

Container label

GROUP	44	FUNGICIDE
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***Serenade SOIL***<sup>®</sup>  
An Aqueous Suspension Biofungicide

**COMMERCIAL**

**ACTIVE INGREDIENT:** QST 713 strain of dried *Bacillus subtilis*, contains a minimum of  $1 \times 10^9$  CFU/g

**KEEP OUT OF REACH OF CHILDREN**

**READ THE LABEL BEFORE USING**

**POTENTIAL SKIN SENSITIZER**

**REGISTRATION NO.: 30647 PEST CONTROL PRODUCTS ACT**

**NET CONTENTS:** 9.46 – 1000L

Product Information: 1-888-283-6847  
[www.cropscience.bayer.ca](http://www.cropscience.bayer.ca)

Bayer CropScience Inc.  
Suite 200, 160 Quarry Park Blvd. S.E.  
Calgary, Alberta T2C 3G3

In case of spills, poisoning or fire, telephone emergency response number  
1-800-334-7577 (24 hours a day).

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/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 cause sensitization. Avoid contact with eyes, skin or clothing. Avoid inhaling/breathing mist. Wear a long-sleeved shirt, long pants, shoes plus socks, water-proof gloves and NIOSH approved respirator with any N-95, R-95, P-95 or HE filter for biological products when handling, and during all clean-up and repair activities. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

**STORAGE:** To prevent contamination, store this product away from food or feed.

**STORAGE:** Store in a dry area inaccessible to children. Store at room temperature for up to three years from the date of manufacture. 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.

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

Serenade SOIL<sup>®</sup> is a registered trademark of Bayer.

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Booklet

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**GENERAL USE INFORMATION:**

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Serenade SOIL is a broad spectrum, preventative biofungicide to suppress many important plant diseases. It may be applied as a soil application by various methods either alone or in an alternating program of applications with other registered crop protection products. When conditions are conducive to heavy disease pressure, use Serenade SOIL in a rotational program with other registered fungicides. Serenade SOIL may be applied with ground application equipment.

**INTEGRATED PEST MANAGEMENT (IPM):**

For disease resistance management, Serenade SOIL can be integrated into an overall disease and pest management strategy whenever fungicide use is necessary. 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:**

Carefully read and follow all label directions, use rates and restrictions. Use maximum label rates and shortened application intervals when conditions are conducive to heavy disease pressure. For proper application, determine the number of hectares to be treated, the recommended label use rate and select appropriate application volume for the method of application to be used. Prepare only the amount of solution required to treat the measured hectareage. Accurate equipment calibration is essential prior to use.

**PREHARVEST INTERVAL:**

Serenade SOIL can be applied up to and including the day of harvest and may be applied postharvest on potato prior to storage.

**APPLICATION INSTRUCTIONS:**

**GENERAL:** Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower/treatment coordinator are responsible for considering all of these factors when making decisions. Where provinces/territories have more stringent regulations, they should be observed.

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 washwater.

Be sure to maintain agitation during mixing and application to assure uniform product suspension. Serenade SOIL can be applied in commonly used soil application equipment. To achieve proper application, use the appropriate spray pressure, water volume per hectare, nozzles, nozzle spacing and ground speed. Consult spray nozzle and accessory catalogues for specific information on proper equipment calibration.

## DIRECTIONS FOR USE

Serenade SOIL suppresses the diseases specified for the listed crops. Higher rate is recommended under conditions of moderate to high disease pressure. Apply Serenade SOIL in a manner that will concentrate the product in the seed, root, or transplant zone. Delivery of Serenade SOIL to the seed, root, or transplant zone can be accomplished by in-furrow application, transplant drench, broadcast or banded applications on the soil surface, or by surface drip irrigation. These application methods facilitate the colonization of crop roots with the active ingredient and optimize efficacy.

For in-furrow applications spray Serenade SOIL in a narrow band with the spray directed at the seed and surrounding soil before covering the seed or seed piece. For broadcast or banded application to the soil surface, Serenade SOIL must be incorporated into the seed zone by rainfall or overhead irrigation within 24 hours. Serenade SOIL may also be applied via overhead irrigation. Drip irrigation applications should be made with the first irrigation after seeding or transplanting. Serenade SOIL may be injected or shanked into the soil, at the seed zone, prior to planting a crop. With transplanted crops, optimum performance is achieved when Serenade SOIL is applied in the drench water at the time of transplanting.

After crop germination or transplanting, additional applications of Serenade SOIL may be made. Such applications may include drip irrigation (surface or subsurface), directed sprays or shanking in. Use higher rates with broadcast applications and in fields with a history of disease problems. Serenade SOIL has a 0 day PHI, and can be applied up to, and including, the day of harvest. Serenade SOIL can be used in a rotational program with other registered fungicides which control the disease. Do not use on crops that are not specifically listed on the label.

### Ground Application Only

Crop	Disease Suppressed	Rate (litre/ hectare)	Application Instructions
Crop Group 1: Root, tuber vegetables  <b>Garden beet, sugar beet, carrot, celeriac, chervil, chicory, ginseng, horseradish, parsley, parsnip, potato, radish, Oriental radish, rutabaga, salsify, sweet potato, turnip.</b>	Rhizoctonia root rot, black scurf and stem canker ( <i>Rhizoctonia solani</i> )  Phytophthora root rot and pink rot ( <i>Phytophthora erythroseptica</i> )  Pythium root rot and cavity spot ( <i>Pythium</i> spp.)  Fusarium root rot ( <i>Fusarium</i> spp.)	2.7 - 14	<b>Surface applications:</b>  <u>Broadcast or Band.</u> Apply as a 15-cm band over the top of the seed row or as a broadcast spray after planting. Use higher rates for broadcast applications. Ensure incorporation into the seed zone within 24 hours of applications with rain or overhead irrigation.  <u>Overhead irrigation.</u> Apply with irrigation water, ensuring uniform coverage of the soil and incorporation of product into the

Crop	Disease Suppressed	Rate (litre/ hectare)	Application Instructions
Crop Group 3: Bulb Vegetables  <b>Garlic, leek, onion, shallot</b>	Rhizoctonia damping-off and root rot ( <i>Rhizoctonia solani</i> )  Pink root ( <i>Phoma terrestris</i> )  Pythium root rot ( <i>Pythium</i> spp.)	2.7 - 14	seed zone.  <u>Surface drip irrigation.</u> Apply product with the first irrigation after planting. Instructions Continued from above.  <b>Transplant drench:</b>
Crop Group 4: Leafy vegetables  <b>Celery, lettuce, parsley, raddichio, rhubarb, spinach, Swiss chard</b>	Rhizoctonia damping-off and root rot ( <i>Rhizoctonia solani</i> )  Phytophthora root rot ( <i>Phytophthora erythroseptica</i> )  Pythium root rot ( <i>Pythium</i> spp.)	2.7 - 14	Apply finished spray mixture, at a rate to thoroughly soak the growing media through the root zone or as a drench or directed spray using sufficient water to soak the root zone.  <b>In-Furrow Applications:</b>  Apply as an in-furrow spray in the appropriate amount of water per acre for the crop at planting.
Crop Group 5: Brassica (Cole) leafy Vegetables  <b>Broccoli, brussels sprouts, cabbage, cauliflower, collards, kale, kohlrab, mustard greens</b>	Rhizoctonia damping-off and root rot ( <i>Rhizoctonia solani</i> )  Phytophthora root rot ( <i>Phytophthora erythroseptica</i> )  Pythium root rot ( <i>Pythium</i> spp.)	2.7 - 14	Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered.  <b>Shanked-In and Injected Applications:</b>  Product can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops.
Crop Group 6: Legume Vegetables  <b>Bean (<i>Lupinus</i> spp., <i>Phaseolus</i> spp., and <i>Vigna</i> spp.), chickpea, lentil, and pea (all types)</b>	Fusarium root rot ( <i>Fusarium</i> spp.)  Pythium root rot ( <i>Pythium</i> spp.)  Rhizoctonia root rot ( <i>Rhizoctonia solani</i> )	2.7 - 14	<b>Post planting applications at any crop stage:</b>  Apply the finished spray mixture to the soil as a drench, spray, or drip irrigation, directing it towards the base of the plant to optimize efficacy. When applying as a spray (e.g., via

Crop	Disease Suppressed	Rate (litre/ hectare)	Application Instructions
<p>Crop Group 8: Fruiting Vegetables</p> <p><b>Eggplant, ground cherry, okra, pepino, peppers (all varieties), tomatillo, tomatoes</b></p>	<p>Phytophthora blight (<i>Phytophthora capsici</i>)</p> <p>Pythium root rot (<i>Pythium</i> spp.)</p> <p>Rhizoctonia damping off and root rot (<i>Rhizoctonia solani</i>)</p> <p><u>Fusarium wilt, crown and root rot</u> (<i>Fusarium oxysporum lycopersici</i>)</p>	2.7 - 14	<p>hydraulic nozzles at low volumes), it is important to irrigate to move the material into the seed, root or transplant zone. Applications may be repeated at 21-28 day intervals to enhance preventive treatments. Shorter interval is recommended under moderate to high disease pressure.</p>
<p>Crop Group 9: Cucurbits</p> <p><b>Cantaloupe, Chinese waxgourd, cucumber, gherkin, edible gourd, melon, muskmelon, squash, pumpkin, and watermelon.</b></p>	<p>Rhizoctonia damping off and root rot (<i>Rhizoctonia solani</i>)</p> <p>Fusarium root rot (<i>Fusarium</i> spp.)</p> <p>Phytophthora blight (<i>Phytophthora capsici</i>, <i>Phytophthora richardiae</i>)</p> <p>Pythium root rot (<i>Pythium</i> spp.)</p>	2.7 - 14	
<p><b>Asparagus</b></p>	<p>Phytophthora root rot (<i>Phytophthora</i> spp.)</p>	2.7 – 14	
<p><b>Peanut</b></p>	<p>Rhizoctonia damping off and root rot (<i>Rhizoctonia solani</i>)</p>	2.7 – 14	



Crop	Disease Suppressed	Rate (litre/ hectare)	Application Instructions
Strawberry	Rhizoctonia damping off and root rot ( <i>Rhizoctonia solani</i> )	2.7 – 14	
Tobacco	Rhizoctonia damping off and root rot ( <i>Rhizoctonia solani</i> )  Pythium root rot ( <i>Pythium</i> spp.)	2.7 – 14	

### Corn (Field Corn, Sweet Corn, Popcorn, Seed Corn, Silage Corn)

Disease Suppressed	Rate (litre/ hectare)	Soil Application Methods and Instructions*
Rhizoctonia root rot ( <i>Rhizoctonia solani</i> ) Pythium root rot ( <i>Pythium</i> spp.) Fusarium root rot ( <i>Fusarium</i> spp.)	2.7 - 14	<ul style="list-style-type: none"> <li>➤ Soil surface applications</li> <li>➤ In-Furrow Applications</li> <li>➤ Shanked-In and Injected Applications</li> <li>➤ Post planting applications at any crop stage</li> </ul>
<p>Mix 2.7-14 L of Serenade SOIL in the appropriate amount of water per hectare. Use the higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place.</p> <p>*Refer to previous table for specific application instructions.</p>		

### Post Harvest Disease Protection

Post Harvest Crop	Disease	Rate (mL/tonne)	Application Instructions
Potatoes	Silver Scurf ( <i>Helminthosporium solani</i> )	85-175	<p>Potatoes: For post harvest application to aid in the control of silver scurf. Sanitation and other cultural practices should also be employed to aid in control and minimize the potential for disease.</p> <p><u>Conveyer Line Application:</u> Prepare the equivalent of 5 - 10 liters of Serenade SOIL in 100 liters of water. Spray 2 liters of the <b>Serenade SOIL/water</b> suspension per tonne of potatoes. Potatoes must rotate along the conveyer line into the storage area to ensure complete coverage. If needed, adjust rate of spray solution to ensure thorough coverage while maintaining recommended rate of Serenade SOIL per tonne of potatoes.</p>

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