



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

June 13, 2022

Walter G. Talarek
Authorized Agent
Heads Up Plant Protectants, Inc.
c/o Walter G Talarek, PC
5153 Allison Marshall Drive
Warrenton, VA 20187-8980

Subject: Non-PRIA (Pesticide Registration Improvement Act) Labeling Amendment – Returns Old Application Rates, Adds Alternate Instructions for New Container Type, Makes Minor Editorial Changes, Revises Establishment Number
Product Name: Heads Up Plant Protectant
EPA Registration Number: 81853-1
Application Dates: 2/27/22 and 4/18/22
Action Case Code Numbers: 00342432 and 00355729

Dear Mr. Talarek:

The amended labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one (1) copy of the final printed labeling before you release this product for shipment with the new labeling. In accordance with 40 CFR § 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR § 152.3.

Should you wish to add/retain a reference to your company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the U.S. Environmental Protection Agency (EPA). If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains false

Page 2 of 2

EPA Reg. No. 81853-1

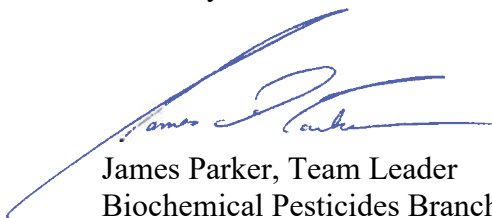
OPP Decision No. 00342432 and 00355729

or misleading statements or claims substantially differing from the EPA-approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6.

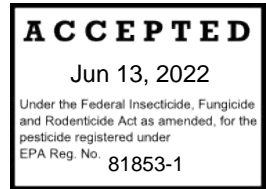
If you have any questions, please contact Chris Pfeifer of my team by phone at (703) 244-7991 or via email at pfeifer.chris@epa.gov.

Sincerely,



James Parker, Team Leader
Biochemical Pesticides Branch
Biopesticides and Pollution
Prevention Division (7511P)
Office of Pesticide Programs

Enclosure



{Text in brackets [] is optional and may or may not appear on the label.
Text in braces { } is for the reviewer and will not appear on the label.
Text in parentheses () will appear on the label.}

{MASTER LABEL}

HEADS UP® PLANT PROTECTANT

**Preplant seed and pretransplant seedling treatment
for the prevention of fungal and bacterial diseases of plants**

(including Sudden Death Syndrome (*Fusarium virguliforme*) on soybeans, Rhizoctonia root rot/damping off (*Rhizoctonia solani*) and Pythium (*Pythium spp.*) on soybeans and White Mold (*Sclerotinia sclerotiorum*) on soybeans and beans)

ACTIVE INGREDIENT

Extract of <i>Chenopodium quinoa</i> saponins (containing approximately equimolar amounts of triterpene bidesmosidic glycosides of oleanolic acid, hederagenin, and phytolaccagenic acid)	61.3%
OTHER INGREDIENTS	38.7%
TOTAL	100.0%

SUBLABEL A: Bulk Sales (20 kg. drum) for Custom Blending

SUBLABEL B: Non-Bulk Sales (58-gram package)

KEEP OUT OF REACH OF CHILDREN

CAUTION

NET WEIGHT:

EPA Registration Number 81853-1

EPA Establishment Number 81853-CAN-2

 FOR ORGANIC PRODUCTION



Heads Up Plant Protectants, Inc.
3002 Millar Ave. Saskatoon SK. Canada S7K 5X9
Telephone: 1-866-368-9306}

{Sublabel A: Bulk Sales (20 kg. drum) for Custom Blending}

HEADS UP® PLANT PROTECTANT

**Preplant seed and pretransplant seedling treatment
for the prevention of fungal and bacterial diseases of plants**

(including Sudden Death Syndrome (*Fusarium virguliforme*) on soybeans, Rhizoctonia root rot/damping off (*Rhizoctonia solani*) and Pythium (*Pythium spp.*) on soybeans and White Mold (*Sclerotinia sclerotiorum*) on soybeans and beans)

ACTIVE INGREDIENT

Extract of *Chenopodium quinoa*
saponins (containing approximately
equimolar amounts of triterpene bidesmosidic
glycosides of oleanolic acid, hederagenin,
and phytolaccagenic acid) 61.3%

OTHER INGREDIENTS 38.7%

TOTAL 100.0%

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID	
If in eyes	<ul style="list-style-type: none"> - Hold eye open and rinse slowly and gently with water for 15-20 minutes. - Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. - Call a poison control center or doctor for treatment advice.
If inhaled	<ul style="list-style-type: none"> - Move person to fresh air. - If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. - Call a poison control center or doctor for further treatment advice.
<p>HOT LINE NUMBER For 24-hour Medical Emergency Treatment Information 1-866-368-9306</p>	
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	

NET WEIGHT: 44.09 lbs. (20 kgs.)

EPA Registration Number 81853-1

EPA Establishment Number 81853-CAN-2

 FOR ORGANIC PRODUCTION



Heads Up Plant Protectants, Inc.
3002 Millar Ave. Saskatoon SK. Canada S7K 5X9
Telephone: 1-866-368-9306

[See [booklet] [back panel] [side panel] for [additional] [directions for use] [precautionary statements] [first aid] [and] [storage and disposal]]

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals. Caution. Causes moderate eye irritation. Harmful if inhaled. Avoid contact with eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment (PPE) Requirements: Applicators and handlers must wear: long-sleeved shirt and long pants, shoes, socks and waterproof gloves. For spray applications, wear protective eyewear. Follow manufacturer's instructions for maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

- Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- 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: 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 washwater or rinsate. This pesticide is toxic to fish and aquatic invertebrates. Do not use seed or seedlings treated with this product for animal feed. Do not use treated seed for food, feed or oil purposes. Treat only those seeds needed for immediate use and planting. Do not store excess treated seed beyond planting time. Dispose of excess treated seed by burial away from streams and bodies of water.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product through any type of irrigation system.

Use this product only in accordance with the directions for use on the label.

Use this product thoroughly dissolved and only when mixed with water. Read entire directions for use and conditions of sale and warranty before using, and if said terms are not acceptable, return the product unused in its unopened container immediately.

Seed treatment on agricultural establishments in hopper-box, or other seed treatment application at or immediately before planting is within the scope of WPS.

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. For any requirement specific to your State and Tribe, consult the State/Tribal agency responsible for pesticide regulation.

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 the Personal Protective Equipment (PPE), notification to workers, and restricted-entry interval. The requirements of 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 12 hours.

Exception: If the product is soil injected or soil incorporated, 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.

PPE required 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) is: coveralls, socks and shoes and waterproof gloves.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticide (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

There are no restrictions.

GENERAL INFORMATION

Heads Up® Plant Protectant is a preplant seed and pretransplant seedling treatment for the prevention of fungal and bacterial diseases of plants.

Heads Up® Plant Protectant is made from plant sources. Apply this product as directed to seeds, roots of transplants, or sprayed on tomato seedlings in trays, as part of a general disease management program.

TREAT ONLY HEALTHY VIGOROUS SEED OR SEEDLINGS: Application of **Heads Up® Plant Protectant** to damaged or diseased seed or seed of low quality or vigor will not improve seed performance. Always apply to healthy seed or seedlings that are vigorous and actively growing under stress-free conditions.

MIXING DIRECTIONS

Apply dissolved into solution with water, and thoroughly coat the surface of the seed, roots or leaves. Do not apply in packaged powder form. Ensure that the product is thoroughly dissolved in solution and the solution agitated before application. Return any unused powder to original container.

Clean application equipment. Prepare only the amount of solution needed to be applied to treat the seeds. Once in solution the product will be subject to bacterial degradation. Mix only enough product that is required for use. Use the solution IMMEDIATELY AFTER COMPLETE MIXING and no longer than 4 to 6 hours after mixing. Unused solution should be disposed according to the Storage and Disposal section of this label.

PREPLANT SEED TREATMENT

SITES

Soybeans, Beans, Corn, Chickpeas, Peas, Wheat and Potatoes

APPLICATION RATES

Wheat, Peas, Beans, and Soybean Seeds

Mix at a ratio of 0.035 oz. (1 gram) of **Heads Up® Plant Protectant** per 34 ounces (1 liter) of water. 34 ounces (one liter) of this solution will treat 360 lbs. (163.3 kgs.) of legume or cereal seed.

Corn Seeds, Chickpea, and Soybeans**

Mix at a ratio of 0.035 oz. (1 gram) of **Heads Up® Plant Protectant** per 34 ounces (1 liter) of water. 34 ounces (one liter) of this solution will treat 180 lbs. (81.6 kgs.) to 360 lbs. (163.3 kgs.) of corn seed.

Seed Potatoes (as cut or whole tubers used for planting purposes)

Mix at a ratio of 0.035 oz. (1 gram) of **Heads Up® Plant Protectant** per 34 ounces (1 liter) of water. 34 ounces (one liter) of this solution will treat 220 - 582 lbs. (100 – 264 kgs.) of potato seeds.

APPLICATION

Seeds must be prepared and ready for seeding. The object is to achieve a wet shiny appearance to the seed. This will dry off or be absorbed by the seed; however, the treatment will remain in effect. Treat the seeds by dipping, spraying or dribbling the solution into a rotating auger conveyor or some other approved seed treatment device. Spray applications to seeds within an enclosed spray booth or other enclosed spray device are also acceptable providing thorough coverage is achieved.

For seed potatoes, whether fresh cut or suberized, the **Head Up®** solution **must be applied to germinating seed potatoes**, as indicated by obvious sprouting activity coming from the potato eyes. This sprouting activity can be from peeking to full spout length, but before green leaves appear.

Proper calibration and operation of application equipment is essential. Treat only the seed that you intend to plant and ensure all treated seed is used for planting purposes.

APPLICATION WITH OTHER SEED TREATMENTS

When Heads Up® Plant Protectant is applied in combination with other commercial seed treatments, the following mixing and handling guidelines should be followed:

To Make One Quart of Heads Up® Liquid Solution Concentrate

-A slurry method should be used for applying Heads Up® to seed.

-Use a minimum of 5 to 8 ounces of total volume/cwt (including other commercial seed treatments).

1/ Choose a suitable 1 quart container that will allow the vigorous shaking or stirring of the solution.

2/ Empty 58 grams into a ½ (half) quart of water (non-chlorinated).

3/ Shake ~~or stir~~ this mixture until all the product is dissolved, usually in a few minutes.

4/ ~~To up~~ Top up the container with water to make ONE FULL Quart (32 oz.). Shake well.

Liquid Product Application Rates and Tank Mixes with aqueous (water-based) products*

Wheat, Peas, Beans, Soybeans:

One ounce (1 oz.) will treat up to 6.25 cwt (625 lbs. or 12.5 units) of seed

When applied with an additional liquid carrier, such as water or inoculant or other fungicide/insecticide product: 1 quart (32 oz.) will treat up to 20,000 lbs. of seed or 400 units.

Corn, Chickpea and Soybeans:**

One ounce (1 oz.) will treat up to 3.125 cwt (312.5 lbs.) of corn seed.

When applied with an additional liquid carrier: 1 quart (32 oz.) will treat up to 10,000 lbs. of seed or 200 units.

***When tank mixing with aqueous, water-based products or inoculants, a pre-slurry, concentrated solution may be made using water as described above, or the aqueous (water-based) component of the tank mix may be used instead of water.**

NOTICE: Importance of Additional Carrier Solution

Heads Up® must be applied in enough total liquid to fully wet the treated seed.

This product is a non-microbial chemical solution and must be applied with enough additional carrier (either water/inoculant/ or combination fungicide) which will fully wet the seed and allow the solution to penetrate and reside in the seed coat until germination occurs. Be sure to use the range of 5 to 8 ounces total solution/cwt.

Stability

Once Heads Up® is applied to the seed, the product is totally stable.

There are no restrictions on the number of days prior to planting when the Heads Up® ~~product~~ treated seed can be applied or requirements for special storage or treated seed.

For high Pythium spp. Pressure, use the **high rate at 1 oz / 3.125 cwt of seed.

PRETRANSPLANT SEEDLING ROOT TREATMENT

SITES

Tomato seedlings

APPLICATION RATES

Carefully read and understand this label for use information and restrictions.

Mix at a ratio of 0.035 oz. (1 gram) of **Heads Up® Plant Protectant** per 34 ounces (1 liter) of water.

Root dip or spray bare roots of transplants until solution is exhausted.

APPLICATION

FOR ROOT AREAS ONLY.

For tomato seedlings also to receive foliar treatment, see directions below.

Plants should be actively growing and free of stress conditions.

Seedlings must be prepared and ready for transplanting. Treat roots by dipping the exposed root mass completely and holding submersed for sixty (60) seconds in the **Heads Up®** solution. It is not necessary to completely remove all adhering soil from the root mass; however, for best results, gently shake roots to remove excess adhering soil. When seedlings are started in flats, dip and hold the root area of the whole plant in the flat for 60 seconds in a shallow tray of **Heads Up®** solution. The tray must be deep enough to immerse the plant's roots. Individual seedlings may be treated by removing them from the starter soil and shaking off excess soil, placing them in a container holding the **root mass area only** submersed in **Heads Up®** solution for 60 seconds, and then transplanted. Treat individual seedlings by spraying the exposed root mass until they are completely wet with the **Heads Up®** solution. After root treatment, the individual tomato seedlings may be planted either in flats before being taken to the field or may be taken directly to the field, but the seedlings should be planted immediately. Seedlings planted in flats may be root treated up

to four days prior to transplanting. Treat only the seedlings that you wish to plant and ensure all treated seedlings are used for planting purposes.

Tomato seedlings may be both root treated and foliar treated. Seedlings may be foliar treated the same day that they are root treated.

PRETRANSPLANT SEEDLING FOLIAR TREATMENT

SITES

Apply only one foliar application of this product to tomato seedlings, up to 6 inches in height, at the time of transplanting or up to 4 days prior to transplanting. Do not apply the product after transplant or when blooms or fruits are present on the plant. No other foliage treatments of Heads Up® solution are permitted.

APPLICATION RATES

Mix at a ratio of 0.035 oz. (1 gram) of **Heads Up® Plant Protectant** per 34 ounces (1 liter) of water. Apply 0.17 – 0.51 ounces (5 – 15 milliliters) of solution per square foot of started tomato seedlings in trays or until foliage is completely wet.

APPLICATION

Seedlings must be prepared and ready for planting. Spray one application only to immature seedlings up to 4 days before transplanting. Spray seedlings until foliage is completely wet. Apply indoors in greenhouses or other enclosed structures or outdoors in enclosed spray booths or other enclosed spray devices.

Tomato seedlings may be both root treated and foliar treated. Seedlings may be foliar treated the same day that they are root treated. For tomato seedlings also to receive root dip treatment, see directions above.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in original container, tightly sealed, in a dry location.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Disposal: Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available, or dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

BATCH CODE:

CONDITIONS OF SALE AND WARRANTY

Seller's guarantee shall be limited to the contents and merchantability of the product and the terms of the label, and subject thereto. To the fullest extent permitted by law, the buyer assumes all risks to persons or property arising out of use or handling and accepts the product on these conditions. Because the time, place, rate of application and other conditions of use are beyond the Seller's control, Seller's liability from storage, handling and use of this product is limited to replacement of the product or a refund of the purchase price. **Heads Up® Plant Protectant** is applicable as a disease preventive only. The directions for use of this product are based on test plots, greenhouse trials and the opinions of experts. They are believed to be reliable and correct; however, it is not possible to eliminate all possible detrimental effects associated with use, whether they are crop injury, ineffectiveness or other unintended consequences which may occur as a result of weather or other materials, or the manner of use or application, beyond the control of the manufacturer or the seller. To the fullest extent permitted by law, the buyer shall assume all risks.

[The following optional information may or may not be placed on the product's label.

Heads Up® is a trademark of Heads Up Plant Protectants, Inc.

{SUBLABEL B: Non-Bulk Sales (58-gram package)}

HEADS UP® PLANT PROTECTANT

**Preplant seed and pretransplant seedling treatment
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(including Sudden Death Syndrome (*Fusarium virguliforme*) on soybeans, Rhizoctonia root rot/damping off (*Rhizoctonia solani*) and Pythium (*Pythium spp.*) on soybeans and White Mold (*Sclerotinia sclerotiorum*) on soybeans and beans)

ACTIVE INGREDIENT

Extract of <i>Chenopodium quinoa</i> saponins (containing approximately equimolar amounts of triterpene bidesmosidic glycosides of oleanolic acid, hederagenin, and phytolaccagenic acid)	61.3%
OTHER INGREDIENTS	38.7%
TOTAL	100.0%

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID	
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 five minutes, then continue rinsing eye. - Call a poison control center 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 mouth-to-mouth if possible. - Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER For 24-hour Medical Emergency Treatment Information 1-866-368-9306	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	

NET WEIGHT: 0.13 lb. (58 grams)

EPA Registration Number 81853-1

EPA Establishment Number 81853-CAN-2





Heads Up Plant Protectants, Inc.
3002 Millar Ave. Saskatoon SK. Canada S7K 5X9
Telephone: 1-866-368-9306

[See [booklet] [back panel] [side panel] for [additional] [directions for use] [precautionary statements] [first aid] [and] [storage and disposal]]

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals. Caution. Causes moderate eye irritation. Harmful if inhaled. Avoid contact with eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment (PPE) Requirements: Applicators and handlers must wear: long-sleeved shirt and long pants, shoes, socks and waterproof gloves. For spray applications, wear protective eyewear. Follow manufacturer's instructions for maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

- Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- 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: 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 washwater or rinsate. This pesticide is toxic to fish and aquatic invertebrates. Do not use seed or seedlings treated with this product for animal feed. Do not use treated seed for food, feed or oil purposes. Treat only those seeds needed for immediate use and planting. Do not store excess treated seed beyond planting time. Dispose of excess treated seed by burial away from streams and bodies of water.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product through any type of irrigation system.

Use this product only in accordance with the directions for use on the label.

Use this product thoroughly dissolved and only when mixed with water. Read entire directions for use and conditions of sale and warranty before using, and if said terms are not acceptable, return the product unused in its unopened container immediately.

Seed treatment on agricultural establishments in hopper-box, or other seed treatment application at or immediately before planting is within the scope of WPS.

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. For any requirement specific to your State and Tribe, consult the State/Tribal agency responsible for pesticide regulation.

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 the Personal Protective Equipment (PPE), notification to workers, and restricted-entry interval. The requirements of 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 12 hours.

Exception: If the product is soil injected or soil incorporated, 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.

PPE required 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) is: coveralls, socks and shoes and waterproof gloves.

NON-AGRICULTURAL USE REQUIREMENTS

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There are no restrictions.

GENERAL INFORMATION

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Heads Up® Plant Protectant is made from plant sources. Apply this product as directed to seeds, roots of transplants, or sprayed on tomato seedlings in trays, as part of a general disease management program.

TREAT ONLY HEALTHY VIGOROUS SEED OR SEEDLINGS: Application of **Heads Up® Plant Protectant** to damaged or diseased seed or seed of low quality or vigor will not improve seed performance. Always apply to healthy seed or seedlings that are vigorous and actively growing under stress-free conditions.

MIXING DIRECTIONS

Apply dissolved into solution with water, and thoroughly coat the surface of the seed, roots or leaves. Do not apply in packaged powder form. Ensure that the product is thoroughly dissolved in solution and the solution agitated before application. Return any unused powder to original container.

Clean application equipment. Prepare only the amount of solution needed to be applied to treat the seeds. Once in solution the product will be subject to bacterial degradation. Mix only enough product that is

required for use. Use the solution IMMEDIATELY AFTER COMPLETE MIXING and no longer than 4 to 6 hours after mixing. Unused solution should be disposed according to the Storage and Disposal section of this label.

PREPLANT SEED TREATMENT

APPLICATION WITH OTHER SEED TREATMENTS

SITES

Soybeans, Beans, Corn, Chickpeas, Peas and Wheat

When Heads Up® Plant Protectant will be applied in combination with other seed treatments.

Follow the pre-slurry instructions below to make 100-ounce solution of Heads Up® ready to apply liquid concentrate for use on soybeans, beans, corn, peas, wheat and chickpeas.

To make a 100-Ounce Solution of Heads Up® ready to apply liquid concentrate

Pre-Slurry Method

1. Choose a suitable clean container that hold at least one gallon (128 ounces) of liquid and will allow for vigorous shaking or stirring of solution
2. Empty 58 grams of Heads Up® into approximately 50 ounces of water (non-chlorinated preferred)
3. Shake or stir this mixture until all the product is dissolved, usually in a few minutes
4. Top up the container with water to make 100-ounce solution. Shake well.

In this method, the 100-ounce solution of Heads Up® ready to apply liquid concentrate will carry to treat 400 units (20,000 lbs. of seed) at a rate of 0.5 oz per 100 lbs. of seed for soybeans, beans, peas and wheat. For corn, chickpeas, and soybeans** 100-ounces solution of Heads Up® ready to apply liquid concentrate will treat 200 units (10,000 lbs. of seed). Adding Heads Up® to a tank with agitation at the treater is recommended. Pre-slurry can be mixed with other products (seed treatments or inoculants) or applied in a separate tank with pump to treater. Use the following chart to verify use rates per CWT. (100 lbs. of seed.)

Use the solution IMMEDIATELY AFTER COMPLETE MIXING and no longer than 4 to 6 hours after mixing. If kept refrigerated the unused solution can be stored and used within 7-10 days. Always shake solution well before use.

When applying Heads Up® Plant Protectant alone

1. Follow pre-slurry instructions (above) to make 100-ounce solution of Heads Up® ready to apply liquid concentrate
2. For soybean, beans, peas and wheat 100-ounce solution must be further diluted with water to achieve thorough liquid coverage of seed ensuring ~~and~~ a final application rate of 5-8 fl. oz / CWT. (100 lbs. of seed).

For corn, chickpeas and soybeans, 100-ounce solution must be further diluted with water to achieve thorough liquid coverage of seed and ensuring a final application rate of 5-8 fl. oz / CWT (100 lbs. of seed).**

****For high *Pythium spp.* pressure, use the high rate at 1 oz / 100 lbs. of seed. See chart below.**

Note* For application/mixing instructions for potato and tomato root tip and foliar treatments ~~follow~~ refer to instructions in their respective sections on the following pages.

Stability on seed

Once Heads Up® is applied to the seed, the product is totally stable. There are no restrictions on the number of days prior to planting when the Heads Up® product treated seed can be applied or requirements for special storage or treated seed.

FURTHER APPLICATION INSTRUCTIONS

Seeds must be prepared and ready for seeding. The object is to achieve a wet shiny appearance to the seed. This will dry off or be absorbed by the seed; however, the treatment will remain in effect. Treat the seeds by dipping, spraying or dribbling the solution into a rotating auger conveyor or some other approved seed treatment device. Spray applications to seeds within an enclosed spray booth or other enclosed spray device are also acceptable providing thorough coverage is achieved.

Proper calibration and operation of application equipment is essential. Treat only the seed that you intend to plant and ensure all treated seed is used for planting purposes.

Crop	Target Disease	Product Use Rate fl. oz./CWT (100 lbs of seed)	Remarks/Restrictions
Soybean	Rhizoctonia Root Rot / Damping off (Rhizoctonia solani); White Mold (Sclerotinia sclerotiorum); Sudden Death Syndrome (Fusarium virguliforme);	0.5 oz	*Total volume of all liquid / all products being applied must achieve 5- 8 fl. oz / 100 lbs. of seed
Soybean**	Pythium spp.	0.5 oz – 1.0 oz	*Total volume of all liquid / all products being applied must achieve 5- 8 fl. oz / 100 lbs. of seed **Under high Pythium spp. pressure use the high rate (1.0 fl. oz. / 100 lbs of seed)
Beans	Rhizoctonia Root Rot / Damping off (Rhizoctonia solani); White Mold (Sclerotinia sclerotiorum);	0.5 oz	*Total volume of all liquid / all products being applied must achieve 5- 8 fl. oz / 100 lbs. of seed

Corn (Includes Field Corn, Sweet Corn)	Common rust – Puccinia sorghi	1.0 oz	*Total volume of all liquid / all products being applied must achieve 5- 8 fl. oz / 100 lbs. of seed
Chickpeas	Seedling diseases caused by Fusarium and Rhizoctonia spp.	1.0 oz	*Total volume of all liquid / all products being applied must achieve 5- 8 fl. oz / 100 lbs. of seed
Peas	Seedling diseases caused by Fusarium and Rhizoctonia spp.	0.5 oz	*Total volume of all liquid / all products being applied must achieve 5- 8 fl. oz / 100 lbs. of seed
Wheat	seedling diseases caused by Fusarium and Rhizoctonia spp.	0.5 oz	*Total volume of all liquid / all products being applied must achieve 5- 8 fl. oz / 100 lbs. of seed
Potato (cut or whole tubers used for planting purposes)	Rhizoctonia Canker and Black Scurf (Rhizoctonia solani); Brown Spot (Alternaria alternata)	*See Remarks	*see instructions on following page
Tomato	Early Blight; Bacterial Spot; White Mold (Sclerotinia sclerotiorum);	*pretransplant seedling root and foliar treatment only	*See instructions on following page

PREPLANT SEED TREATMENT

Application Rates – for 100-ounce solution of Heads Up® ready to apply liquid concentrate

PREPLANT SEED TREATMENT

SITES

Potatoes

Seed Potatoes (as cut or whole germinating tubers used for planting purposes)

Mix at a ratio of 0.035 oz. (1 gram) of **Heads Up® Plant Protectant** per 34 ounces (1 liter) of water. 34 ounces (one liter) of this solution will treat 220 - 582 lbs. (100 – 264 kgs.) of potato seeds. This is an application rate of 5.84 to 15.45 fl. oz. solution/CWT seed.

APPLICATION

Seeds must be prepared and ready for seeding. The object is to achieve a wet shiny appearance to the eyes of the seed. This will dry off or be absorbed by the seed; however, the treatment will remain in effect. Treat the seeds by dipping, spraying or dribbling the solution into a rotating auger conveyor or some other approved seed treatment device. Spray applications to seeds within an enclosed spray booth or other enclosed spray device are also acceptable providing thorough coverage is achieved.

For seed potatoes, whether fresh cut or suberized, the **Head Up®** solution **must be applied to germinating seed potatoes**, as indicated by obvious sprouting activity coming from the potato eyes. This sprouting activity can be from peeking to full spout length, but before green leaves appear.

Proper calibration and operation of application equipment is essential. Treat only the seed that you intend to plant and ensure all treated seed is used for planting purposes.

PRETRANSPLANT SEEDLING ROOT TREATMENT

SITES

Tomato seedlings

APPLICATION RATES

Carefully read and understand this label for use information and restrictions.

Mix at a ratio of 0.035 oz. (1 gram) of **Heads Up® Plant Protectant** per 34 ounces (1 liter) of water.

Root dip or spray bare roots of transplants until solution is exhausted.

APPLICATION

FOR ROOT AREAS ONLY.

For tomato seedlings also to receive foliar treatment, see directions below.

Plants should be actively growing and free of stress conditions.

Seedlings must be prepared and ready for transplanting. Treat roots by dipping the exposed root mass completely and holding submersed for sixty (60) seconds in the **Heads Up®** solution. It is not necessary to completely remove all adhering soil from the root mass; however, for best results, gently shake roots to remove excess adhering soil. When seedlings are started in flats, dip and hold the root area of the whole plant in the flat for 60 seconds in a shallow tray of **Heads Up®** solution. The tray must be deep enough to immerse the plant's roots. Individual seedlings may be treated by removing them from the starter soil and shaking off excess soil, placing them in a container holding the **root mass area only** submersed in **Heads Up®** solution for 60 seconds, and then transplanted. Treat individual seedlings by spraying the exposed root mass until they are completely wet with the **Heads Up®** solution. After root treatment, the individual tomato seedlings may be planted either in flats before being taken to the field or may be taken directly to the field, but the seedlings should be planted immediately. Seedlings planted in flats may be root treated up to four days prior to transplanting. Treat only the seedlings that you wish to plant and ensure all treated seedlings are used for planting purposes.

Tomato seedlings may be both root treated and foliar treated. Seedlings may be foliar treated the same day that they are root treated.

PRETRANSPLANT SEEDLING FOLIAR TREATMENT

SITES

Apply only one foliar application of this product to tomato seedlings, up to 6 inches in height, at the time of transplanting or up to 4 days prior to transplanting. Do not apply the product after transplant or when blooms or fruits are present on the plant. No other foliage treatments of **Heads Up®** solution are permitted.

APPLICATION RATES

Mix at a ratio of 0.035 oz. (1 gram) of **Heads Up® Plant Protectant** per 34 ounces (1 liter) of water.

Apply 0.17 – 0.51 ounces (5 – 15 milliliters) of solution per square foot of started tomato seedlings in trays or until foliage is completely wet.

APPLICATION

Seedlings must be prepared and ready for planting. Spray one application only to immature seedlings up to 4 days before transplanting. Spray seedlings until foliage is completely wet. Apply indoors in greenhouses or other enclosed structures or outdoors in enclosed spray booths or other enclosed spray devices.

Tomato seedlings may be both root treated and foliar treated. Seedlings may be foliar treated the same day that they are root treated. For tomato seedlings also to receive root dip treatment, see directions above.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in original container, tightly sealed, in a dry location.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Disposal: Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available, or dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

BATCH CODE:

CONDITIONS OF SALE AND WARRANTY

Seller's guarantee shall be limited to the contents and merchantability of the product and the terms of the label, and subject thereto. To the fullest extent permitted by law, the buyer assumes all risks to persons or property arising out of use or handling and accepts the product on these conditions. Because the time, place, rate of application and other conditions of use are beyond the Seller's control, Seller's liability from storage, handling and use of this product is limited to replacement of the product or a refund of the purchase price. **Heads Up® Plant Protectant** is applicable as a disease preventive only. The directions for use of this product are based on test plots, greenhouse trials and the opinions of experts. They are believed to be reliable and correct; however, it is not possible to eliminate all possible detrimental effects associated with use, whether they are crop injury, ineffectiveness or other unintended consequences which may occur as a result of weather or other materials, or the manner of use or application, beyond the control of the manufacturer or the seller. To the fullest extent permitted by law, the buyer shall assume all risks.

{The following optional information may or may not be placed on the product's label.}

[**Heads Up®** is a trademark of Heads Up Plant Protectants, Inc.]