**Lumisena™ Controls Phytophthora Before It Has a Chance to Damage Soybean Seeds, Roots and Plants.**

Oxathiapiprolin is active at every stage of the fungal life cycle. In the early stages it keeps spores from producing and, as is evidenced below, it has preventative activity that inhibits zoospore release and prevents zoospore germination at very low concentrations.

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**DuPont™ Lumisena™ Fungicide Seed Treatment.**

**Advanced Technology for Phytophthora Control in Soybeans.**

Field trials have demonstrated:

- Effective control of oomycete pathogens that cause Phytophthora
- Activity on multiple stages of the pathogen's life cycle resulting in healthier plants and greater crop efficiency
- Significantly lower incidence of Phytophthora versus existing commercial seed-applied fungicides
- Systemic control improves root and plant health
- Increased emergence and healthier stand establishment to help maximize yields
- Highly effective at very low active ingredient use rates
- No cross-resistance to any existing fungicide
- Favorable environmental profile

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**Technical Bulletin:**

**DuPont™ Lumisena™ Fungicide Seed Treatment — Advanced Technology for Phytophthora Control in Soybeans.**

**Phytophthora is the #1 Disease Reducing Soybean Stand and Yield in the U.S.**

Photos taken 24 hours after harvesting sporangia of Phytophthora infestans in 4˚C water to stimulate zoospore release.
“Phytophthora has re-emerged as a serious soybean pathogen.” – Anne E. Dorrance Ohio State University

Over 300 million bushels of soybeans were lost to Phytophthora in the last 10 years according to the United Soybean Board study lead by Dr. J. Allen Wrather – University of Missouri. Phytophthora sojae is a soil-borne plant disease that develops and spreads as zoospores in poorly drained, heavy, wet soils.

Phytophthora sojae

DuPont™ Lumisena™ Fungicide Seed Treatment Developed to Control Damaging Spore Production and In Turn Minimize Serious Soybean Yield Loss.

Oxathiapiprolin, discovered by DuPont and the active ingredient in Lumisena™ fungicide seed treatment, will be the most advanced seed-applied technology to control Phytophthora in soybeans since the introduction of mefenoxam and metalaxyl. In internal research trials with leading university experts, soybean treated with oxathiapiprolin provided outstanding protection against Phytophthora in comparison to existing seed treatment fungicides. In multi-year DuPont Seed Treatment Enterprise research trials, Lumisena™ reduced the incidence of P. sojae 32% over the untreated check. Lumisena™ fungicide seed treatment has a favorable environmental profile with no cross resistance to existing fungicides, providing highly effective pathogen control at extremely low use rates.

DuPont™ Lumisena™. The Benefit Is In How It Works.

Research studies show oxathiapiprolin provides outstanding protection for soybean seeds and young plants against Phytophthora which is caused by the soil-borne P. sojae oomycete pathogen. This unique mode of action works to control oomycete infestation during multiple stages of the pathogen’s life cycle, resulting in healthier plants and greater crop efficiency.

Lumisena™ is a highly effective fungicide seed treatment fungicide that is systematically taken up in the plant from the moment the seed begins to grow. Lumisena™ provides extremely effective control of Phytophthora in soybeans to protect root growth, help ensure healthy emergence and early stand establishment, and ultimately help maximize yield.

DUPONT™ LUMISENA™ TECHNICAL PROFILE:

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<td>DuPont™ Lumisena™ fungicide seed treatment</td>
</tr>
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</table>

Disease Facts

- Caused by the soil-borne fungus Phytophthora sojae
- Disease is favored by extended wet field conditions
- Above-ground symptoms may not be evident for several weeks after initial infection

Disease Cycle

- Disease-causing fungus is a water mold, or oomycete, characterized by oospores and zoospores
- Oospores act as survival mechanism of the fungus
- Zoospores are produced when oospores germinate in the presence of a soybean crop
- Zoospores are also produced from infected soybean tissue during the growing season
- Fungus infects root and grows into and among the root cells of the plant
- Disease can survive in soybean residue and in the soil for up to ten years

DuPont™ Lumisena™ Efficacy Against Phytophthora sojae in Soybeans, 2015

Significant stand loss and stunted plants in Untreated Check.

Plants wilting among healthy plants is often a symptom of Phytophthora

Healthy consistent stand treated with 0.012 mg/a Lumisena™, in spite of heavy rainfall.
"Phytophthora has re-emerged as a serious soybean pathogen." – Anne E. Dorrance Ohio State University

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**Phytophthora Root and Stem Rot**

**Disease Facts**
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**Disease Cycle**
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Photos taken 24 hours after harvesting sporangia of Phytophthora infestans in 4°C water to stimulate zoospore release.

Oxathiapiprolin 0.001 ppm

Unwanted Control

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Lumisena™ may not be registered for sale or use in all states. Contact your local DuPont retailer or representative for details and availability in your state. This reference guide is not intended as a substitute for the product label for the product(s) referenced herein. Product labels for the above product(s) contain important precautions, directions for use, and product warranty and liability limitations, which must be read before using the product(s). Applicators must be in possession of the product label(s) at the time of application. Always read and follow all label directions and precautions for use when using any pesticide alone or in tank-mix combinations.

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