

# Amplitude ST

Broad-spectrum biofungicide/bactericide for control or suppression of fungal and bacterial plant diseases

## Aqueous Suspension

**Active ingredient:** *Bacillus amyloliquefaciens* strain F727\* cells and spent fermentation media ..... 96.4%

**Other ingredients:** ..... 3.6%

**Total** ..... 100.0%

\*Contains a minimum of  $1 \times 10^9$  cfu/ml of product

EPA Reg. No.: 84059-28

## KEEP OUT OF REACH OF CHILDREN CAUTION

### FIRST AID

<b>IF SWALLOWED:</b>	Call poison control center 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 the poison control center or doctor. Do not give anything by mouth to an unconscious person.
<b>IF ON SKIN OR CLOTHING:</b>	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control center or doctor for treatment advice.
<b>IF INHALED:</b>	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 center or doctor for further treatment advice.
<b>IF IN EYES:</b>	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 center or doctor for treatment advice.

### HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or if going for treatment. You may also contact 1-800-222-1222 for emergency medical treatment information.



CAN BE USED IN ORGANIC PRODUCTION



For Organic Use

Manufactured by:

 **Marrone**  
Bio Innovations

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Lot No: Printed on Container

PN61710

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Not for sale or use after 18 months from the date of manufacture.

## PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS- CAUTION:** Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

**PERSONAL PROTECTIVE EQUIPMENT (PPE):** Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- shoes plus socks
- waterproof gloves

Mixers/loaders and applicators must wear a NIOSH-approved particulate filter with any N, R, P filter with NIOSH approval number prefix TC-84A; or a NIOSH- approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**ENGINEERING CONTROLS:** When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

**IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, including a spill or equipment break-down.

**USER SAFETY RECOMMENDATIONS:** Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**ENVIRONMENTAL HAZARDS:** For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high-water mark. Do not contaminate water when disposing of equipment wash waters or rinsate.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and the restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

For early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water wear:

- Coveralls
- Chemical resistant gloves (made of any waterproof material)
- Shoes plus socks

**EXCEPTION:** If the product is soil incorporated or soil injected, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of the product that are not within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses. Keep unprotected persons out of treatment area until seeds have dried or been packaged.

### PRODUCT INFORMATION

Amplitude ST is a biological fungicide containing *Bacillus amyloliquefaciens* strain F727. Amplitude ST Biofungicide can be used in multiple application methods to control or suppress certain soil-borne diseases. See specific information below for diseases controlled, use rates and application intervals.

### MODE OF ACTION

The active ingredient in Amplitude ST is a beneficial rhizobacterium that colonizes plant root hairs, leaves and other surfaces to prevent establishment of fungal and bacterial plant diseases. Amplitude ST has a protective effect because it inhibits spore germination and a curative effect because it inhibits mycelial growth and sporulation of the fungus on the leaf surface. However, optimum disease control is achieved when Amplitude ST is applied preventatively in a regularly scheduled protective spray program and used in rotation or tank mix program with other registered fungicides.

### MIXING AND APPLICATION INSTRUCTIONS

#### – SHAKE WELL PRIOR TO USE –

Amplitude ST is an aqueous suspension. Use 50-mesh nozzle screens or larger.

See **SEED TREATMENT** section for seed treatment use directions.

### SEED TREATMENT USE DIRECTIONS

Amplitude ST can be applied as a seed dressing for suppression of soil-borne diseases to improve early-season root growth. Amplitude ST may be applied as a water-based slurry with other registered seed treatment insecticides and fungicides through standard slurry- or mist-type commercial seed treatment equipment at the rate of 3 - 8 fluid ounces per 100 pounds of seed or as specified in the Application Rates For Selected Crops section.

**Mixing instructions:** Prepare no more mixture than is required for the immediate operation. Agitate the solution continuously during mixing and application. Mechanical mixing is recommended for proper mixing of Amplitude ST mixtures.

Amplitude ST alone: Add ½ of the required amount of water to the mix tank. With the agitator running, add the Amplitude ST to the mix tank. Continue agitation while adding the remainder of the water. Begin application of the solution after the Amplitude ST has completely dispersed into the mix water. Maintain agitation until all the mixture has been applied.

Amplitude ST+ tank-mixtures: Add ½ of the required amount of water to the mix tank. Start the agitation before adding any tank mix partners. In general, tank-mix partners should be added in this order: wettable powders, dry flowable formulations, liquid flowable formulations, and emulsifiable formulations such as Amplitude ST. Always allow each tank-mix partner to become completely dispersed before adding the next component. Maintain continuous agitation until all components have been dispersed and throughout the application process.

**Compatibility:** Do not combine Amplitude ST in the spray tank with pesticides, adjuvants, 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.

Amplitude ST is compatible with many commonly used pesticides, fertilizers, adjuvants, and surfactants, but has not been evaluated with all potential combinations. To ensure compatibility of the tank mix combinations, evaluate prior to use as follows: Using a suitable container, add the proportional amounts of product to water. Add wettable powders first, then water dispersible granules, then 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 mix on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of the application.

**Note:** When using Amplitude ST in tank-mixtures, all products in water soluble packaging should be added to the tank before any other tank-mix partner, including Amplitude ST. Allow the water-soluble packaging to completely dissolve and the product(s) to completely disperse before adding any other tank-mix partner to the tank.

If using Amplitude ST in a tank mixture with other seed treatment products, observe all directions for use, crops/sites, use rates, dilution ratios, precautions, and limitations which appear on the tank-mix partner label. No label dosage may be exceeded and the most restrictive label precautions and limitations must be followed. This product should not be mixed with any product which prohibits such mixing.

**For Commercial Seed Treatment:** This product does not contain dye. All seed treated commercially with this product must be colored with an EPA-approved dye or colorant of a suitable color to prevent accidental use as food for humans or feed for animals. The Federal Seed Act requires that bags containing seed treated with this product shall be labeled with the following information: "This seed has been treated with *Bacillus amyloliquefaciens* strain F727. Do not use for food, feed or oil purposes."

<b>Crop</b>	<b>Target Disease</b>	<b>Application Method</b>	<b>Product Use Rate per Application</b>	<b>Application Instructions</b>
<b>Cereal Grains*</b> Barley Buckwheat Grain Amaranth Milo Oat Millets Rice Rye Sorghum Triticale Wheat and other cereal grain crops	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	Seed Treatment	3 – 8 fl. oz. per 100 lbs. seed	For suppression of soil-borne diseases, apply this product as a seed treatment at the rate of 3 - 8 fl. oz per 100 lbs. seed.

\* - Not registered in California

<b>Crop</b>	<b>Target Disease</b>	<b>Application Method</b>	<b>Product Use Rate per Application</b>	<b>Application Instructions</b>
<b>Corn</b> Sweet Corn Field Corn Popcorn Silage Corn Seed Corn and other corn crops (includes crops grown for seed)	<i>Fusarium</i> spp.* <i>Phytophthora</i> spp.* <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.* <i>Verticillium</i> spp.*	Seed Treatment	3 - 8 fl. oz. per 100 lbs. seed	For suppression of soil-borne diseases, apply this product as a seed treatment at the rate of 3 - 8 fl. oz. per 100 lbs. seed.

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<b>Crop</b>	<b>Target Disease</b>	<b>Application Method</b>	<b>Product Use Rate per Application</b>	<b>Application Instructions</b>
<b>Cotton*</b>	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	Seed Treatment	3 - 8 fl. oz. per 100 lbs. seed	For suppression of soil borne diseases, apply this product as a seed treatment at the rate of 3 - 8 fl. oz per 100 lbs. seed.

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Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Legumes/Vegetables</b> (excluding soybeans and peanuts)* Chick Peas Dry Beans Garbanzo Beans Green Beans Lentils Lima Beans Peas Shell Beans Snap Beans Split Peas and other legume crops (including those grown for seed or oil production)	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	Seed Treatment	3 - 8 fl. oz. per 100 lbs. seed	For suppression of soil-borne diseases, apply this product as a seed treatment at the rate of 3 - 8 fl. oz. per 100 lbs. seed.

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Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Oil Seed Crops</b> (not including cotton, peanut, or soybean)* Canola Castor Flax Rapeseed Safflower Sesame Sunflower And other oilseed crops	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	Seed Treatment	3 - 8 fl. oz. per 100 lbs. seed	For suppression of soil-borne diseases, apply this product as a seed treatment at the rate of 3 - 8 fl. oz. per 100 lbs. seed.

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Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Root, Tuber and Corm Crops*</b> Potato (including those for seed production)	Clubroot ( <i>Plasmodiophora brassicae</i> ) Common Scab ( <i>Streptomyces scabies</i> ) Suppression only <i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp. Pink Rot ( <i>Phytophthora erythroseptica</i> )	Seed Piece Treatment	3.2 - 4.8 fl. oz per 100 lbs. of seed pieces	For seed piece applications for improved plant growth and suppression of soil-borne diseases, apply this product to seed pieces immediately prior to planting.

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Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Soybean*</b>	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	Seed Treatment	3 - 8 fl. oz. per 100 lbs. seed	For suppression of soil-borne diseases, apply this product as a seed treatment at the rate of 3 - 8 fl. oz. per 100 lbs. seed.

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Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Sugarcane*</b>	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	Seed Piece Treatment	3 - 8 fl. oz. per 100 lbs. seed-cane	For suppression of soil-borne diseases, apply this product as a seed treatment at the rate of 3 - 8 fl. oz. per 100 lbs. seed-cane.

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# STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

**Pesticide Storage:** Store in a cool, dry place. Avoid freezing.

**Pesticide Disposal:** To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

**Container Handling: For plastic containers less than or equal to 5 gallons: Nonrefillable container.** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple Rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. **For plastic containers greater than 5 gallons: Nonrefillable container.** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple Rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. **For plastic, refillable containers:** Refill this container with Amplitude ST only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat rinsing procedure two more times.

Marrone Bio Innovations is a member of the Ag Container Recycling Council. Visit <http://www.acrecycle.org/contact.html> for information on how to arrange pick-up of this empty pesticide container.



## WARRANTY

To the extent consistent with applicable law, the seller makes no warranty, expressed or implied, of merchantability, fitness or otherwise concerning use of this product. To the extent consistent with applicable law, the user assumes all risks of use, storage or handling that are not in accordance with the accompanying directions.

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