



**A BREAKTHROUGH BIO-FUNGICIDE FOR WHEAT**  
Plant Strong | Grow Strong | Yield Stronger

biottrinsic® X11

Wheat

biottrinsic® X11 FP is a breakthrough biological fungicide that sets a new standard for nature-based crop protection in wheat by managing key seedling diseases and maximizing plant performance.

KEY BENEFITS



■ **Managing Seedling Diseases** | Combines multiple modes of action to effectively manage key seedling diseases impacting wheat, including several varieties of root rot (*Fusarium*, *Pythium*, and *Rhizoctonia*).



■ **High Compatibility** | Compatible with a wide range of pesticides to strengthen disease protection and give farmers the flexibility to follow crop protection programs tailored to their farm.



■ **Ease of Application** | Flowable powder (FP) formulation can be applied to seed as early as 60 days before planting using most any drill or planter equipment.



■ **Season-Long Protection** | The bacterial active ingredient in biottrinsic X11 FP starts working the moment the seed germinates and increases in quantity as it grows with the plant, providing season-long protection.

PACKAGING

Can be used on	How to use it
All wheat seed with no trait or varietal restrictions	Can be applied to seed in any planting system (box grain drill, air seeder, etc.)
Wheat within 60 days of planting	
All farming operations, including land management and cropping rotations	Can be applied over the top of existing seed treatments or to untreated seed
Previously treated seeds (see compatibility guide)	
Dryland and irrigated fields	Store both unused and open product according to label directions

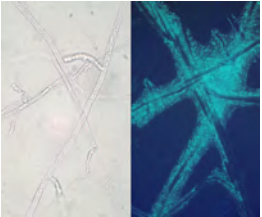
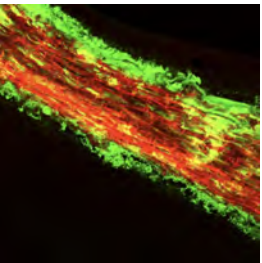
PRODUCT DETAILS

<b>Pkg Treats</b>	200 units
<b>Pkgs/Case</b>	1
<b>Case</b>	Pail
<b>Case Treats</b>	200 units
<b>Unit Measures</b>	50 lbs



HOW IT WORKS

- **Induced Systemic Resistance** | biottrinsic X11 FP produces an organic compound called acetoin, which triggers plant defenses that help the plant protect itself from harmful pathogens in the soil.
- **Root Protection** | As seen in the upper image to the right, when biottrinsic X11 FP (green) colonizes root tissue (red), it forms a biofilm along the root surface that acts as a physical barrier to protect wheat roots from pathogens.
- **Bioblocker Action** | When biottrinsic X11 FP encounters seedling disease pathogens, it rapidly surrounds the pathogen to form a wall of separation between the plant and the pathogen. You can see this in action in the lower right image—the biological barrier, seen here in blue, surrounds the pathogens.
- **Improved Plant Health** | While protecting seedlings from plant pathogens, biottrinsic X11 FP helps improve soil availability of potassium and phosphorus for wheat plants and stimulate root growth to help crops in dry conditions.



As of June 2024, biottrinsic X11 FP is registered in Alabama, Arkansas, Delaware, Georgia, Indiana, Kansas, Kentucky, Louisiana, Minnesota, Missouri, Montana, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, West Virginia, and Wisconsin. If you don't see your state, please contact Indigo for a status update on product registration for your state.

\*Data collected from small plot trials in the U.S. from 2020 and 2021, as well as pre-commercial university and demo trials in the U.S. in 2022. Results displayed are when compared to an untreated check.





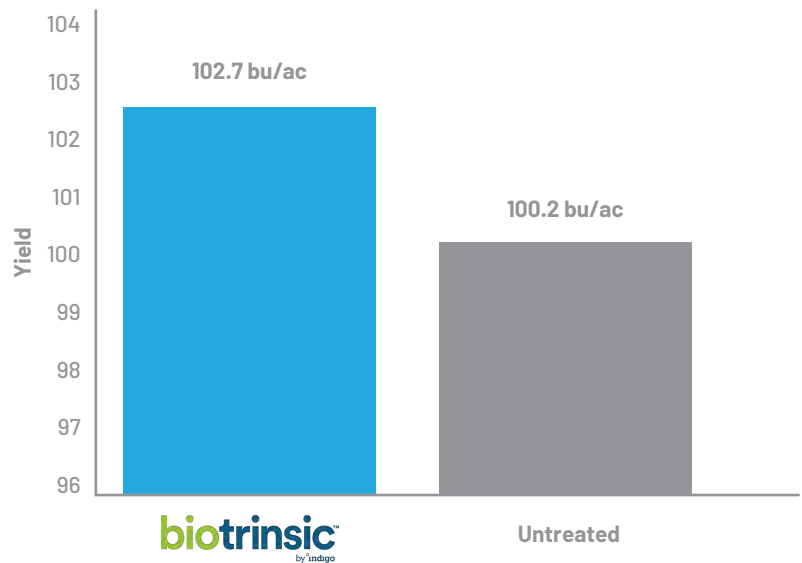
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AGRONOMICAL BENEFITS & TRIAL DATA \*

- Increase in Head Count** | biottrinsic X11 FP increased head count by +5.6% (5.57 heads/sq ft) in small-plot locations experiencing seedling disease stress. In *Pythium*-specific wheat trials, biottrinsic X11 FP increased head count by +8.0%.
- Improved Seedling Emergence** | biottrinsic X11 FP significantly improved seedling emergence by +8.2% and +3.6% in the presence of *Rhizoctonia* and *Pythium*, respectfully.
- Yield Bump** | biottrinsic X11 FP increased yield by an average of +2.5 bu/ac and 2.5%, and had a 63% win-rate observed across 29 locations in the Eastern U.S. in 2022. At the time of the trial, this average yield uplift represented +\$19.50/ac in value creation with a 4:1 ROI for growers.



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