

Iowa Grain Quality Initiative

ISU Extension to Agriculture and Natural Resources
College of Agriculture

*Creating new opportunities for
Iowa grain producers*

Objectives

Worldwide emphasis on grain quality and the increasing use of value-added grains for a specific purpose hold tremendous opportunities for Iowa corn and soybean growers. When compared to commodity grains, these grains represent a wide range of economic benefits. Value-added grains are changing the structure and revenue distribution of grain markets, offering both challenges and opportunities for growers.

The Iowa Grain Quality Initiative (IGQI) envisions a future in which Iowa is the location of choice for commercialization of specialty or value-added grains. Its major objectives are to:

- develop and update a strategic vision for Iowa grain production,
- facilitate the development and application of technologies that will improve the marketing and value of Iowa's primary grains,
- educate and assist producers and capture marketing opportunities, and
- respond to weather conditions or other external forces that affect grain quality.

This vision is particularly sharpened by recent events related to biopharmaceutical and bioindustrial grains.

Organization

The IGQI is a joint effort of Iowa State University (ISU) Extension and the Iowa Agriculture and Home Economics Experiment Station. A broad-based advisory committee meets each year to review projects and set direction for the IGQI. The management team sets priorities and manages the budgets for targeted projects. All projects have research and outreach components.

The IGQI budget for the fiscal year that ends June 30, 2003, is \$263,531. The budget includes funds from the Iowa Corn Promotion Board (\$25,000), Iowa Soybean Promotion Board (\$25,000), Extension 21 (\$164,031), USDA (\$4,500), Plant Sciences Institute (\$25,000), and Monsanto Company (\$20,000).

Major Activities

Quality Management Systems for Grain Elevators: As a case study example an audited quality management system with statistical controls was created for a grain elevator in Odebolt, Iowa. The cooperative that owns this elevator is preparing four other elevators for audit. The system is now being converted to ISO 9000. This work is widely recognized in the grain industry, and recently two USDA agencies have asked to use it as a model for USDA entry in ISO 9000 registration.

Farm machinery sanitation: An ISU-Pioneer Hi-Bred International, Inc. team produced a 20-minute video, *Planter Clean-Out Procedures for Corn and Soybeans* (VID 41) and companion publications (PM 1902-1908) that illustrate the clean-out procedures for seven different planters. The video and companion publications make it easier for standardized planter sanitation procedures to be adopted. Producers can use it to demonstrate to contractors the procedures they will use for planter sanitation, giving the producer a marketable difference over competitors. The video was distributed to ISU Extension Offices, Pioneer North America field representatives, and 190 Iowa high school vocational agriculture programs. The video received 2002 educational materials excellence awards from the American Society of Agricultural Engineers and the American Society of Agronomy. An ISU Extension team produced a 20-minute video *Combine Clean-Out Procedures for Identity Preserved Grain* (EDC 41) and a

companion publication (PM 1923) that illustrate the clean-out procedures for a conventional threshing system combine.

Quality control and certification: Specialty grains will create integrated marketing networks that require documented quality control practices and highly sophisticated technologies. This project will develop a vision for how modern manufacturing quality control processes can be adapted to grain marketing.

Corn channeling awareness program: The corn channeling poster project was expanded in 2002 to include Illinois and Indiana. The Extension programs, corn producer organizations, and grain handler associations from all three states, as well as Monsanto Company developed two posters (SP 161 and SP 162) that promoted the delivery of Roundup Ready® corn to grain collection sites willing to accept the product. The posters were distributed to 2,200 grain companies in Iowa, Illinois, and Indiana. The posters increased producer awareness of the restrictions on biotechnology products and the need for channeling the product to accepting facilities.

Research assistance: The Grain Quality Lab at ISU provides no-cost analyses to public strip-trial genetic evaluations and for any ISU researcher who wants to use these evaluations in existing field experiments. In 2002, the lab analyzed 4,409 corn samples and 2,149 soybean samples for strip trials and ISU research. The lab also conducted the 2002 National Soybean Quality Survey.

Rapid response issues: IGQI provided information on aflatoxin to drought stricken farmers. The IGQI Web site had 680,000 hits and 31,000 documents downloaded in FY02.

Leveraging the Advantages

The Iowa Grain Quality Initiative complements a number of related projects already under way at ISU. By coordinating information and resources, the initiative leverages the following funds:

- \$185,000 from the Agricultural Marketing Resource Center and the United States Department of Agriculture (USDA)
- \$150,000 from Cooperative Development Center and USDA
- \$125,000 from the Iowa Soybean Promotion Board for an integrated system for improving the composition and value of Iowa soybeans
- \$88,100 from the Food Technology Commercial Space Center and Iowa Soybean Promotion Board in support of the Program for Developing a Second Generation of Value-Added Products from Mini Soybean Mills.
- \$80,000 from the Iowa Department of Economic Development and Iowa Soybean Promotion Board to develop a grain market infrastructure for large-scale identity preservation
- \$79,900 from Biorenewable Resources Consortium for processing transgenic maize to recover valuable therapeutic proteins and industrial enzymes
- \$74,000 from the Iowa Soybean Promotion Board and

United Soybean Board for data uniformity and interpretation for soybean composition

- \$45,000 from USDA to develop an economic model for evaluating the expected value-added returns to grain and forage producers from chapter 501 dairy production cooperatives
- \$35,000 from USDA for assistance for USDA grain inspection
- \$30,000 from United Soybean Board for the annual soybean quality survey
- \$30,000 from Pioneer Hi-Bred International, Inc. for “Planter Clean-Out Procedures for Corn and Soybeans” video
- \$25,000 Iowa Corn Promotion Board for Iowa Grain Quality Initiative core funds
- \$25,000 from Iowa Soybean Promotion Board for Iowa Grain Quality Initiative core funds
- \$25,000 from Plant Sciences Institute for equipment support
- \$20,000 from Monsanto Company for the Roundup Ready® corn channeling project
- \$5,000 from Iowa Institute for Cooperatives for manager-director workshops
- \$4,500 from USDA for an Emergency Assistance Grant

Measuring the Impacts

During the fiscal year that ends June 30, 2003, work has been or will be completed in the following areas:

- Led a grain channeling poster project with the Extension programs, corn producer organizations, and grain handler associations from Iowa, Illinois, and Indiana, as well as Monsanto Company. The project distributed posters to 2,200 grain companies in the tri-state region to increase producer awareness of the restrictions on biotechnology products and the need for channeling the products to accepting facilities.
- A grain handling facility was registered to American Institute of Baking Quality Systems Evaluation standards in August 2002. An upgrade to ISO 9000 standards in August 2003 is expected, with the creation of public domain templates and training for further applications.
- Creating a sustainable procedure for quality assurance of current and emerging output-trait specialty grain products. Near-infrared (NIRS) analysis of corn and soybeans is the example.
- Complete a producer training program on quality grain production for the Iowa Quality Producers Alliance (IQPA) Seven producers will become IQPA certified.
- Performed grain quality analysis for 26 county strip trials across Iowa and 15 ISU research projects to make grain quality data readily available to producers and researchers.

- An ISU-Pioneer Hi-Bred International, Inc. team produced a 20-minute video, *Planter Clean-Out Procedures for Corn and Soybeans* (VID 41) and companion publications (PM 1902-1908) that illustrate the clean-out procedures for seven different planters. The video was distributed to ISU Extension Offices, Pioneer North America field representatives, and 190 Iowa high school vocational agriculture programs. The video received 2002 educational materials excellence awards from the American Society of Agricultural Engineers and the American Society of Agronomy.
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- Assisted Innovative Growers, LLC with design, management, and data collection and evaluation for food grade soybean demonstration plots at eight sites across Iowa. Marketing samples were developed for use on a trade mission to Japan. Field days were held at the demonstration plots for local producers and Japanese visitors.

... and justice for all

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