

## *Competitive Agricultural Systems in a Global Economy* **Corn Gene Identification Project**

### ***Issue***

Cereal crops are the staple of most human diets worldwide. To improve crop yield and improve nutritive features in cereal crops, plant breeders need to know more about how specific genes work. Until now, no one has ever attempted to characterize all of the genes in a single cereal crop.

### ***What has been done***

In 1998 plant scientists from the UA and five other universities won a 5-year, \$12 million grant from the NSF to discover all 50,000 genes in corn, the nation's most important economic crop. The scientists are using a new method for discovering and sequencing genes in corn, and are

sharing project findings and material resources with public and private researchers working to develop improved traits in corn and many other agronomically important grasses, such as wheat, barley, rice and oats.

### ***Impact***

University of Arizona molecular geneticists have characterized about 10,000 corn genes thus far. As they determine the function of each targeted gene, this information is entered into a computer database and becomes accessible to plant breeders, plant genetic engineers and researchers in basic biology around the world who want to know more about how plants work.

They can look up gene functions and select only the genes they need to perform certain operations in plants. Slides, gene libraries and seed containing the mutated genes are available to the scientific community. The project is already having major benefits for plant research around the world, according to the researchers. Thousands of people are requesting these genes.

The corn genomics project is expected to lead to greater fundamental genetic understanding of cereals that worldwide contribute roughly 70 percent of the calories in the human diet.

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