, red; Elderberry; European barberry; Gooseberry; Grape; Highbush cranberry; Honeysuckle, edible; Huckleberry; Jostaberry; Juneberry; Kiwifruit, fuzzy; Kiwifruit, hardy; Lingonberry; Loganberry; Maypop; Mountain pepper berries; Mulberry; Muntries; Native currant; Partridgeberry; Phalsa; Pincherry; Raspberry, black; Raspberry, red; Riberry; Salal; Schisandra berry; Sea buckthorn; Serviceberry; Strawberry; Wild raspberry; Cultivars, varieties and/or hybrids of these

Restricted Entry Intervals (REI):

For foliar spray applications and in-furrow applications: **DO NOT** allow workers entry into treated areas for 4 hours or until sprays have dried, unless wearing waterproof gloves, long-sleeved shirt, long pants, socks and shoes, and a NIOSH-approved particulate filtering facepiece respirator with any N, R or P filter.

For soil incorporation applications: **DO NOT** allow workers entry into treated areas for 4 hours or until dust has settled, unless wearing waterproof gloves, long-sleeved shirt, long pants, socks and shoes and a NIOSH-approved particulate filtering facepiece respirator with any N, R or P filter.

Preharvest Interval (PHI): Asperello T34 Biocontrol can be used up to and including the day of harvest. PHI= 0 days.

STORAGE: ASPERELLO T34 Biocontrol should be used by the expiration date when stored in a cool dry place at 4 °C. Do not contaminate water, food, or feed during storage. Keep product in original container during storage and keep container lid tightly closed when not in use.

DISPOSAL:

1. Triple- or pressure-rinse the empty container. Add the rinsing to the spray mixture in the tank.
2. Follow provincial or territorial instruction for any required additional cleaning of the container prior to its disposal.
3. Make the empty, rinsed container unsuitable for further use.
4. Dispose of the container in accordance with provincial or territorial requirements.
5. For information on disposal of unused, unwanted product, contact the registrant or provincial or territorial regulatory agency. Contact the registrant and the provincial or territorial regulatory agency in case of a spill, and for clean-up of spills.

NOTICE TO USER: This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.