

## Federal Grain Inspection Service

The Federal Grain Inspection Service, commonly referred to as FGIS, became an Agency of the U.S. Department of Agriculture (USDA) in 1976 under the United States Grain Standards Act. The Department of Agriculture Reorganization Act of 1994 merged FGIS with the Packers and Stockyards Administration to form a new agency, Grain Inspection, Packers and Stockyards Administration (GIPSA). The merge combined many administrative functions, but FGIS continues program delivery activities as a program within GIPSA.

FGIS administers a nationwide system for officially inspecting and weighing grain and other commodities. It provides services through field offices, sub-offices, and duty points in 17 states. FGIS field offices also oversee the performance of state and private agencies, which provide official services at other domestic grain markets on FGIS' behalf. Six state agencies are delegated to mandatory export weighing and inspection services.

The U.S. Grain Standards Act, with few exceptions, requires official inspection and weighing of export grain sold by grade. Official services are provided upon request for grain in domestic commerce. The Agricultural Marketing Act (AMA) of 1946 authorizes similar inspection and weighing services for rice, pulses, and many processed grain products. The exceptions in the mandatory inspection requirements include grain that is not sold or described by grade; for grain exporters shipping less than 15,000 metric tons of grain abroad annually; for grain exported by train or truck to Canada or Mexico; for grain sold as "seed"; and for grain transhipped through the United States in a bonded identity preserved fashion.

### National Inspection System

The structure and composition of the national inspection system is unique, comprised of federal, state, and private laboratories all under the direct oversight of FGIS. State and private laboratories provide impartial service to the domestic market. Federal and state export laboratories provide mandatory weighing (See page 10) and inspection services (See page 12) at all export grain facilities. There are five basic operations performed at export when officially going aboard a ship: stowage examination, weighing, sampling, inspection, and certification.

At both export and domestic inspection sites, there is a cadre of auditors and supervisors that monitor official personnel performance to ensure accuracy and impartiality.

The success of the national inspection system is due, in part, to the precise testing procedures, equipment criteria, and



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employee conduct standards established and enforced by FGIS. The official system delivers accurate and consistent results, and protects against waste, fraud, and abuse.

### Ensuring Quality

Every FGIS field office has a quality assurance specialist who is trained to ensure that all inspectors in the area are performing accurately and according to instructions.

The FGIS Board of Appeals and Review is comprised of the Agency's most senior inspectors who make final determinations on grain quality assessments. They monitor and ensure the accuracy of all inspectors, including the quality assurance specialists.

FGIS re-engineered its quality assurance/quality control (QA/QC) program to capitalize on today's technology, using computers and automated systems to provide frontline inspectors with the information needed to get the job done right the first time and preclude quality analysis problems. The quality control system ensures that all inspectors align with the Board of Appeals and Review and that all equipment operates properly and is calibrated to the national reference methods.

### U.S. Grain Standards and Commodities Inspection

Official U.S. grain standards are used to describe the physical and biological properties of grain at the time of inspection. Grades, class, and condition reported on official certificates are determined based on factors defined in these standards.

Factors vary by grain and may include test weight per bushel; and percent — by weight, of damaged kernels, foreign materials, broken kernels, and other factors. Grades issued

under U.S. standards represent a sum of these factors. The certificate also notes certain conditions of the grain such as moisture content and infestation. Regardless of average new crop quality, no seasonal adjustments are made to the U.S. standards.

Standards exist for 12 grains (listed from largest to smallest volume inspected): corn, wheat, soybeans, sorghum, barley, oats, rye, flaxseed, sunflower seed, triticale, mixed grain, and canola.

Commodities such as rice, pulses, and hops have similar standards for grade and factors. Other commodities and a wide range of processed products, including flour, food mixes, edible oils, and other cereal food products, have no official USDA standards. FGIS, can however, perform the physical, chemical, and microbiological tests — using official laboratory methods of the Association of Official Analytical Chemists — requested in contract specifications.

Official inspection of export grain is mandatory, with the exceptions listed above. Official personnel employed or licensed by FGIS obtain representative samples using approved equipment. The grain is inspected and the grade is reported on a white certificate, which represents the entire lot inspected.

Standards used to inspect grain and commodities are updated regularly through public rulemaking procedures and represent currently accepted market practice.

## **FGIS Rulemaking Procedures**

Official U.S. Standards for Grain are based on public comment; they are not unilaterally prescribed by the U.S. government. Before FGIS can establish or revise any of its standards or regulations, the agency must publish a proposal in the *Federal Register*, the U.S. government's legal newspaper.

Most *Federal Register* proposals have a 60-day comment period during which FGIS solicits the views of all sectors of the grain industry — breeders, producers, handlers, exporters, and importers. FGIS transmits the proposals to the agricultural offices of U.S. embassies worldwide and issues a press release. Current press releases may be found on FGIS' web site, [www.gipsa.usda.gov/GIPSA/newsReleases?area=newsroom&subject=landing&topic=nr](http://www.gipsa.usda.gov/GIPSA/newsReleases?area=newsroom&subject=landing&topic=nr). FGIS also mails specific proposals to any person upon request.

Each proposal contains instructions for submitting comments including a mailing address, fax number, and e-mail address.

After the comment period closes, FGIS decides on the appropriate action based on the views expressed. FGIS publishes its decision as a “final rule” in the *Federal Register*. Changes to the standards generally take effect 1 year after the final rule is published and at the beginning of the marketing year (June 1 for wheat).

FGIS does not change the standards each year to reflect the fair average quality of the crop; rather, the standards remain fixed until specifically revised. Revisions to the standards are typically initiated by FGIS in response to expressed market needs. FGIS' challenge, therefore, is to provide the market with standards that are a benchmark for the description of grain quality and, at the same time, continue to provide market-relevant information.

## **Research Projects**

FGIS is committed to developing new technology or expanding the use of current technology to measure relevant wheat quality attributes. The market needs accurate test methods to differentiate the intrinsic functional qualities of wheat that impact the end products made from it. Official analysis must be timely, reliable, and cost-effective; and the results must be understandable throughout the market. FGIS is studying current methods used in evaluating the functional properties of wheat, such as the Farinograph, in an effort to improve the overall accuracy of these tests. FGIS is also working cooperatively with the USDA Agricultural Research Service, universities, and other entities to develop new, more practical tests for evaluating the functional properties of U.S. wheats.

The grain industry needs fast, reliable tests to detect the presence of mycotoxin-contaminated grain. In addition to approving deoxynivalenol and zearalenone test kits, FGIS will be developing and implementing official testing services for ochratoxin A, T-2, and HT-2.

In 2005, FGIS implemented a global all-class wheat protein calibration that replaced the six individual wheat class protein calibrations previously used in official inspection. Artificial neural network (ANN) calibration techniques were used to support development of the all-class wheat protein calibration and to improve the accuracy of protein predictions for the near-infrared transmittance (NIRT) instruments used in official inspection. Use of the single, more accurate, ANN wheat protein calibration makes it much easier for the commercial sector to align its instruments with the official system. In 2006, GIPSA developed and implemented a protein-based NIRT calibration to determine wet gluten content for hard red winter and hard red spring wheat.

All of these efforts are being taken to improve the level of service available through the national inspection system. Today's technology offers many possibilities for improving the system and providing more meaningful information to the customer. FGIS recognizes and accepts the challenge of harnessing technology to improve the national inspection system.

### **International and Domestic Program Development**

The FGIS Office of International Affairs (OIA) is the Agency's liaison to importers and other governments and international traders. OIA explains the national inspection system, U.S. grain standards, and commodity inspection programs; conducts briefings and educational visits; assesses foreign inspection and weighing techniques; and responds to inquiries about quality and weight of U.S. grain shipments. FGIS also coordinates cooperative studies to monitor the quality and weight of grain shipments between U.S. and destination ports.

For further information, contact:

USDA, GIPSA, Federal Grain Inspection Service  
Office of International Affairs  
Stop 3620  
14th and Independence Ave., S.W.  
Washington, D.C. 20250-3620  
Telephone: (202) 720-0226  
FAX: (202) 720-1015

Or visit the GIPSA Web site:

*[www.gipsa.usda.gov/GIPSA/webapp?area=home&subject=grpi&topic=is](http://www.gipsa.usda.gov/GIPSA/webapp?area=home&subject=grpi&topic=is)*