

GROUP

BM02

FUNGICIDE

JAZZ OPTI

A Wettable Powder Biofungicide For Mushroom Production Use

Live Organism

COMMERCIAL

ACTIVE INGREDIENT: QST 713 strain of *Bacillus subtilis*,
contains a minimum of 1.31×10^{10} CFU/g

KEEP OUT OF REACH OF CHILDREN

READ THE LABEL AND ATTACHED LEAFLET BEFORE USING

POTENTIAL SKIN SENSITIZER

CAUTION – EYE IRRITANT

REGISTRATION NO.: 33991 PEST CONTROL PRODUCTS ACT

NET CONTENTS:

1 kg - bulk

BAYER CROPSCIENCE INC.
Suite 200, 160 Quarry Park, Blvd. S.E.
Calgary Alberta T2C 3G3

Product Information: 1-888-283-6847
www.es.bayer.ca

Date of Manufacture:

Made in Mexico

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.

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.

Take container, label or product name and *Pest Control Product* Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION: Treat symptomatically.

PRECAUTIONS:

KEEP OUT OF REACH OF CHILDREN. May irritate eyes. May cause sensitization. Avoid contact with eyes, skin or clothing. Avoid inhaling/breathing dusts and spray mists. Wear a long-sleeved shirt, long pants, protective eyewear (goggles), 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 clean-up/repair activities. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

STORAGE:

Jazz OPTI should be used within 6 years from the date of manufacture when stored at up to 25°C. Store this product away from food or feed. Store in a dry area inaccessible to children. Store in original container only. Keep container closed when not in use.

DISPOSAL:

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

JAZZ is a registered trademark of Bayer.

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provincial regulatory requirements. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

GENERAL USE INFORMATION:

JAZZ OPTI is a preventative product for the suppression of Green Mould (*Trichoderma harzianum* = *Trichoderma aggressivum*) in mushroom production. JAZZ OPTI can be mixed with mushroom spawn grains, and mushroom growing supplement, and can be applied as a drench to the surface of mushroom beds. When used as a drench, apply JAZZ OPTI with spray equipment commonly used for making ground applications and sprinkler/irrigation systems commonly used for chemigation in mushroom production. JAZZ OPTI can be used for organic production.

Use Restrictions: 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 wash water.

DO NOT apply this product through any other type of irrigation system.

DO NOT allow effluent or runoff from mushroom houses containing this product to enter lakes, streams, ponds or other waters.

Restricted-Entry Interval (REI): Ground and sprinkler applications – **DO NOT** allow worker entry into treated areas for 4 hours or until sprays have dried unless wearing waterproof gloves, long-sleeved shirt, long pants, socks and shoes. Drip irrigation applications – Entry to treated area is not restricted following application.

Preharvest Interval: Jazz OPTI can be used up to and including the day of harvest. PHI=0 days.

Tank Mix: When applied as a tank-mix combination read and observe all label directions, including rates, personal protective equipment, restrictions and precautions for each product used in the tank-mix. Always use in accordance with the most restrictive label restrictions and precautions.

INTEGRATED PEST MANAGEMENT (IPM):

Integrate JAZZ OPTI into an overall disease and pest management strategy. Follow practices known to reduce disease development. Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.

USE RATE DETERMINATION:

For all treatments, carefully read and follow all label directions, use rates and restrictions. For treatment of mushroom spawn grains and growing supplement, use maximum label rates when heavy disease development is anticipated. For the drench applications, application of JAZZ OPTI prior to or in the early stages of disease development provides the best suppression of Green Mould.

Use maximum label rates for conditions conducive to rapid disease development or when disease development is anticipated. For proper application, determine the number of square metres of bed surface to be treated and the label use rate. For the drench application, prepare only the amount of spray solution required to treat the measured square metres of bed surface. Accurate spray

equipment calibration is essential prior to use.

APPLICATION INSTRUCTIONS:

GROUND: For treatment of mushroom spawn grains and growing supplement, be sure to completely mix JAZZ OPTI with gypsum, limestone or chalk according to Application Instructions and Dosages Table prior to mixing with mushroom spawn grains or growing supplement.

Thorough mixture of the treated mushroom growing substrate is essential for effective disease suppression.

For the drench application, be sure to maintain agitation during mixing and application to assure uniform product suspension. Thorough coverage of beds is essential for effective disease suppression. JAZZ OPTI can be applied with commonly used ground equipment: hose-end, pressurized, greenhouse and hand-held sprayers. To achieve good coverage, use proper spray pressure, litres per square metres of bed surface, nozzles, nozzle spacing and groundspeed. Consult spray nozzle and accessory catalogues for specific information on proper equipment calibration.

CHEMIGATION: This product can be applied through sprinkler (solid set and hand move) or drip type irrigation systems. Refer to the Chemigation Directions for Use section of this label for general directions and precautions. Use the drench application rate as specified in the Application Instructions and Dosages Table of this label.

MIXING INSTRUCTIONS:

MIXING: For treatment of mushroom spawn grains and growing supplement, be sure to completely mix JAZZ OPTI with gypsum, limestone or chalk according to Application Instructions and Dosages Table prior to mixing with mushroom spawn grains or growing supplement.

Thorough mixture of the treated mushroom growing substrate is essential for effective disease suppression.

For the drench application, JAZZ OPTI must be diluted with water. Partially fill the spray tank with clean water and begin agitation. Add the specified amount of JAZZ OPTI to the tank. Finish filling the tank to the desired volume to obtain the proper spray concentration. It is critical that the spray solution be agitated during mixing and application to assure a uniform suspension. Do not allow spray mixture to stand overnight or for prolonged periods. Maintain a spray solution pH between 4.5 and 8.5. Do not exceed label dosage rates.

COMPATIBILITY: Do not combine JAZZ OPTI in the spray tank with pesticides, surfactants or fertilizers if there has been no previous experience or use of the combination to show it is physically compatible, effective and non-injurious under your use conditions. To ensure compatibility of tank-mix combinations, evaluate them prior to use as follows: Using a suitable container, add proportional amounts of product to water. Add wettable powders first, followed by water dispersible granules, then by liquid flowables and lastly, emulsifiable concentrates. Mix

thoroughly and let stand for at least five minutes. If the combination stays mixed or can be remixed, it is physically compatible. Test the combination on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of application.

CHEMIGATION DIRECTIONS FOR USE

General Requirements:

- 1) Apply this product only through sprinkler (solid set and hand move) or drip type irrigation systems. Do not apply this product through any other type of irrigation system.
- 2) Crop injury or lack of effectiveness can result from non-uniform distribution of treated water.
- 3) Ensure that the irrigation system used is properly calibrated and if you have questions, call the Provincial Extension Service specialists, the equipment manufacturer or other experts.
- 4) Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- 5) A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make any necessary adjustments should the need arise.

Requirements for Chemigation Systems Connected to Public Water Systems:

- 1) Public water supply means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of 25 individuals daily at least 60 days throughout the year.
- 2) Chemigation systems connected to the public water systems must contain a functional, reduced-pressure zone (RPZ), backflow preventer or the functional equivalent in the water supply upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top of the overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- 3) The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back towards the injection pump.
- 4) The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 5) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being filled with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment
- 8) Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues may cause product to lose effectiveness or strength.
- 9) Do not combine JAZZ OPTI with pesticides, surfactants or fertilizers for application

through chemigation equipment unless prior experience has shown the combination physically compatible, effective and non-injurious under conditions of use. Conduct a spray compatibility test if mixture with adjuvants or surfactants is planned.

- 10) Maintain agitation in the pesticide supply tank.
- 11) Apply JAZZ OPTI during the last half of the water application.
- 12) Dilute JAZZ OPTI in enough water to be able to draw through system for the last half of the water application.

Sprinkler Chemigation Requirements:

- 1) The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
- 2) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid- operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.
- 8) Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues may cause product to lose effectiveness or strength.
- 9) Do not combine JAZZ OPTI with pesticides, surfactants or fertilizers for application through chemigation equipment unless prior experience has shown the combination physically compatible, effective and non-injurious under conditions of use. Conduct a spray compatibility test if mixture with adjuvants or surfactants is planned.

Solid-set and Hand Move Irrigation Equipment: Determine square hectares (square metres) covered by sprinkler. Fill injector solution tank with water and adjust flow rate to use contents over a 10- to 30-minute interval. Determine the amount of JAZZ OPTI fungicide required to treat area. Add the required amount of JAZZ OPTI fungicide into the same quantity of water used to calibrate the injection equipment. Maintain constant solution tank agitation during the injection period. Operate system at normal pressures recommended by the manufacturer of the injection equipment and used for the time interval established during calibration. Inject JAZZ OPTI fungicide at the end of the irrigation cycle or as a separate application to maximize surface fungicide retention. Stop injection equipment after treatment is completed. Continue to operate the system until JAZZ OPTI fungicide solution has cleared the last sprinkler head.

Drip Chemigation Requirements:

- 1) The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
- 2) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid- operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 4) The system must contain functional inter-locking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- 7) Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues may cause product to lose effectiveness or strength.
- 8) Do not combine JAZZ OPTI with pesticides, surfactants or fertilizers for application through chemigation equipment unless prior experience has shown the combination physically compatible, effective and non-injurious under conditions of use. Conduct a spray compatibility test if mixture with adjuvants or surfactants is planned.
- 9) Maintain agitation in the pesticide supply tank.
- 10) Apply JAZZ OPTI during the last half of the water application.
- 11) Dilute JAZZ OPTI in enough water to be able to draw through system for the last half of the water application

FOR USE AS A MIX WITH MUSHROOM SPAWN GRAINS OR MUSHROOM GROWING SUPPLEMENT AND AS A DRENCH FOR MUSHROOM GROWING BED

JAZZ OPTI has a 0-Day Pre-Harvest Interval for all crops contained on this label. If higher disease pressure is anticipated, use higher dosage.

Application Instructions and Dosages of JAZZ OPTI for Mushroom Production		
Crop	Disease Suppressed	Application Instructions and Dosage
White button mushrooms	Green Mould <i>Trichoderma harzianum</i> (= <i>Trichoderma aggressivum</i>)	For suppression of Green Mould in mushroom spawning media, thoroughly mix 0.17 to 0.33 kg of JAZZ OPTI with 4 to 6 kg of gypsum, limestone or chalk. Use this mixture to coat spawn grains (approximately 100kg) before mixing the spawn into the mushroom growing substrate. Apply treated spawn to 100 m ² of bed surface at spawning. When high disease development is anticipated, follow the spawn treatment with one application to the

		<p>mushroom growing supplement: thoroughly mix 0.17 to 0.33 kg of JAZZ OPTI with 4 to 6 kg of gypsum, limestone or chalk. Use this mixture to coat supplement (approximately 100 kg) before mixing the supplement into the mushroom growing substrate. Apply treated supplement to 100 m² of bed surface at spawning.</p> <p>When high disease development is anticipated, follow the application to spawn and supplement with one drench application to the surface of mushroom beds prior to or in the early stages of disease development. Apply 0.17 to 0.33 kg JAZZ OPTI in 75 L of irrigation water as a drench to 100 m² of bed surface at casing before 1st flush. Maintain adequate circulation in the irrigation tank.</p>
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Product Specific Precautions

Read and understand the entire label before opening this product. If you have questions, call the manufacturer at 1-888-283-6847 or obtain technical advice from the distributor or your provincial agricultural representative.

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