

Specimen Label

GROUP

U15

FUNGICIDE



Lumisena®

FUNGICIDE SEED TREATMENT

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A fungicide seed treatment product for early season protection against Oomycete pathogens in soybeans and sunflowers.

Lumisena™ is a flowable suspension

Active Ingredient	By Weight
Oxathiapiprolin.....	18.7%
Other Ingredients.....	81.3%
Total	100.0%

Contains 1.67 pounds of oxathiapiprolin per gallon of product.

EPA Reg. No. 352-920

KEEP OUT OF REACH OF CHILDREN

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers, loaders, applicators, and other handlers must wear:

- Long-sleeved shirt
- Long pants
- Shoes and socks

User Safety Requirements

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, 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 the gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates. 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 washwater or rinsate.

DIRECTIONS FOR USE

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

Lumisena fungicide seed treatment (referred to below as Lumisena) must be used only in accordance with instructions on this label, in separately issued labeling or exemptions under FIFRA (Supplemental labels, Special Local Needs Registrations, FIFRA Section 18), or as otherwise permitted by FIFRA. Always read the entire label including the Limitation of Warranty and Liability.

Lumisena is a fungicide seed treatment for soybean and sunflower seed for use by a Corteva-authorized seed company or a commercial seed treatment

facility. Do not use on agricultural establishments in hopper-box, planter box, slurry box, or other seed treatment applications at time of planting.

Do not use treated seed for food or animal feed, mix with food or animal feed, or process for oil.

This product contains no colorant. An EPA-approved colorant must be added when this product is applied to seed. Seed must be conspicuously colored at the time of treatment.

When applied according to this label, Lumisena will provide early season protection against selected Oomycete pathogens including Phytophthora causing seed rot, root and stem rot, and/or damping off in soybeans and *Plasmopara halstedii* causing downy mildew in sunflowers. Use tank mixtures with other appropriate fungicides to control these diseases or to otherwise extend the control spectrum (see Tank Mixing). Consult your local Corteva company representative or agricultural advisor for guidance on predicted disease pressure based on historical data for these diseases in your area.

Lumisena treated seed may be replanted immediately if an emergency replanting is required due to an early season crop failure.

Treating significantly damaged seed or seed that is low vigor or overall poor quality may result in reduced germination, seedling vigor and plant stand. Before treating an entire seed lot with the proposed seed treatment, treat a small portion of the seed lot and conduct subsequent germination tests. Corteva Agriscience makes no guarantee regarding the germination of damaged or carry-over treated seed, since seed quality and storage conditions are beyond the control of Corteva Agriscience.

PRODUCT INFORMATION

Lumisena fungicide is a flowable suspension containing oxathiapiprolin and is recommended for use as a seed treatment product, for early season protection from selected Oomycete pathogens including Phytophthora causing seed rot, root and stem rot and/or damping off in soybeans and *Plasmopara halstedii* causing downy mildew in sunflowers.

Lumisena has preventive, residual, curative, eradicated, and antispore activity against selective Oomycete pathogens listed in this label.

Mode of Action

Oxathiapiprolin, the active ingredient in Lumisena, acts as an oxysterol binding protein (OSBP) modulator in fungal cells and protects against sensitive Oomycete diseases by inhibiting OSBP.

Cultivar/Varietal Seed Safety

Not all varieties, cultivars or hybrids of crops have been individually tested for seed safety. It is not possible to evaluate all applications of Lumisena for seed safety on all varieties, cultivars, or hybrids of those crops, or under all environmental conditions and growing circumstances. To test for seed safety, apply the product in accordance with the label instructions to a small amount of target seed and confirm acceptable germination to ensure that a phytotoxic response will not occur, especially where the application is a new use of the product by the applicator.

Resistance

Lumisena fungicide contains the active ingredient oxathiapiprolin, which is novel and currently assigned the code U15 based on the mode of action classification system of the Fungicide Resistance Action Committee (FRAC). Oxathiapiprolin inhibits the oxysterol-binding protein (OSBP).

A disease management program that includes rotation and/or mixing with fungicides that have a different mode of action is essential to reduce the risk of fungicide resistance development.

RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, please note that Lumisena contains the active ingredient oxathiapiprolin which is novel and is currently assigned the Code U15 by the Fungicide Resistance Action Committee (FRAC). Oxathiapiprolin inhibits the oxysterol-binding protein (OSBP). A disease management program that includes rotation and/or mixing with fungicides that have a different mode of action is essential to reduce the risk of fungicide resistance development. Any pathogen population may contain individuals naturally resistant to Lumisena and other OSBP-inhibiting fungicide. The resistant individuals may dominate the pathogen population if these groups of fungicides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

- **GENERAL GUIDANCE:** Seed treatment applications of oxathiapiprolin in mixture with a different mode of action fungicide active against the target oomycete disease are encouraged whenever feasible.
- No foliar or soil fungicide application of an OSBP-inhibiting fungicide should be made following a seed treatment application of oxathiapiprolin or other OSBP-inhibiting fungicides.
- For resistance management, do not make more than one seed treatment application of oxathiapiprolin per year on the same acreage, targeting the same pathogen, except in the case of crop failure.

To delay fungicide resistance:

- Where possible, rotate the use of Lumisena with fungicides with a different FRAC group that control the same pathogen.

- Use tank mixtures with fungicides from a different FRAC group when such use is permitted.
- Fungicide use should be based on an IPM program that includes scouting, record keeping and considers cultural, biological and other chemical control practices.
- Monitor treated pathogen populations for resistance development.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.

APPLICATION INFORMATION

Mixing Procedures

Lumisena is for use in commercial seed treaters only, operating standard, calibrated seed treatment equipment. Do not use this product on agricultural establishments in hopper-box, planter-box, slurry-box, or other seed treatment applications at or immediately before planting. Treatment equipment must be clean and free of previous pesticide deposits before applying Lumisena. Before transferring Lumisena from its container, thoroughly mix the contents to ensure the product is homogenous. Add Lumisena directly to the mixing tank. Mix thoroughly the recommended amount of Lumisena with the required amount of water. If available on the application equipment, Lumisena can be applied directly through dedicated application modules in place of a mixing tank.

Add an EPA approved colorant to treat the seeds per 40 CFR 153.155(b) (1) during the seed treatment process. Ensure that all treated seeds are dyed an unnatural color.

Mixing Tank and Equipment Cleanout

Prior to application, start with clean, well maintained application equipment. Immediately following application, thoroughly clean all mixing equipment to reduce the risk of forming hardened deposits, which might become difficult to remove.

Lumisena Use Rate for Soybeans and Sunflowers

Crop	Target diseases (pathogen)	Rate mg ai / seed	Rate lb a.i./ 100 lbs seed	Rate fl. oz/seed unit	Rate fl. oz/ 100 lbs seed	Specific Directions
Soybeans	Phytophthora seed, root and stem rot; damping off (<i>Phytophthora sojae</i>)	0.012 to 0.024	0.0074 to 0.0148	0.284 to 0.568 fl. oz/140,000 seeds (based on an average of 2,800 seeds per pound)	0.568 to 1.136	Use the higher rate in areas with a history of high disease pressure, or where extended early season protection is required and/or field conditions favor development of seed and soil-borne pathogens.
Sunflower	Downy mildew (<i>Plasmopara halstedii</i>)	0.0094 to 0.0188	0.0135 to 0.0269	0.318 to 0.636 fl. oz /200,000 seeds (based on an average of 6,500 seeds per pound)	1.033 to 2.066	Use the higher rate in areas with a history of high disease pressure, or where extended early season protection is required and/or field conditions favor development of seed and soil-borne pathogens.

CROP ROTATION

The following list of crops and crop groups may be planted immediately after harvest of crops grown from seed treated with Lumisena, or following the failure of a crop grown from seed treated with Lumisena: tuberous and corn vegetables (Subgroup 1C); bulb vegetables (Group 3-07); leafy greens (Subgroup 4A); brassica, head and stem (Subgroup 5A); peas, succulent shelled; peas, edible-podded; fruiting vegetables (Group 8-10); cucurbit vegetables (Group 9); strawberries; herbs and spices (Group 19); oilseed (Group 20); ginseng; and tobacco.

The following crops and crop groups may be planted immediately after harvest of crops grown from seed treated with Lumisena, or in the case of crop failure, 30 days after the planting of seed treated with Lumisena: cereals (Groups 15 and 16) and grass animal feeds (Group 17).

All other crops cannot be planted until 180 days after the planting of seed treated with Lumisena.

SEED STORAGE

Field and laboratory tests have demonstrated that an application of Lumisena to soybeans or sunflowers will not negatively affect germination. Due to seed quality and seed storage conditions beyond the control of Corteva Agriscience, no claims are made to guarantee the germination of carry-over seed.

Drain mixing equipment. Thoroughly rinse mixing equipment and flush with clean water.

Clean all other associated application equipment. Take all necessary safety precautions when cleaning equipment. Do not clean near wells, water sources, or desirable vegetation. Dispose of waste rinse water in accordance with local regulations.

Tank Mixtures

Lumisena may be applied as a water-based slurry with other registered seed treatment products including fungicides, insecticides, nematicides or micronutrients. Potential mixing partners should be tested for physical compatibility with Lumisena including added colorants or polymers before mixing in a large tank for seed treatment. Follow the most restrictive labeling limitations and precautions of all products used in mixtures. Do not mix this product with any product that prohibits such mixing.

Use Rate

For protection against seed-borne and soil-borne *Phytophthora sojae*, that cause soybean seed rot, root and stem rot or damping off, apply 0.012 to 0.024 mg ai/seed following the specific instructions in the Soybean and Sunflower table below. Use the higher rate in areas with a history of high disease pressure, or where extended early-season protection is required and/or field conditions favor seed and soil-borne pathogens.

For protection against soil-borne *Plasmopara halstedii*, that cause sunflower downy mildew, apply 0.0094 to 0.0188 mg ai/seed following the specific instructions in the Soybean and Sunflower table below. Use the higher rate in areas with a history of high disease pressure, or where extended early-season protection is required and/or field conditions favor seed and soil-borne pathogens.

COMMERCIAL SEED BAG LABELING

In accordance with the Federal Seed Act and the US Environmental Protection Agency recommendations, seed commercially treated with Lumisena must include the following on its labeling:

- Treated seed. Do not use for food, feed or oil purposes.
- This seed has been treated with Lumisena fungicide which contains oxathiapiprolin.
- Store away from food or feed.
- Dispose of all obsolete treated seed away from bodies of water and according to federal and state regulations.
- Do not allow children, pets, or livestock to have access to treated seed.
- Dispose of seed packaging in accordance with local requirements.
- Wear long pants, long-sleeved shirt, shoes, and socks when handling treated seed.

Crop Rotation

- The following list of crops and crop groups may be planted immediately after harvest of crops grown from seed treated with Lumisena, or following the failure of a crop grown from seed treated with Lumisena: tuberous and corn vegetables (Subgroup 1C); bulb vegetables (Group 3-07); leafy greens (Subgroup 4A); brassica, head and stem (Subgroup 5A); peas, succulent shelled; peas, edible-podded; fruiting vegetables (Group 8-10); cucurbit vegetables (Group 9); strawberries; herbs and spices (Group 19); oilseed (Group 20); ginseng; and tobacco.

COMMERCIAL SEED BAG LABELING (Cont.)

- The following crops and crop groups may be planted immediately after harvest of crops grown from seed treated with Lumisena, or in the case of crop failure, 30 days after the planting of seed treated with Lumisena: cereals (Groups 15 and 16) and grass animal feeds (Group 17).
- All other crops cannot be planted until 180 days after the planting of seed treated with Lumisena.

Storage and Disposal

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

PESTICIDE STORAGE: Keep container closed when not in use. Always store pesticides in the original container only, away from food, pet food, feed, seed, fertilizers, and veterinary supplies. If a leaky container must be contained within another, mark the outer container to identify the contents. Storage areas must be locked and secure from vandalism, with precautionary signs posted. The storage area must be dry, well-lit, and well-ventilated. Keep pesticide storage areas clean. Clean up any spills promptly. Protect pesticide containers from extreme heat and cold. Store herbicides, insecticides and fungicides in separate areas within the storage unit. Place liquid formulations on lower shelves and dry formulations above. Maintaining a spill kit and fire extinguisher on hand and having emergency phone numbers posted will allow you to be prepared for emergencies. If spill cleanup PPE is stored nearby, but outside the pesticide storage area, it will be accessible when needed.

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

CONTAINER HANDLING: Refer to the Net Contents section of this product's labeling for the applicable "Refillable Container" or "Non-refillable Container" designation.

Non-refillable Rigid Plastic and Metal Containers (Capacity Equal to or Less Than 5 Gallons): Non-refillable 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, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Non-refillable Plastic and Metal Containers (Capacity Greater Than 5 Gallons): Non-refillable 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, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Non-refillable Plastic and Metal Containers, e.g., Intermediate Bulk Containers (IBC) (Size or Shape Too Large to be Tipped, Rolled or Turned Upside Down): Non-refillable container. Do not reuse or refill this container. Clean container promptly after emptying the contents from this container into application equipment or mix tank and before final disposal using the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application

Storage and Disposal (Cont.)

equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

All Refillable Containers: Refillable container. Refilling Container: Refill this container with Lumisena containing Oxathiapiprolin only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. If leaks are found, do not reuse or transport container, contact the number below for instructions. Disposing of Container: Do not reuse this container for any other purpose other than refilling (see preceding). Cleaning the container before final disposal is the responsibility of the person disposing of the container. To clean the container before final disposal, use the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. For Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Do not transport if container is damaged or leaking. If the container is damaged, leaking or obsolete, or in the event of a major spill, fire or other emergency, contact 1-800-992-5994, day or night.

NOTICE TO BUYER— Purchase of this material does not confer any rights under patents of countries outside of the United States.

LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read this Limitation of Warranty and Liability before buying or using this Product. Corteva Agriscience will not be responsible for losses or damages resulting from the use of this product in any manner not specifically directed by Corteva Agriscience. User assumes all risks associated with such non-directed use. If the Terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

It is impossible to eliminate all risks associated with the use of this product. Such risks arise from weather conditions, soil factors, off target movement, unconventional farming techniques, presence of other materials, the manner of use or application, or other unknown factors, all of which are beyond the control of Corteva Agriscience. These risks can cause: ineffectiveness of the product, crop injury, or injury to non-target crops or plants. **WHEN YOU BUY OR USE THIS PRODUCT, YOU AGREE TO ACCEPT THESE RISKS.**

Corteva Agriscience warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for the purpose stated in the Directions for Use, subject to the inherent risks described above, when used in accordance with the Directions for Use under normal conditions.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, DUPONT MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO EVENT SHALL DUPONT OR SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. BUYER'S OR USER'S BARGAINED-FOR EXPECTATION IS CROP PROTECTION. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER AND THE EXCLUSIVE LIABILITY OF DUPONT OR SELLER, FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE, TORT OR STRICT LIABILITY), WHETHER FROM FAILURE TO PERFORM OR INJURY TO CROPS OR OTHER PLANTS, AND RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT, OR AT THE ELECTION OF DUPONT OR SELLER, THE REPLACEMENT OF THE PRODUCT.

To the extent consistent with applicable law that allows such requirement, Corteva Agriscience or its Ag Retailer must have prompt notice of any claim so that an immediate inspection of buyer's or user's growing crops can be made. Buyer and all users shall promptly notify Corteva Agriscience or a Corteva Agriscience Ag Retailer of any claims, whether based on contract, negligence, strict liability, other tort or otherwise, or be barred from any remedy.

This Limitation of Warranty and Liability may not be amended by any oral or written agreement.

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Produced for
Corteva Agriscience LLC
9330 Zionsville Road
Indianapolis, IN 46268

Label Code: CD02-628-021

Replaced Label: SL-2047 082417 (DuPont)

EPA Accepted 08/15/17

Revisions:

- In booklet, relocated Storage and Disposal section to near end of the booklet.
- Company updates for Corteva Agriscience including emergency phone number.