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Triticale—A Possible Third Crop for Iowa

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Triticale—A Possible Third Crop for Iowa

Abstract

Triticale (trit-ah-kay-lee) is a close relative of wheat that results from pollinating durum wheat with rye pollen, and then using that cross in a breeding program to produce stable, self-replicating varieties. Triticale yield, stress tolerance, and disease resistance are greater than that of wheat. Triticale doesn't currently possess the grain traits of bread wheat, so its greatest marketing potential is as animal feed.

Keywords

Agronomy, Animal Science

Disciplines

Agricultural Science | Agriculture | Agronomy and Crop Sciences | Animal Sciences

Triticale—A Possible Third Crop for Iowa

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swine because of its superior lysine content and high relative feed value compared with other cereal grains. Lysine is the first limiting amino acid in corn and many other cereal grains for swine, but lysine concentration for triticale is about 0.39% compared with 0.26% for corn. Swine on triticale-based diets have had rates of gain and feed efficiencies similar to those of pigs fed corn-based diets.

Introduction

Triticale (trit-ah-kay-lee) is a close relative of wheat that results from pollinating durum wheat with rye pollen, and then using that cross in a breeding program to produce stable, self-replicating varieties. Triticale yield, stress tolerance, and disease resistance are greater than that of wheat. Triticale doesn't currently possess the grain traits of bread wheat, so its greatest marketing potential is as animal feed.

Iowa State University investigators started a four-year, multidisciplinary, multi-site research project on triticale in 2001 using funds provided by an agronomy department endowment. This research contains variety trials, planting date research, cropping system evaluations, soil quality assessments, and swine feeding trials. Economic data are being collected on all phases of the research.

When added to a rotation, triticale may increase yields of other crops in the rotation, reduce costs, improve distribution of labor and equipment use, provide better cash flow, and reduce weather risks. Additionally, production of triticale may provide environmental benefits such as erosion control and improved nutrient cycling. Triticale seems to be an ideal crop for producers using sustainable agricultural practices and organic farming techniques. Efficiency of N uptake favors triticale when compared with other grains. Recent research also suggests that phosphorus excretion from pigs fed triticale was as much as 29% less than from pigs fed corn.

Results and Discussion

As part of the triticale research effort, bulk plantings of Pika triticale were made at Castana (western) and Newell (northwest) in October 2001. The grain and straw harvested in July 2002 will be used in swine feeding trials to be conducted at Castana. Average yields at the two sites were about 46 bushels/acre. Pika was selected because of its winter hardiness. However, experience with these plantings and variety trials at other sites suggested that Pika was more suited as a forage-type than a grain-type triticale. The triticale grain will be fed at Castana in winter and summer trials that compare triticale-based diets with corn-soybean diets for finishing swine in hoop systems.

Materials and Methods

Research from Florida, Canada, and Australia suggests that triticale is a potential feed for