

Corn Growers Applaud Plant Genetic Mapping Breakthrough

ST. LOUIS, Mo. — The National Corn Growers Association (NCGA) recently applauded the announcement of the completion of the genome-sequencing project for a mustard plant, *Arabidopsis*.

This is the first complete plant genome sequence and the most complete sequence of any higher organisms, even more complete than the human genome announced earlier this summer.

The National Science Foundation, an independent government agency that focuses on funding basic research, made the announcement in Washington, D.C. The NSF said the *Arabidopsis* has become the plant counterpart to the lab mouse, providing clues to how many organisms work and with potential applications in agriculture, energy, and medicine. The mustard plant is a model for more than 250,000 other plant types.

"This is a breakthrough for plant research that will affect all corn growers, and NCGA members can take great pride that it was leadership by NCGA that

led to the announcement," said Lee Klein, NCGA president and a farmer from Battle Creek, Neb. "Wednesday's announcement wouldn't have been possible without NCGA leading the effort to get major funding for the Plant Genome Initiative. Thanks to NCGA, this sequencing project is four years ahead of schedule."

Klein and NCGA member Bob Boeding of Iowa were in Washington, D.C., for the announcement.

"The NCGA knows that the future of the corn industry is written in corn's genetic code," Klein emphasized. "To compete internationally, the U.S. must continually work to maximize yield and minimize yield loss from disease, pests, and the weather without harming the environment. Modern biotechnology through plant genomics, holds the key to achieving this goal."

Arabidopsis is the smallest genome of all plants and is a valuable scientific model because of its short life span. The genome is the complete set of in-

structions for making an organism. It contains the master blueprint for all cellular structures and activities for the lifetime of the cell or organism. By understanding genomes, scientists can learn how genes contribute to the shape, function, and development of the whole plant and to use genes from corn and other significant crops to improve traits such as nutritional value, stress tolerance, and resistance to pests.

Since 1995, the NCGA has led efforts to obtain funding for corn genome and plant genome research. The "National Corn Genome Initiative" called for funding of a five-year, genome mapping, sequencing, and trait identification research program for corn. In 1997, the NCGA began calling for a "Plant Genome Initiative" to generate increased support for the project and in recognition of the fact that genome research in other plants would, ultimately, benefit to corn research efforts.

With the leadership of Senator Kit Bond, chairman of the Senate VA, HUD appropriations subcommittee, the NCGA

secured \$40 million for the first year (FY 1998) of a National Science Foundation (NSF) plant genome initiative. In providing the funding, the NSF was directed to accelerate the *Arabidopsis* full genome-sequencing project and to move beyond the current work towards more "economically important plant genome projects such as corn, wheat, rice, and soybeans." Since the first year's funding, an additional \$200 million has gone to the NSF Plant Genome Initiative.

The benefits of this initiative include:

- Reduced worldwide malnutrition due to higher yielding and more nutritious crops.

- Development of tailored hybrids with valuable specialty starches, oils, and protein content.

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- Revitalization of rural America because of a more robust agricultural sector.

- Expansion of plant-based renewable resources for energy and raw materials for chemicals.

- Significant reductions in crop losses and reliance on pesticides through improved biological control methods.

- Improved yields and reduced crop losses from heat, drought, and salt.

- Improved nitrogen-use efficiency.

- For livestock producers modify the digestibility of phosphorous in feed corn to reduce the amount of phosphorous that enters ground water.

- Development of tailored hybrids with valuable specialty starches, oils, and protein content.

New Millennium

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The second edition of the nutrient management book, published this summer, offered an updated and improved resource for readers.

The Reference Guide to Animal Health and Housing also came on the scene in April, featuring professional input from leading experts to help producers establish and maintain sound management practices.

November 4 brought *Lancaster Farming's* 45th anniversary of reporting on agriculture news, price reports, features, columns, and advertising.

In June a writer joined the editorial staff. Lancaster native Michelle Ranck now covers livestock, dairy, and environmental issues for the paper.

The Antiques Center is a new addition to the "B" section. Weekly features spotlight quilts, collectibles, china, heritage toys, and advertising for the antique aficionados among our subscribers.

To help urban neighbors understand agriculture, *Lancaster Farming* developed an Internet site featuring the Cow Cam in cooperation with Kreider Dairy Farms in Manheim. A camera is now in place in the two-acre barn which takes a picture every few minutes and displays the activities of the cattle on the Website.

Electronic pagination also became a part of the "putting the paper to bed" routine at the end of every week. In mid-July *Lancaster Farming* began using computers to create the layout of the paper.

In early November the editorial staff accepted a Public Relations In Agriculture Award from the Berks County Farm-City Council.

This year brought lots of exciting changes and growth to not only this paper but also industry. We appreciate the opportunity to report on such an exciting and important business. The staff at *Lancaster Farming* wishes you the best in the new year as we approach 2001.

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