Stamina™ Fungicide
Seed Treatment

A New Seed Treatment for Wheat, Barley and Rye

*More Yield • More Profit*

Stamina™ fungicide recently received federal registration for use as a seed treatment on wheat, barley and rye. The labeled use rate for Stamina is 0.4 fl oz per 100 lbs of seed.

Stamina contains pyraclostrobin and is a seed treatment with a mode of action different from other seed treatments in wheat and barley: it inhibits fungal respiration, depriving the pathogen of energy for growth and development.

**Disease spectrum**

In research trials conducted between 2005 and 2007, Stamina was shown to have activity against a broad spectrum of wheat and barley pathogens, including Rhizoctonia root rot (*Rhizoctonia solani*), Fusarium seed rot and seedling blight (*Fusarium* spp.), common root rot (*Cochliobolus* spp.), dry seed decay (*Penicillium* spp.), certain *Pythium* spp., common bunt of wheat (*Tilletia caries*) and covered smut of barley (*Ustilago hordei*).

Stamina in combination with Charter® Fungicide Seed Treatment provides protection from a broad range of wheat and barley pathogens.

**Stamina emergence and stand effects**

Laboratory and field research trials have demonstrated that Stamina seed treatment of several crops was associated with less damage to plants after short exposures to cold temperatures. Laboratory studies have demonstrated that Stamina has the same effect on wheat. A higher percentage of seedlings treated with Stamina survived in the laboratory or showed less injury in the field following exposure to freezing temperatures.
Research Results With the Combination of Charter® Fungicide and Stamina™ Fungicide against *Fusarium* spp.

The winter wheat trial results in Georgia and Kansas illustrate the activity of the combination of Charter and Stamina against *Fusarium* spp. and the positive effect on seedling vigor.

**Wheat Stands in *Fusarium*-infested Soil**

- **Charter (3.1) + Stamina (0.4)**
- **Charter (3.1)**
- **Dividend® Extreme (2.0)**
- **Check**

Rates in fl oz/CWT. All treatments with equivalent of mefenoxam at 3 gram ai/100 kg.

**Wheat Stands from *Fusarium*-infested Seed**

- **Charter (3.1) + Stamina (0.4)**
- **Charter (3.1)**
- **Dividend® Extreme (2.0)**
- **Check**

Rates in fl oz/CWT. All treatments with equivalent of mefenoxam at 3 gram ai/100 kg.

November 2007 (Ag Research Associates, Quitman, GA).

Stands in Georgia 28 days after planting. Both treatments combined with Apron® XL (Ag Research Associates, Quitman, GA).
Research Results With the Combination of Charter® Fungicide and Stamina™ Fungicide against Common and Rhizoctonia Root Rot*

The combination of Charter and Stamina was also shown to suppress Cochliobolus spp., a major cause of seed and seedling rot and subsequent stand loss. Seedling vigor was greatly enhanced compared to the check with Stamina included in the seed-treatment mix with Charter.

Rhizoctonia solani can cause severe stand loss or interfere with growth of older plants by attacking roots and the base of plants. The combination of Stamina and Charter preserved stands of winter wheat in locations under heavy pressure from root rot caused by Rhizoctonia solani.

*These recommendations are made as permitted under FIFRA Section 2(ee). BASF is in the process of adding common root rot, Rhizoctonia root rot and dry seed decay to the Charter label.
Research Results on Dry Seed Decay

Dry seed decay* can be a major problem when seed remains in cool soils with insufficient moisture for germination. Under such conditions, dry seed decay caused by *Penicillium* spp. can rot the seed and cause stand loss. Research results indicate that the combination of Stamina™ fungicide and Charter® fungicide protected seed from decay by *Penicillium* in laboratory assays that created high pressure for infection.

![Percentage of Emerged Seedlings in Soil Conducive to Dry Seed Decay](chart.png)

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Always read and follow label directions.

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