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# Cereals Seed Treatment Guide

**Fall 2020**





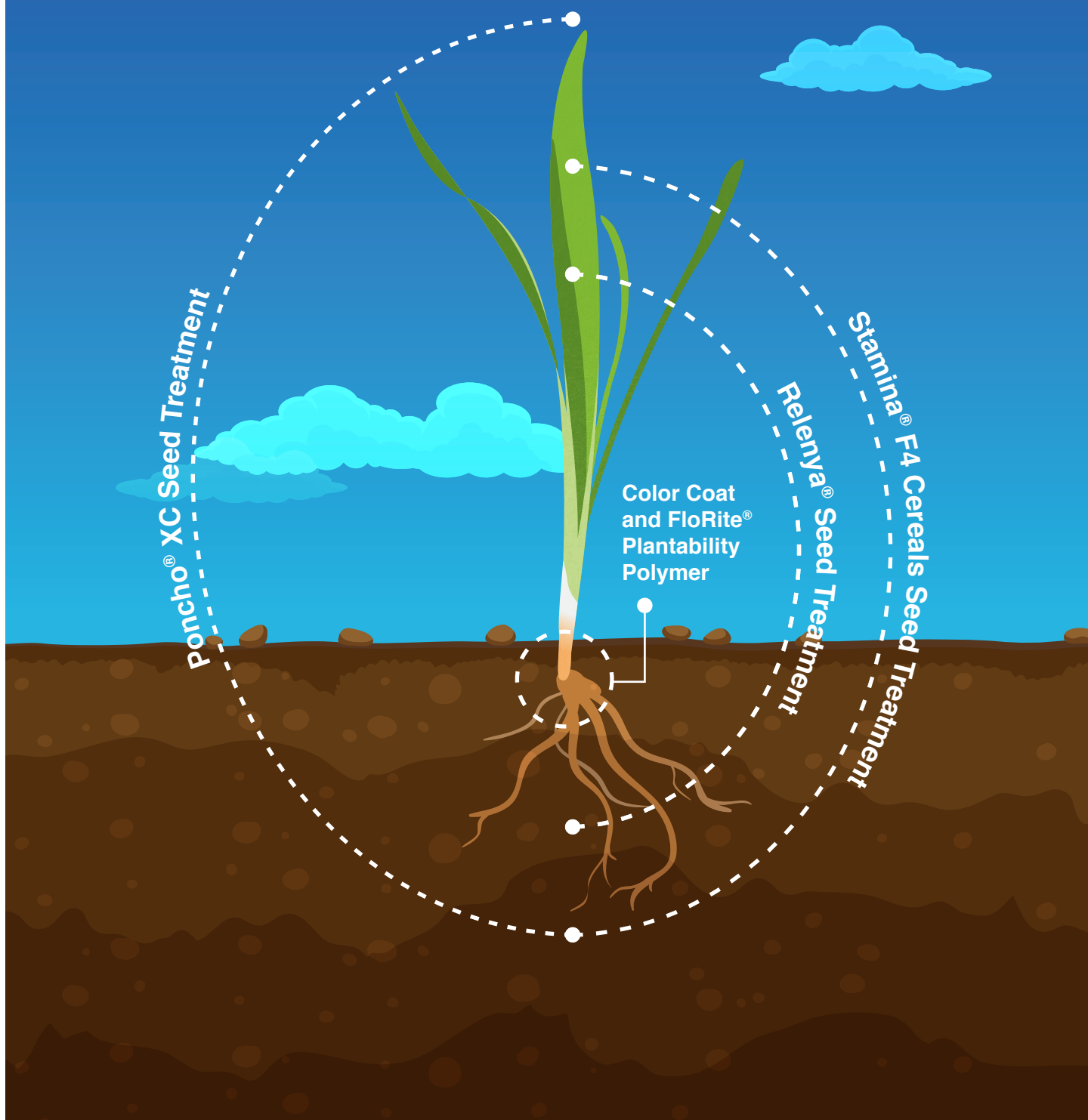


- **Empowering your seed**, your farm and your business to reach its full potential
- **Leading the way** to see how high and how far a seed can grow
- **Giving every grower** and every seed every possible advantage to thrive





# Powerful Protection to Minimize Early Season Risks and Maximize Opportunities for a Successful Season







# Stamina® F4 Cereals

## Seed Treatment

### Start Fast, Finish Strong

#### Protection from the Start

In order to maximize yield potential and maintain healthy crops, you need a seed treatment that works as hard as you do. Seeds need protection as soon as they hit the soil, especially during critical early crop development stages.

#### Plant Earlier for Higher Yields

Stamina® F4 Cereals seed treatment is the seed applied fungicide that offers industry- leading, 4 mode-of-action, broad-spectrum disease control with the plant health benefits of F500® fungicide, while providing for the addition of insecticide where needed for maximum flexibility.

The formula protects and controls disease for the growing seedling, allowing you to plant earlier, maximize your yield potential and maintain a healthy harvest.



#### PROTECTION

- Broad spectrum – 4 modes of action in one formulation, including Xemium® fungicide
- Protects your seed investment while providing an earlier growing window
- Enhanced Fusarium and *Rhizoctonia solani* control

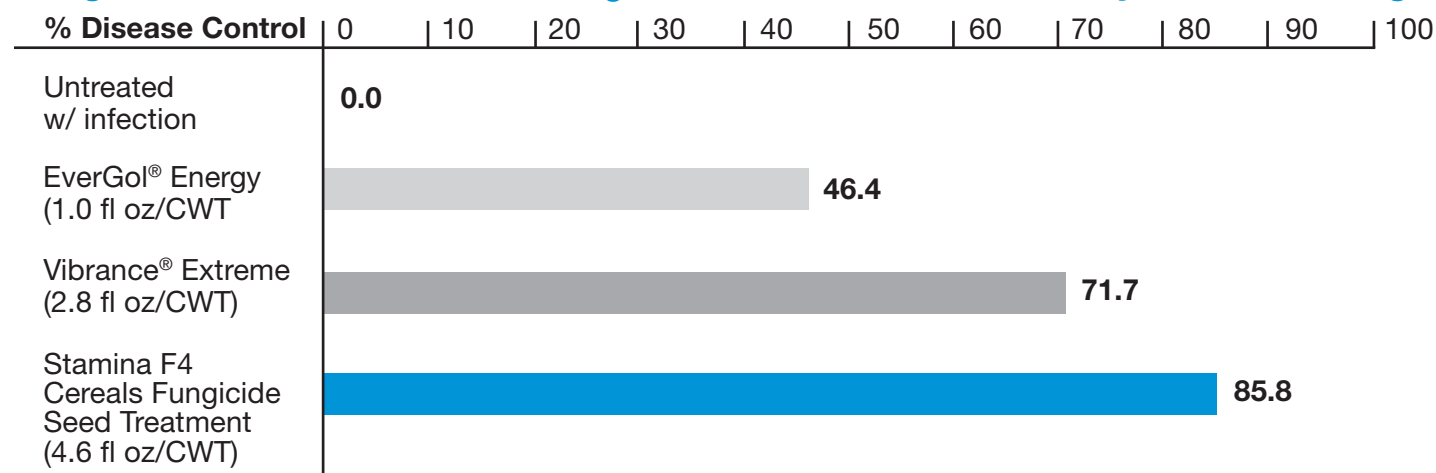
#### VITALITY

- F500® fungicide molecule provides plant health benefits, in addition to disease control, like cold tolerance, stress tolerance, and early vigor
- Faster and more consistent germination and seedling emergence under certain cold conditions

#### PERFORMANCE

- Provides flexibility to add insecticide when/where needed
- Improved field stand and higher yield potential
- Lower freeze point for cold weather application

### Longer Term Control of *Fusarium graminearum* in Wheat. 28 Days after Planting.



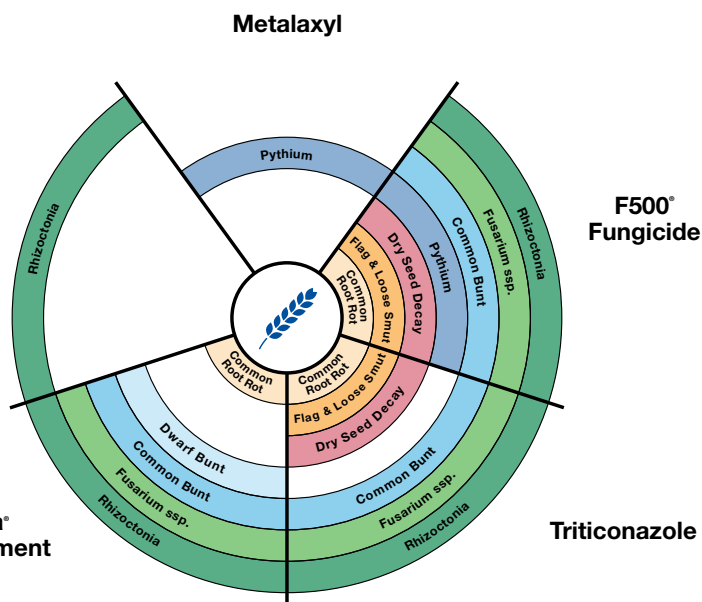


## Take Back Control

Planting seeds earlier means you need more protection. Once the seed is in the ground, the only control you have is your seed treatment. Stamina® F4 Cereals seed treatment gives you the protection you need in order to maximize your harvest potential. Designed with an easy-to-use formulation for on-farm or commercial application, Stamina F4 Cereals seed treatment works on wheat, barley, oats, triticale and rye.

**Xemium®  
Fungicide**

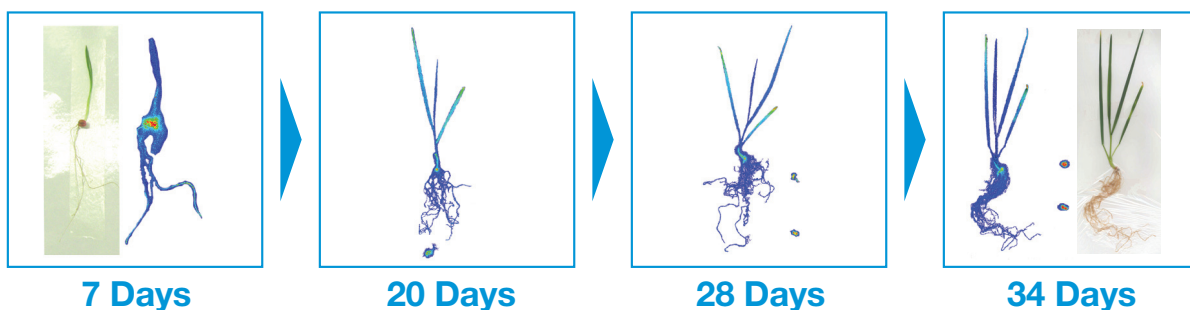
**Relenya®  
Seed Treatment**



## Formulated with Xemium® Fungicide for Unsurpassed Rhizoctonia Control

- Xemium fungicide exhibits unique plant mobility and translocation characteristics, enabling it to spread throughout the entire seedling, roots and shoots
- Plant wide distribution ensures protection right from initial developmental stages, providing reliable, consistent disease control
- Contributes to a better plant stand, which is the foundation for a healthier crop and yield potential

## Xemium Fungicide Systemicity for Enhanced Disease Control



Radiolabeled Xemium fungicide, shown to translocate from the seed throughout the seedling, providing continuous, consistent disease control. BASF Internal Study, Germany 2012.

## Increased Cold Emergence and Vigor

Untreated	Treated	
		Seed treatment applications with Stamina F4 Cereals seed treatment have been associated with more rapid and increased emergence under disease pressure and stressful conditions.

2017 Greenhouse Demo. Plants kept in saturated 10°C for 7 Days; Stamina F4 Cereals Seed Treatment, 4.6 fl oz/CWT

### Target Disease

- Common root rot
- Covered smut
- Dry seed decay
- False loose smut
- Fusarium seed rot and seedling blight
- Pythium damping off
- Rhizoctonia root rot
- Loose smut
- True loose smut
- Common bunt
- Flag smut
- Fusarium crown and root rot\*\*

\*\*Suppression only





# Relenya<sup>®</sup>

## Seed Treatment

### Boost Performance with Relenya<sup>®</sup> Seed Treatment on Cereals

#### Benefits of Relenya Seed Treatment

- Adds to a base foundation to boost disease protection under Fusarium and Rhizoctonia pressure
- Partners with a base package to boost yield potential under varied levels of disease pressure

#### Powered by Revysol<sup>®</sup> Fungicide

The newest active ingredient from BASF, Revysol fungicide is the first and only isopropanol-azole of its kind in the market.



#### Outperforming on Winter Wheat



**CruiserMAXX<sup>®</sup> Vibrance<sup>®</sup>**  
Cereals Seed Treatment (0.08 fl oz/CWT)

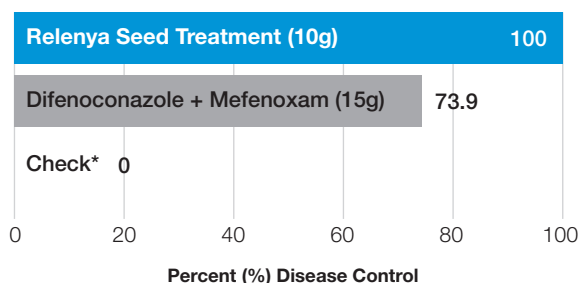


**Stamina<sup>®</sup> F4 Cereals Fungicide Seed Treatment  
+ Poncho<sup>®</sup> XC Seed Treatment  
+ Relenya Seed Treatment**



## Excellent Dwarf Bunt Control

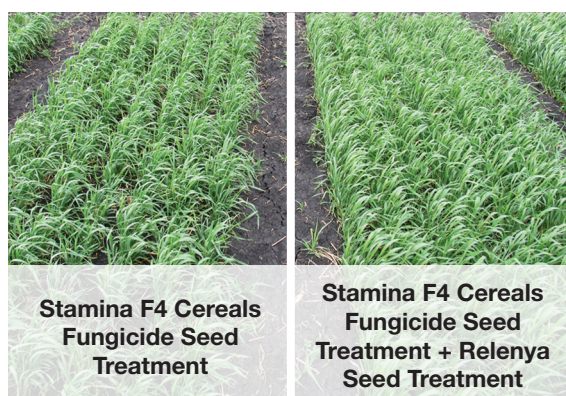
### Relenya® Seed Treatment/Winter Wheat/Dwarf Bunt



2015-2019 BASF Sponsored and Internal Research, US.

\*Infection level = 17.3 inf. heads/plot.

## Boosts Rhizoctonia Control



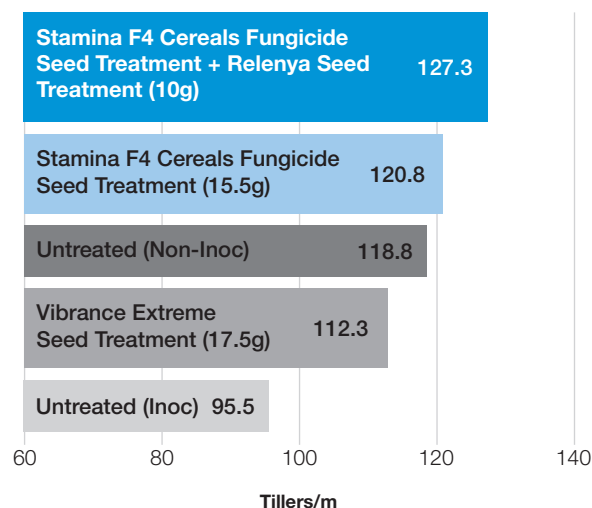
Site: 2020 Fargo, ND. Relenya seed treatment applied at 0.2 fl oz/CWT.

## Labeled Crops

- Barley
- Buckwheat
- Millet (pearl and proso)
- Oats
- Rye
- Triticale
- Wheat

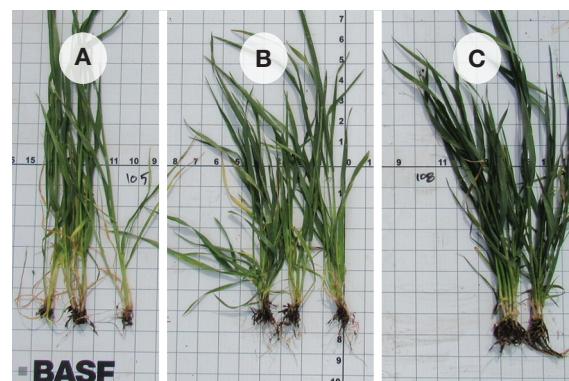
## More Tillers With Stamina® F4 Cereals Seed Treatment and Relenya Seed Treatment

### Relenya Seed Treatment/Winter Wheat/*Rhizoctonia solani* (Montana)



2015-2019 BASF Sponsored and Internal Research, US.

## Boost Base Package Performance



**A:** Vibrance Extreme Seed Treatment. **B:** Stamina F4 Cereals Fungicide Seed Treatment. **C:** Stamina F4 Cereals Fungicide Seed Treatment + Relenya Seed Treatment (0.4 fl oz/CWT). Source: 2020 BASF Trial Carrington, ND.

## CEREALS USE RATE CHART

DISEASE CONTROLLED		RATE/WEIGHT SEED	
		fl oz/100 lbs seed (lb ai/100 lbs seed)	mL/100 Kg seed (grams ai/100 Kg seed)
13,000 SEEDS/LB	Common root rot ( <i>Bipolaris sorokiniana</i> )		
	Seed and seedling disease Common bunt ( <i>Tilletia caries</i> ) Dwarf bunt ( <i>Tilletia controversa</i> ) Disease caused by <i>Fusarium</i> spp. Disease caused by <i>Rhizoctonia solani</i>	0.2 to 0.4 (0.005 to 0.01)	12.5 to 25 (5 to 10)





# Poncho<sup>®</sup> XC

## Seed Treatment

### Maximize Your Harvest From The Start

#### Benefits of Poncho<sup>®</sup> XC Seed Treatment

- Controls of a broad range of chewing and sucking soil and leaf pests
- Highest intrinsic activity at the CNI receptor in chemical class
- Systemic mode of action protects the entire plant, supporting healthier plant establishment
- Fast acting for immediate protection
- Long-lasting protection of seeds and young plants
- Consistent performance independent from soil and climatic conditions
- Unprecedented seed and crop safety ensures homogenous germination and emergence
- Promotes higher yields through a healthier root system and a more vigorous and uniform crop

#### Immediate Insect Efficacy

- Delivers immediate insect efficacy and protects against many early season insects

#### Consistent Yield Benefit

- Provides a consistent yield benefit across a wide range of geographies and environments



#### Guidelines for Handling and Applying Poncho XC Seed Treatment

##### Product Use and Application

- For Soybeans, apply Poncho XC seed treatment at 0.11 mg ai/seed (0.87 fl oz/140,000 seeds)
- For Cereal crops listed on the label, apply Poncho XC seed treatment at 0.25-1.79 fl oz/100 lbs seed
- Poncho XC seed treatment should be applied to cereal seed with the multifunctional coating Flo Rite 1197 plantability polymer, at the recommended rates. Laboratory studies show these coating systems are consistent with the performance seed treaters and growers have come to expect. A seed-applied colorant is needed to help ensure compliance with U.S. law.

##### Product Handling

Poncho XC seed treatment is a suspension concentrate, called an FS formulation. Store Poncho XC seed treatment at temperatures between 40°F and 90°F. It is very important to prevent the product from freezing. Prolonged exposure to temperatures above and below the recommended range may cause the product to stratify in the container.

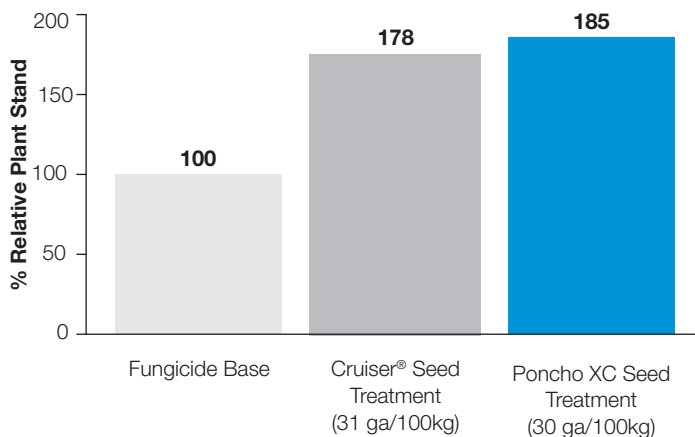
##### Dust Control

The Poncho XC seed treatment applied with Flo Rite 1197 plantability polymer for cereals at the recommended rates provides excellent dust control. Always follow your planter manufacturer recommendations for the proper use of planter lubricants.

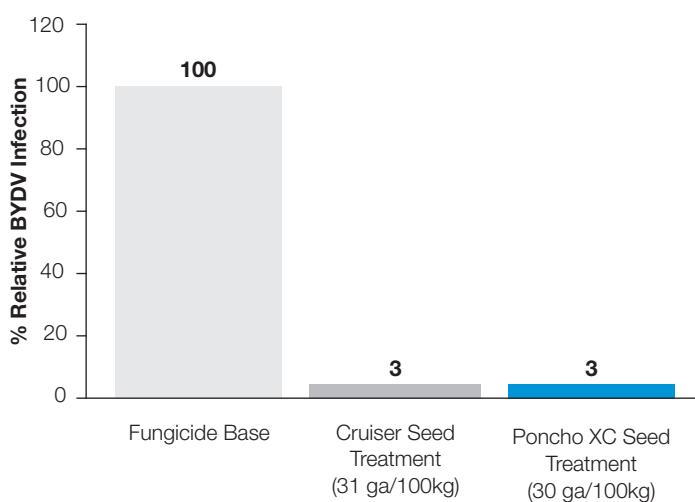


## Excellent Insect Control on Wheat Means Better Stand and Yield Potential

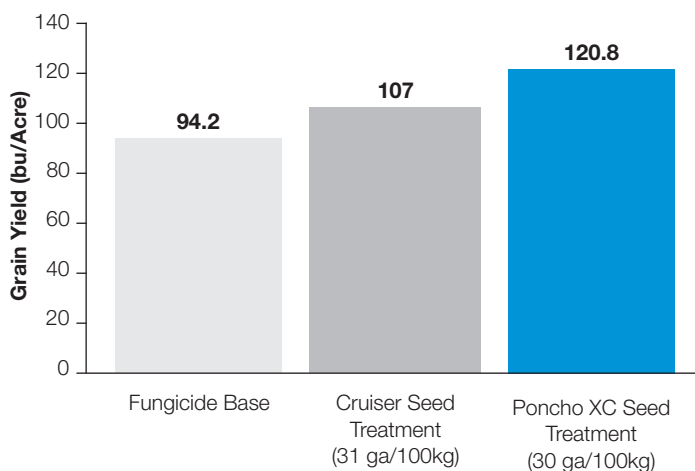
### Relative Plant Stand



### Relative BYDV (Barley Yellow Dwarf Virus) Infection














### Grain Yield



BASF Sponsored Winter Wheat Trial (2005 – Central Ferry, WA).

## PESTS

PONCHO® XC SEED TREATMENT		Wheat
	Aphids	✓
	Grasshopper	✓
	Hessian Fly <sup>1</sup>	✓
	Bean Leaf Beetle <sup>2</sup>	
	Grape Colaspis	
	Leafhoppers	
	Seed Corn Maggot	
	Three Cornered Alfalfa Hopper	
	Thrips	
	White Grubs	
	Wireworm	✓

1: Scott Bauer, USDA Agricultural Research Service, [Bugwood.org](http://Bugwood.org). 2: Ward Upham, Kansas State University, [Bugwood.org](http://Bugwood.org).

### Labeled Crops

- Barley
- Buckwheat
- Millet (pearl and proso)
- Oats
- Rye
- Triticale
- Wheat



# Cereal Seed Treatment Portfolio

**BASF's Seed Treatment portfolio provides the most comprehensive system available today for cereals to thrive in all types of field conditions. For you, that means reliable protection, measurable results, and peace of mind.**

## Fungicide and Insecticide Seed Treatments

Product	Key Disease/Pests	Standard Use Rate	Key Benefits
<b>Stamina®</b> Fungicide Seed Treatment	Control of seedling disease caused by: <ul style="list-style-type: none"> <li>■ <i>Rhizoctonia solani</i></li> <li>■ <i>Penicillium oxalicum</i></li> </ul> Suppression of seed and seedling disease caused by: <ul style="list-style-type: none"> <li>■ <i>Aspergillus</i> spp.</li> <li>■ <i>Fusarium</i> spp.</li> <li>■ <i>Pythium</i> spp.</li> </ul>	<ul style="list-style-type: none"> <li>■ 0.4-0.8 fl oz/100 lbs seed; Please refer to label for rates</li> </ul>	<ul style="list-style-type: none"> <li>■ Faster emergence, excellent cold tolerance</li> <li>■ Flexible blending partner for customized mixtures</li> </ul>
<b>Stamina® F4 Cereals</b> Fungicide Seed Treatment	<ul style="list-style-type: none"> <li>■ <i>Fusarium</i> seed rot and seedling blight</li> <li>■ <i>Fusarium</i> crown and root rot*</li> <li>■ <i>Pythium</i> damping off</li> <li>■ <i>Rhizoctonia</i> root rot</li> <li>■ Common root rot</li> <li>■ Covered smut</li> <li>■ Dry seed decay</li> <li>■ False loose, loose and true loose smut</li> <li>■ Common bunt</li> <li>■ Flag smut</li> </ul>	<ul style="list-style-type: none"> <li>■ 4.6 fl oz/100 lbs seed</li> </ul>	<ul style="list-style-type: none"> <li>■ Broad spectrum protection with four modes of action in one formulation including Xemium® and F500® technologies</li> <li>■ Cold tolerance, rapid emergence and highly systemic disease protection against key seedling diseases</li> <li>■ Flexible blending partner for customized mixtures</li> <li>■ Unique, systemic activity provides longer and more complete disease protection</li> <li>■ Labeled on wheat, barley, oats, triticale and rye</li> </ul>
<b>Poncho® XC</b> Seed Treatment	<ul style="list-style-type: none"> <li>■ Aphids including Bird cherryoat, English grain, Greenbug, and Russian wheat aphid</li> <li>■ Hessian fly</li> <li>■ Wireworms</li> </ul>	<ul style="list-style-type: none"> <li>■ 0.25-1.79 fl oz/100 lbs seed; Please refer to label for rates</li> </ul>	<ul style="list-style-type: none"> <li>■ Systemic insect protection from early season damage</li> <li>■ Labeled on barley, buckwheat, millet, oats, rye, teosinte, triticale and wheat</li> </ul>

\*Labeled for suppression.





## Fungicide and Insecticide Seed Treatments, cont.

Product	Key Disease/Pests	Standard Use Rate	Key Benefits
<b>Relenya®</b> Fungicide Seed Treatment	<ul style="list-style-type: none"> <li>■ Dwarf bunt</li> <li>■ Common root rot</li> <li>■ Common bunt</li> <li>■ <i>Fusarium</i></li> <li>■ <i>Rhizoctonia</i></li> </ul>	<ul style="list-style-type: none"> <li>■ 0.2-0.4 fl oz/100 lbs seed; Please refer to label for rates</li> </ul>	<ul style="list-style-type: none"> <li>■ Unique seed-applied azole innovation from Revysol® active ingredient</li> <li>■ Excellent control of dwarf bunt and seedling diseases and protects seed and root zone during early development</li> <li>■ Highly flexible blending partner</li> <li>■ Labeled on barley, buckwheat, millet, oats, rye, triticale and wheat</li> </ul>
<b>Teraxxa™</b> Seed Treatment (Anticipated sales Jan 2021)	<ul style="list-style-type: none"> <li>■ Wireworms</li> </ul>	<ul style="list-style-type: none"> <li>■ Pending State Registrations</li> </ul>	<ul style="list-style-type: none"> <li>■ New mode of action for true in-season control and effective management of wireworms</li> </ul>
<b>Teraxxa F4</b> Seed Treatment (Anticipated sales Jan 2021)	<ul style="list-style-type: none"> <li>■ Wireworms</li> <li>■ <i>Fusarium</i> seed rot and seedling blight</li> <li>■ <i>Fusarium</i> crown and root rot*</li> <li>■ <i>Pythium</i> damping off</li> <li>■ <i>Rhizoctonia</i> root rot</li> <li>■ Common root rot</li> <li>■ Covered smut</li> <li>■ Dry seed decay</li> <li>■ False loose, loose and true loose smut</li> <li>■ Common bunt</li> <li>■ Flag smut</li> </ul>	<ul style="list-style-type: none"> <li>■ Pending State Registrations</li> </ul>	<ul style="list-style-type: none"> <li>■ Blockbuster 5 MoA seed treatment for wireworm control and broad-spectrum disease control</li> <li>■ New mode of action for true in-season control and effective management of wireworms</li> <li>■ Broad spectrum protection with four modes of action in one formulation including Xemium® and F500® technologies</li> <li>■ Cold tolerance, rapid emergence and highly systemic disease protection against key seedling diseases</li> <li>■ Flexible blending partner for customized mixtures</li> <li>■ Unique, systemic activity provides longer and more complete disease protection</li> <li>■ Labeled on wheat, barley, oats, triticale and rye</li> </ul>

## Colors and Coatings

Product	Technology	Standard Use Rate	Key Benefits
<b>Color Coat</b>	<ul style="list-style-type: none"> <li>■ Colorant</li> </ul>	<ul style="list-style-type: none"> <li>■ 0.20-1.20 fl oz/cwt (wheat)</li> </ul>	<ul style="list-style-type: none"> <li>■ Effectively colors any seed, regardless of size, shape or texture for functional and aesthetic uses</li> <li>■ Water-based, low viscosity solution with neutral pH that offers convenience and easy cleanup</li> <li>■ Available in a variety of vibrant colors to add a distinctive appearance to seed</li> </ul>
<b>Flo Rite® 1197</b> Plantability Polymer	<ul style="list-style-type: none"> <li>■ Plantability Polymer</li> </ul>	<ul style="list-style-type: none"> <li>■ 2.0 fl oz/cwt (wheat)</li> </ul>	<ul style="list-style-type: none"> <li>■ Improves uniform coverage and application of seed-applied insecticides and fungicides</li> <li>■ Reduces stickiness, seed bridging, clumping, skips and doubles</li> <li>■ Delivers best-in-class retention of active seed treatment ingredients</li> </ul>





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To learn more about crop protection products from BASF, visit [www.agproducts.basf.us](http://www.agproducts.basf.us)

**Always read and follow instructions.**

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