Wheat and Barley Resistant to Fusarium Head Blight

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Inventors: Ivan Rayment, Karl Wetterhorn

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing transgenic wheat or barley lines with an enhanced mutated enzyme to create plants resistant to Fusarium head blight disease.

The Invention

Fusarium head blight (FHB, also known as head scab) is a disease of wheat and barley that results in dramatic losses of grain yield and quality. During infection Fusarium species produce a range of mycotoxins including deoxynivalenol and T-2 toxin. Grain products contaminated by these toxins present a serious health risk to humans and animals. For this reason the levels of acceptable contamination have been established by the United States Food and Drug Administration and by the European Union. UW–Madison researchers have developed a transgenic wheat or barley plant with a mutated enzyme that provides resistance to FHB.

Applications

- A transgenic wheat or barley plant with an enhanced modified enzyme that confers resistance to Fusarium head blight

Key Benefits

- A straightforward method to create transgenic wheat or barley resistant to Fusarium head blight
- Reduces need for fungicide applied to crops intended for human consumption
- Transgenic plants produced by this method are capable of glycosylating (and thus deactivating) both T2-toxin and deoxynivalenol.

Stage of Development

The researchers have mutated the enzyme from rice. For commercial use a gene construct expressing the mutant enzyme would need to be stably transfected into wheat or barley. The transgenic plants would need to be field tested to make sure that the enzyme retains its activity but does not impact yield.

Additional Information

For More Information About the Inventors

- Ivan Rayment

Tech Fields

- Animals, Agriculture & Food : Plant biotech

For current licensing status, please contact Emily Bauer at emily@warf.org or 608-960-9842