



United States Department of Agriculture

# FEDERAL GRAIN INSPECTION SERVICE 2017 Annual Report



HELPS MOVE OUR NATION'S HARVEST

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INTO THE MARKETPLACE

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BY PROVIDING ACCURATE AND CONSISTENT

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INSPECTION AND WEIGHING SERVICES



# About This Report

Each year, pursuant to section 87(f-2) of the U.S. Grain Standards Act, the Federal Grain Inspection Service respectfully submits an annual report to the United States Congress. Activities described in this report cover Fiscal Year (FY) 2017 (October 1, 2016, through September 30, 2017).

All content is reported as Grain Inspection, Packers and Stockyards Administration (GIPSA). In FY 2018, the realignment of offices within the U.S. Department of Agriculture eliminates GIPSA as a standalone agency. The grain inspection activities formerly part of GIPSA are now organized under the Agricultural Marketing Service.

This report is divided into seven sections. After the Introduction, Sections II through V represent program goals, and Sections VI and VII provide information regarding the Federal Grain Inspection Service's management initiatives and financial position.

Any mention of firm names or trade products does not imply that they are endorsed or recommended directly or indirectly by the U.S. Department of Agriculture.

This document is available in the following electronic formats on the GIPSA Website: 508 PDF version.

[www.gipsa.usda.gov](http://www.gipsa.usda.gov)

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# Section I

## Introduction

### The Federal Grain Inspection Service

The U.S. Department of Agriculture's (USDA) Federal Grain Inspection Service (FGIS) establishes quality standards for grains, oilseeds, pulses, and legumes; provides impartial inspection and weighing services through a network of Federal, State, and private entities; and monitors marketing practices to enforce compliance with the U.S. Grain Standards Act, as amended, (USGSA) and the Agricultural Marketing Act of 1946, as amended (AMA). Through these activities, FGIS facilitates the marketing of grains, oilseeds, and related products.

FGIS administers uniform national grain inspection and weighing programs established by the USGSA. Services under the USGSA are performed on a fee basis for both export and domestic grain shipments. The USGSA requires that export grain be inspected and weighed, prohibits deceptive practices with respect to the inspection and weighing of grain, and provides penalties for violations.

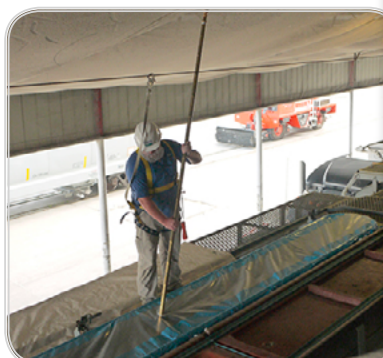
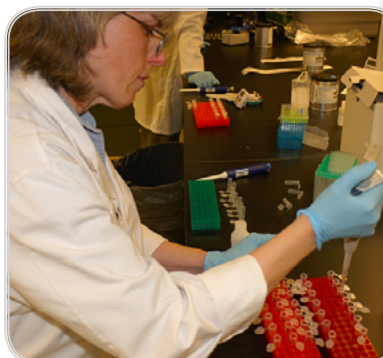
### Agency Mission

FGIS's primary mission is twofold: promote the marketing of high-quality grain to domestic and international buyers and maintain objective standards for grain to certify its quality as accurately as practicable. These standards define uniform and descriptive terms to facilitate the grain trade, help determine grain storability, offer users the best possible information to determine end-product yield and quality, provide market incentive frameworks, reflect the economic value-based characteristics to end-users, and accommodate scientific advances in testing.

## Key Activities

In administering and enforcing the USGSA, FGIS:

- Establishes and maintains official U.S. grain standards for barley, canola, corn, flaxseed, oats, rye, sorghum, soybeans, sunflower seed, triticale, wheat, and mixed grain;
- Promotes the uniform application of official U.S. grain standards by official inspection personnel;
- Establishes methods and procedures and approves equipment for the official inspection and weighing of grain;
- Provides official inspection and weighing services at certain U.S. export port locations and official inspection of U.S. grain at certain export port locations in eastern Canada along the St. Lawrence Seaway;
- Delegates qualified State agencies to inspect and weigh grain at certain U.S. export port locations;
- Designates qualified State and private agencies to inspect and weigh grain at interior locations;
- Licenses qualified State and private agency personnel to perform inspection and weighing services;
- Provides Federal oversight of the official inspection and weighing of grain by delegated States and designated agencies;
- Monitors the quality and weight of U.S. grain as received at destination ports, and investigates complaints or discrepancies reported by importers;
- Investigates, in cooperation with the USDA's Office of Inspector General, alleged violations of the USGSA and initiates appropriate corrective action; and
- Helps U.S. trading partners develop and improve their grain inspection and weighing programs.



## Services Provided Under USGSA and AMA

Under provisions of the USGSA, most grain exported from U.S. export port locations must be officially weighed. A similar requirement exists for inspection, except for grain that is not sold or described by grade. The USGSA also requires that all corn exported from the U.S. be tested for aflatoxin prior to shipment unless the contract stipulates that testing is not required.

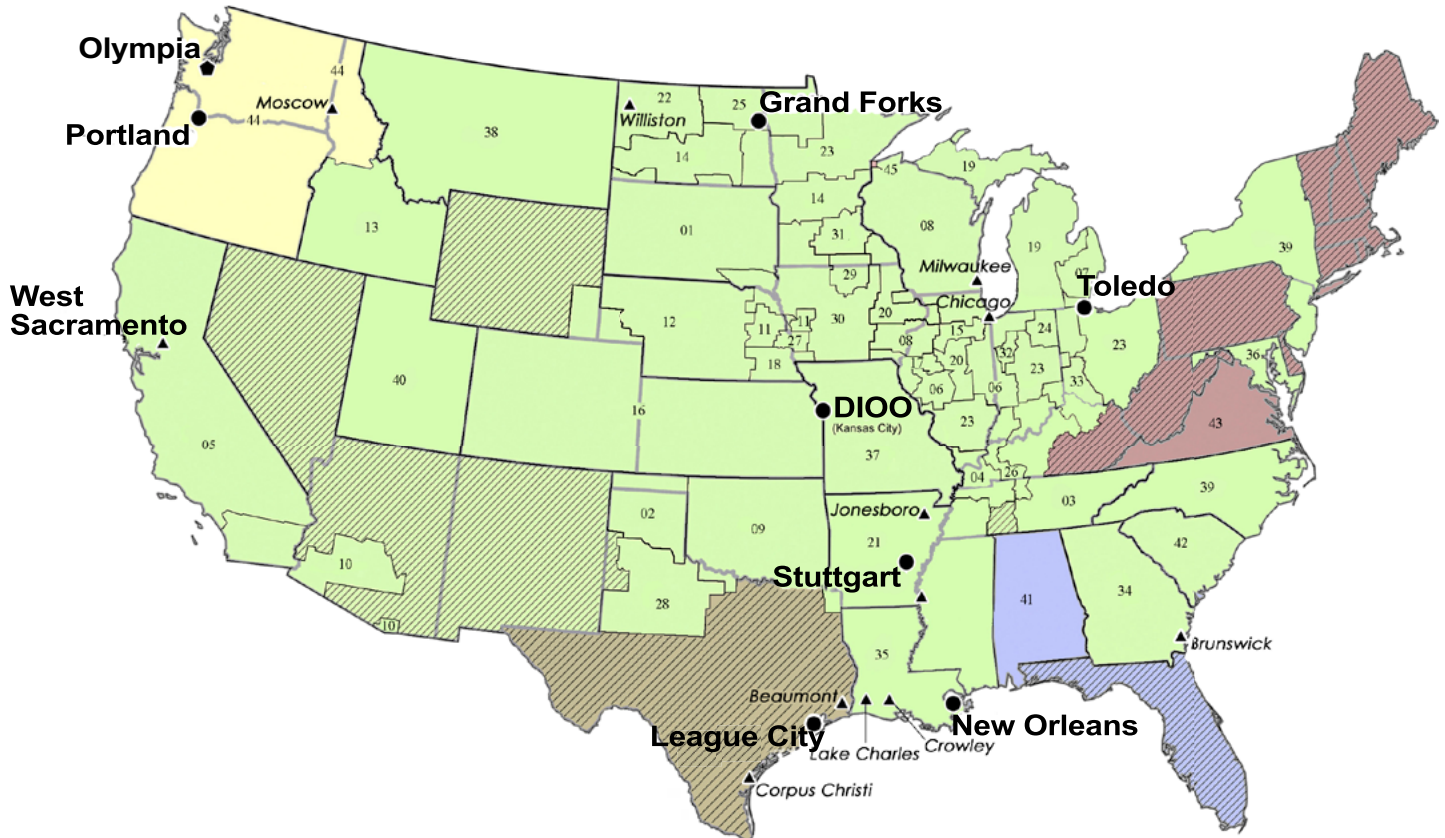
Under the AMA, FGIS administers and enforces certain inspection and standardization activities related to rice, pulses, lentils, and processed grain products such as flour and corn meal, as well as other agricultural commodities. Services under the AMA are performed upon request on a fee basis for both domestic and export shipments by either FGIS employees or individual contractors, or through cooperative agreements with States and or other official agencies.

## Employees and Locations

As of September 20, 2017, FGIS was comprised of 490 full-time, permanent employees and 127 temporary employees located at the headquarters unit in Washington, D.C.; the National Grain Center in Kansas City, Missouri; seven field offices; and one Federal/ State office. Field offices are located in Grand Forks, North Dakota; Kansas City, Missouri; League City, Texas; New Orleans, Louisiana; Portland, Oregon; Stuttgart, Arkansas; and Toledo, Ohio. FGIS also has a Federal/State office in Olympia, Washington.

FGIS offers official inspection and weighing services in all areas of the U.S. and services for U.S. grain exported through Canadian ports.

## Official Agency Geographic Areas and FGIS Field Offices U.S. Grain Standards Act



### Designated Private Agencies

- |                      |                      |
|----------------------|----------------------|
| 01 Aberdeen          | 18 Lincoln           |
| 02 Amarillo          | 19 Michigan          |
| 03 Barton            | 20 Mid-Iowa          |
| 04 Cairo             | 21 Midsouth          |
| 05 California Agri   | 22 Minot             |
| 06 Champaign         | 23 North Dakota      |
| 07 Detroit           | 24 Northeast Indiana |
| 08 Eastern Iowa      | 25 Northern Plains   |
| 09 Enid              | 26 Ohio Valley       |
| 10 Farwell Southwest | 27 Omaha             |
| 11 Fremont           | 28 Plainview         |
| 12 Hastings          | 29 Schaal            |
| 13 Idaho             | 30 Sioux City        |
| 14 Jamestown         | 31 State Grain       |
| 15 Kankakee          | 32 Titus             |
| 16 Kansas            | 33 Tri-State         |
| 17 Keokuk            |                      |

### Designated States

- 34 Georgia
- 35 Louisiana
- 36 Maryland
- 37 Missouri
- 38 Montana
- 39 North Carolina
- 40 Utah

### Designated and Delegated States

- 41 Alabama
- 42 South Carolina
- 43 Virginia
- 44 Washington
- Delegated State**
- 45 Wisconsin

### Field Office Areas of Responsibility

- DIOO (Grain/Pulses/Processed Commodities)
- Stuttgart (Rice)
- League City
- New Orleans
- Olympia
- Toledo

- FGIS Field Office
- ◆ Federal/State Office
- ▲ FGIS Duty Point
- Official Agency Boundaries
- ▨ Unassigned Areas
- State Boundaries



# Section II

## Outlook 2018

### U.S. Standards for Grain

FGIS regularly reviews the official standards for grain to ensure that the standards remain relevant to the marketplace. In FY 2017, FGIS completed its review of the U.S. Standards for Barley and published a Final Rule in the Federal Register amending the barley standards. FGIS also published standards for chickpeas and revised standards for lentils through Federal Register notices. Additionally, FGIS continued its review of the U.S. Standards for Rough Rice, Brown Rice for Processing, Milled Rice, and plans to publish a Final Rule in the Federal Register amending the rice standards in FY 2018.





















## Lentil and Chickpea Standards



Lentil acreage has expanded into new regions and the lentil industry has encountered a changing market trend of increasing percentages of fully developed lentils that possess wrinkled seed coats. Lentils that would otherwise grade U.S. No. 1 by the current standard are not acceptable to the customer due to the wrinkle appearance. Additionally, majorities of lentils produced in the U.S. are considered green lentils; the industry requested FGIS establish a special grade designation for green clear seed lentils, specifically “Green Lentils.” On May 15, 2017, FGIS published a notice; request for public comment in the Federal Register soliciting comments on proposed revisions to the U.S. Standards for Lentils. The proposal revises the lentil standards to establish an additional grading factor, definition, grade requirements, and visual reference image for “wrinkled lentils,” and establishes a special grade, definition, special grade requirements, designation, and interpretive line print for “green lentils.” FGIS received two comments from industry association supporting the proposed revisions. On July 7, 2017, FGIS published the final notice in the Federal Register with the effective date of August 1, 2017.

FGIS published a notice, request for public comment in the Federal Register on May 15, 2017, soliciting comments on proposed revisions to the U.S. Standards for Beans. The proposal establishes a class and grade requirement chart for “chickpeas,” also known as “garbanzo beans,” and a new grade determining factor, definition, factor limits, and visual reference image for “contrasting chickpeas.” Chickpeas were graded under the U.S. Miscellaneous Bean standard prior to August 1, 2017. This caused confusion for the market since FGIS issued an “Agricultural Marketing Act (AMA) Commodity Inspection Certificate” providing the commonly accepted commercial name (chickpea or garbanzo) as the class on the certificate grade line. On July 7, 2017, FGIS published the final notice in the Federal Register with the effective date of August 1, 2017.

CHICKPEA TYPE	CONTRASTING CHICKPEAS			
Desi	Kabuli	Bianca	Bronc/Billy	Bronc/Billy round
				
Kabuli	Desi	Bronc/Billy round		
				
Bianca	Desi	Bronc/Billy	Bronc/Billy round	
				
Bronc/Billy	Desi	Bianca		
				
Bronc/Billy round	Desi	Bianca	Kabuli	
				

# Section III

## Providing the Market with Terms and Methods for Quality Assessment



### Board of Appeals and Review

The Board of Appeals and Review (BAR) is a team of six senior-level grain inspectors led by a Chairman and an Assistant Chairman. The BAR is the final adjudication body for all disputes regarding subjective grain quality issues presented by any interested party in a grain transaction. The BAR performs appeal inspections after the issue has been considered by other FGIS field offices. The BAR rendered decisions on 375 grain appeals during FY 2017.

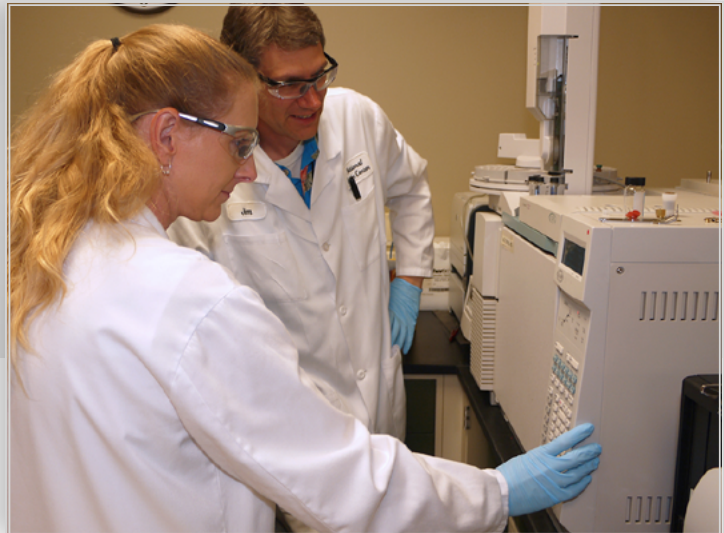
The BAR is responsible for ensuring alignment of sensory inspections throughout the entire official inspection system. This is accomplished through a network of Quality Assurance Specialists (QASs) at both Federal and official agency inspection points. To maintain inspection alignment, the BAR holds annual QAS seminars for Federal and official agency QASs at the National Grain Center in Kansas City, Missouri. The BAR also provided technical grain grading training for newly appointed QAS, and in FY

2017 the BAR provided a week long training course for 11 new QASs.

The BAR provided grain grading presentations and “hands on” grain grading training to domestic grain associations and international trade teams. BAR members also provided annual training for Federal and official agency grain inspectors at FGIS field offices.

## Pesticide Residue Testing and Method Development

FGIS provides pesticide residue testing services for applicants and for domestic and export surveys. In addition, FGIS develops analytical methods to support these activities, which play a critical role in demonstrating the quality of U.S. grain as it relates to food safety, value, and adherence to U.S. and international regulatory limits. In FY 2017, FGIS analyzed 345 export wheat samples for 62 pesticide residues, 100 export corn samples for 60 pesticide residues, and 100 export soybean samples for 96 pesticide residues. Also in FY 2017, FGIS analyzed 27 corn, soybean, wheat, and popcorn samples for 55 pesticide residues and provided FGIS official certificates to customers.



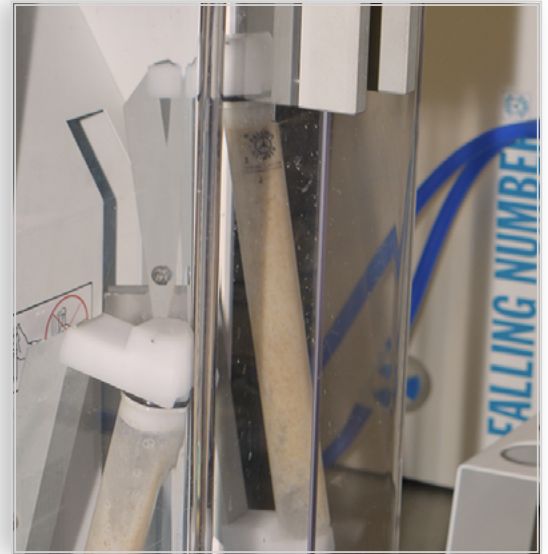
## Mycotoxin and Biotechnology Rapid Test Kit Evaluations

The grain industry needs fast reliable tests to detect and quantify the incidence of fungal-produced mycotoxins in grain as well as to accurately identify Genetically Engineered (GE) traits in grains. To ensure that commercially available tests provide reliable results, FGIS offers a performance evaluation and certification program. In FY 2017, 24 rapid test kits were evaluated for the analysis of mycotoxins (aflatoxin, deoxynivalenol, fumonisin, and zearalenone). Of the 24 test kits, 15 met the FGIS performance criteria and were certified.

**Water-Based Test Kits.** A technology has been developed using water for the extraction of aflatoxin, fumonisin, and zearalenone instead of more hazardous organic solvents. The use of water instead of organic solvents eliminates the need for special handling of this waste, thereby reducing overall costs. It also reduces possible exposure of operators to hazardous chemicals when performing these tests. In FY 2017, four water-based test kits were approved for aflatoxin, two water-based test kits were approved for fumonisin, and one water-based kit was approved for zearalenone.

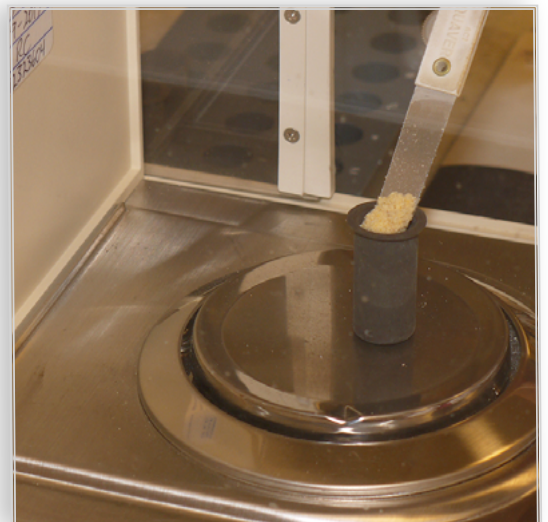
**Mycotoxin Monitoring Programs.** In FY 2016, FGIS initiated monitoring programs for deoxynivalenol (DON) and aflatoxins, respectively, as part of an overall mycotoxin quality assurance program. Under the mycotoxin monitoring programs, a percentage of original inspection results obtained by service providers using an FGIS approved test kit are compared to the results obtained from FGIS' reference methods. FGIS reference methods utilize highly sensitive and selective instrumentation; ultra-high performance liquid chromatography (UHPLC)/tandem mass spectrometry and UHPLC/fluorescence, for DON and aflatoxins, respectively. Weekly and annual reports showing a comparison of the results obtained from the original inspection to those obtained by FGIS' reference method are provided to testing locations to assess their performance. Routine correspondence between official service providers and FGIS chemists are maintained to aid in report interpretation, quality assurance, and resolution of testing issues. In FY 2017, FGIS continued both DON and aflatoxins monitoring programs where 1,182 samples were submitted and analyzed from 59 specified service points (SSPs) for DON and 2,064 samples from 111 SSPs for aflatoxins.

**Wheat Functionality.** The intrinsic qualities of wheat affect the quality of end products. To best determine the ability of wheat to meet specific end-use needs, accurate test methods are needed to differentiate functional qualities. These methods should also be practical, rapid, and reproducible among different laboratories to provide value transparency from the producer to the processor and provide information that better predicts appropriate end uses, thereby enhancing the marketability of U.S. wheat. The Falling Number test is an important measure of the effect of sprout damage on wheat and an indicator of the performance of wheat during the processing of flour for making various food products. In FY 2017, FGIS completed two rounds of check sample distributions and the second year of Falling Number inspection monitoring to evaluate accuracy of official testing. Reports were issued for both check sample distributions and monitoring program results summarizing testing performance. Also, FGIS personnel provided on-site Falling Number training and evaluated analyst testing performance.



## Reference Method Analyses

FGIS establishes and performs reference methods for protein, moisture, oil, fatty acid composition, and mycotoxins. These methods are used to maintain the accuracy of current testing in the official inspection system and to support development of new rapid field tests. The protein, moisture, oil, and fatty acid reference analyses support the near-infrared spectroscopic, dielectric, and nuclear magnetic resonance instruments used for rapid inspection at field locations that perform official testing. The mycotoxin reference analyses support the evaluation and standardization of rapid tests for official and commercial grain inspection, and support quality assurance programs to ensure consistent and reliable testing results. Analysis by the reference method is available upon applicant request for Board Appeals of mycotoxins – aflatoxin, deoxynivalenol, fumonisin, ochratoxin A, and zearalenone.



In FY 2017, FGIS validated its reference method for the determination of DON in super cereal plus and corn soy blend plus. Subsequently, three hundred corn soy blend plus and twenty-four super cereal plus samples were analyzed in support of commodity inspections.

## Biotechnology

The Biotechnology Proficiency Program now involves 210 organizations on five continents – Africa, Asia, Europe, and North and South America, with more than 80 percent of the participants from organizations outside the United States. FGIS bi-annually disseminates blind test samples to participants and compiles and disseminates the results of tests. This program, which FGIS initiated in 2002, enables organizations to assess and improve their accuracy and precision in identifying GE events in grains and oilseeds and gives grain buyers and sellers confidence in the results produced by GE testing laboratories: <https://www.gipsa.usda.gov/fgis/proficiencyprogram.aspx>



**Harmonizing Biotech Reference Methods.** There is a need for highly specific and accurate tests for the various GE crops grown in the United States. FGIS has developed intra-laboratory validated real-time polymerase chain reaction methods and has evaluated the accuracy, reliability, and proficiency of publicly available methods used to detect and identify GE grains and oilseeds. FGIS participated on a scientific panel of experts engaging U.S. stakeholders and influencing outcomes on issues related to testing of GE traits in grains with the goal of developing global scientific consensus regarding the analysis of transgenic events. FGIS continues to collaborate with international organizations such as Analytical Excellence through Industry Collaboration, International Organization for Standardization, American Association of Cereal Chemists, Institute for Reference Materials and Measurements, and the Canadian Grain Commission to keep harmonize testing technologies for GE grains and oilseeds.

## Sensory Inspections

**2017 Sorghum Odor Alignment Project.** In FY 2017, FGIS continued work on the sorghum odor alignment project, which is a collaboration with official agencies and the sorghum industry. Because sorghum odor determination is inherently difficult, FGIS developed a program to strengthen alignment between origin and destination odor results. The sorghum alignment project is a three-way calibration procedure used to confirm alignment between origin inspectors in the interior and inspectors at FGIS export facilities with the BAR. These odor assessments are made independently of each other and forwarded to the BAR, where the results are cataloged and analyzed for accuracy. The project helped build cohesion between all three groups, which led to consistent and reliable results for U.S. exporters. In FY 2017, inspectors at domestic and export service points have been able to achieve an alignment accuracy rate of 97 percent with the BAR.





## Standardizing Commercial Grain Inspection Equipment

**National Type Evaluation Program (NTEP).** In FY 2017, FGIS continued the cooperative effort with the National Conference on Weights and Measures (NCWM), and the National Institute for Standards and Technology to standardize commercial inspection equipment. The commercial inspection equipment includes moisture meters and any test weight modules contained within moisture meters as well as near-infrared analyzers for protein, oil, and starch. FGIS served as the sole evaluation laboratory for grain inspection equipment under the NCWM NTEP.

FGIS collected grain moisture meter calibration data for eight instrument models as part of the NTEP ongoing calibration program. Calibrations developed in this program provide traceability throughout the official FGIS moisture program, including the air oven reference method, and they are used in the majority of moisture meters used for commercial grain transactions throughout the U.S.

In FY 2017, FGIS' NTEP laboratory coordinated its issuance of Certificates of Conformance with FGIS' implementation of calibrations for the official moisture meter models for use with the major grains. This close coordination ensured that State-regulated commercial moisture meter users could use the same meters and calibrations as those used in official inspection.

In FY 2017, the NTEP laboratory began evaluation of a near-infrared analyzer for moisture, oil, and protein. In FY 2018, FGIS will collect grain moisture meter calibration data for eight NTEP models and will conduct NTEP testing for new grain inspection equipment models upon request.



## Rice Inspection Methods

The economic value of rice is based on its milling yield. FGIS has approved laboratory equipment and procedures to determine the milling yield as equivalent to the milling yield achieved by commercial rice mills.

In FY 2016, FGIS initiated a cooperative agreement with the University of California, Davis, to evaluate whether the milling performance of the Grainman No. 65 remains representative of the milling yield obtained by commercial rice mills, and if not, what adjustments can be made to Grainman No. 65 to ensure representative results. In FY 2017, the samples were collected from cooperating commercial rice mills in Arkansas, California, and Louisiana as part of the first year of the proposed two-year study. In FY 2018, sample collection will continue and the University of California, Davis, will issue a report on the findings from the first year of the study.



## Inspection Light Study

Proper lighting of inspection surfaces is critical for the accurate identification of damaged kernels in grains and commodities. The advent of long life, energy efficient and powerful light emitting diodes (LED); has brought the possibility of their use to the inspection industry, thereby saving money on power consumption as well as replacement costs.

Unlike conventional incandescent light bulbs, LEDs do not typically illuminate the full visible spectrum. Even those LEDs that appear white have a strong peak in the blue region and a small peak in the red region. Before LEDs may be used for official inspection, it must be determined if they have an acceptable spectrum and specifications for the quantity of light in each region of the visible spectrum must be established. In FY 2017, a study was conducted to establish acceptable visible spectral criteria for inspection purposes and evaluate three currently available LED lights compared to the approved fluorescent light bulbs. In FY 2018, the study findings will be presented to the Grain Inspection Advisory Committee.



## Improving Employee Safety for Railcar Stowage Exams

Managing and reducing the hazard of falling from railcars is a priority of both FGIS and loading facilities. FGIS, in conjunction with cooperating loading facilities, has determined that in many locations it is feasible for an inspector to perform pre-loading stowage examinations from inside the inspection lab using video cameras mounted above the cars. This eliminates the need to climb on top of the railcars to perform the inspection. With this arrangement, the railcars are examined a few minutes before they are loaded and the need to climb on top of railcars is eliminated.



## Promoting U.S. Grain to International Customers

FGIS personnel frequently meet with delegations visiting from other countries to brief them on the U.S. grain marketing system, our national inspection and weighing system, U.S. grain standards, and FGIS' mission. Many of these delegations are sponsored by USDA Cooperator organizations like U.S. Wheat Associates and U.S. Grains Council, which arrange visits to grain production areas, FGIS field offices, onsite laboratories at export grain elevators, and the FGIS National Grain Center (NGC) in Kansas City, Missouri. At the NGC, delegations often receive technical training on analytical testing procedures and grain inspection methods and procedures.

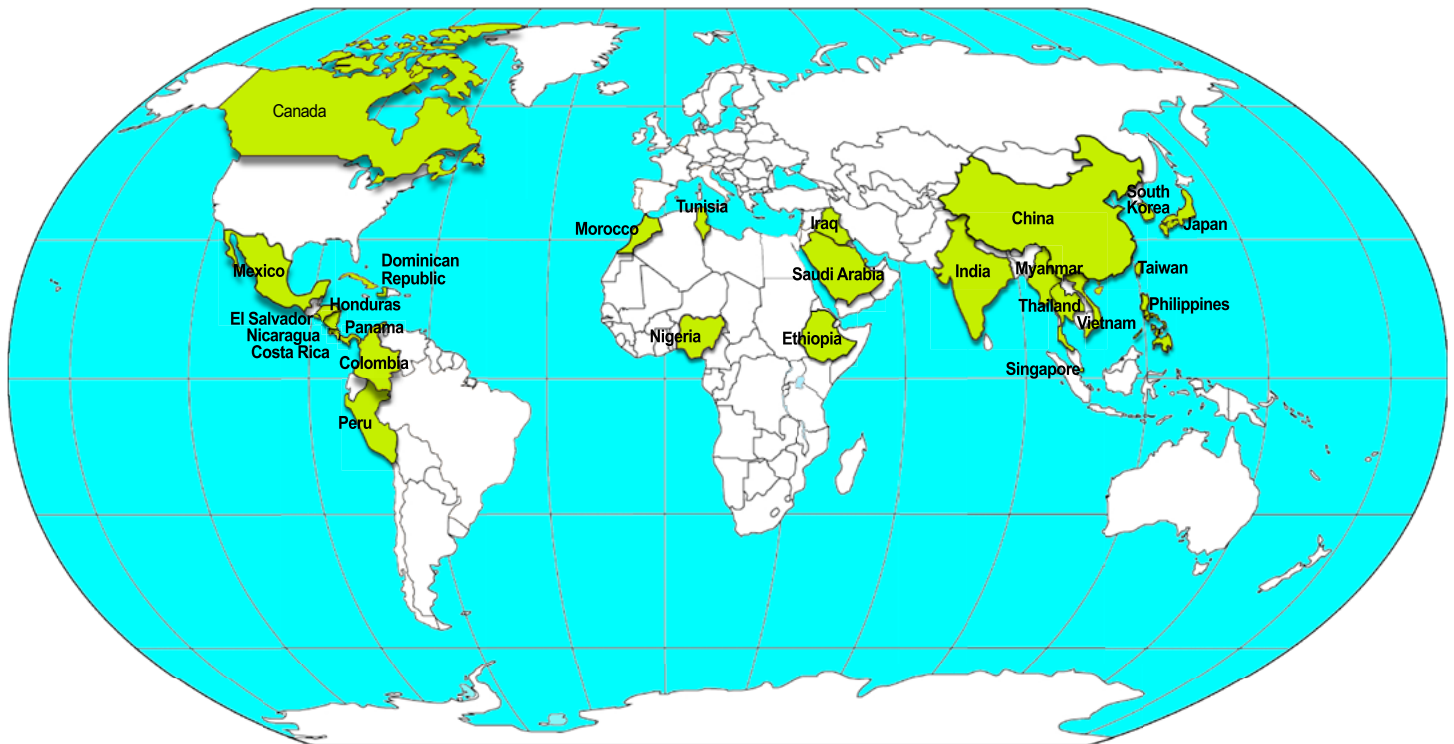


Briefings are tailored to address each group's interests and concerns. Presentations include explanations of the various services available from FGIS, the Agency's use of the latest technology to provide grain traders with accurate and reliable inspection and weighing information and, for importers or potential importers new to the U.S. grain market, information on contracting for the quality they desire.

These briefings foster a better understanding of the entire U.S. grain marketing system and serve to enhance purchasers' confidence in U.S. grain. Ultimately, these efforts help move our nation's harvest to end-users around the globe.

## Visiting Trade and Governmental Teams

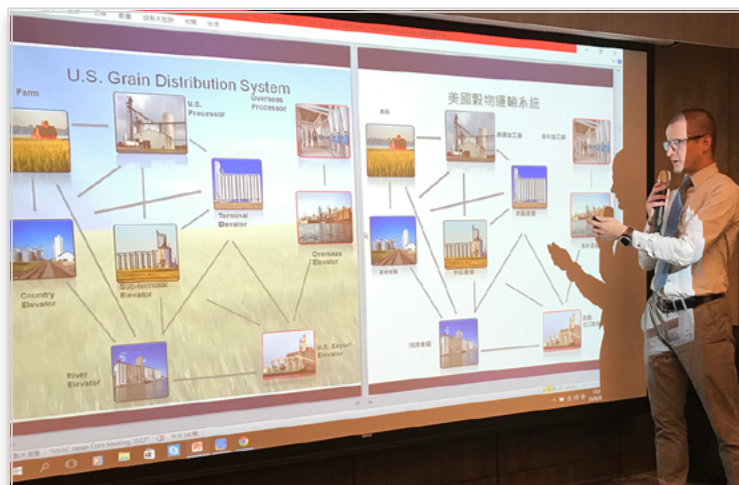
During FY 2017, FGIS personnel met with 40 teams from 26 countries.



Canada	Honduras	Myanmar	Singapore
China	India	Nicaragua	Taiwan
Colombia	Iraq	Nigeria	Thailand
Costa Rica	Japan	Panama	Tunisia
Dominican Republic	Korea	Peru	Vietnam
El Salvador	Mexico	Philippines	
Ethiopia	Morocco	Saudi Arabia	

## International Activities

**Technical Assistance.** In FY 2017, FGIS responded to customer needs for technical assistance in foreign markets. Exporters, importers, and end-users of U.S. grains and oilseeds, as well as other USDA agencies, USDA cooperator organizations, and other governments, occasionally ask for FGIS personnel to provide expertise. These activities include representing the Agency at grain marketing and grain grading seminars, meeting with foreign governments and grain industry representatives to resolve grain quality and weight discrepancies, helping other countries develop domestic grain and commodity standards and marketing infrastructures, assisting importers with quality specifications, and training local inspectors in U.S. inspection methods and procedures. Such activities typically have been funded through various programs administered by USDA's Foreign Agricultural Service (FAS) or directly by FGIS.



**Southeast Asia Outreach.** In September, FGIS temporarily stationed two International Grain Marketing Specialists in Asia for 4 weeks to proactively work with overseas Asian customers and their governments. FGIS was able to address immediate and long-term issues in the region, promote a better understanding and adoption of U.S. sampling and inspection methods to minimize differences in results, and develop face-to-face relationships with customers, USDA Cooperators and government officials. They traveled to Philippines, China, Japan, Taiwan, Myanmar, Singapore, and South Korea to conduct seminars and meeting with individuals and groups involved in the grain and milling industry in Asia. The seminars, organized with the help of FAS, U.S. Wheat Associates, and U.S. Grains

Council, served to educate foreign buyers of U.S. grain, as well as Governmental officials in the five countries. They were able to address several grain quality issues with the importers. The visit to Myanmar was very important to establish contacts with buyers and government officials so they understand U.S. grain standards, the high quality of U.S. grain exports, and the important role FGIS plays in U.S. grain exports.

**China's Grain Export/Import Law.** FGIS joined with other USDA agencies and U.S. grain industry representatives to form a working group to address China's new Grain Export and Import Law, Decree 177. Decree 177 imposes a number of registration and inspection requirements on exporters, including the creation of a registration list of commodity and pulse handlers and export facilities. The Departmental Initiatives and International Affairs (DIIA) took the lead in creating the registration list and provides Chinese officials with an updated list every 2 weeks to post on their government website. Exporters not included on China's registration list will not be permitted to discharge their vessels in China.

**Mexico’s Zero Tolerance for Soil in Grain Shipments.** FGIS worked with the Animal and Plant Health Inspection Service (APHIS) to collect and review file grain and pulse samples identified by Mexican inspectors as containing soil for which Mexico has a zero tolerance. FGIS field offices and official agencies examined the samples for the presence of soil. During the review of the samples, some soil was found.



**Corn, Sorghum, and Wheat Quality Surveys.** FGIS coordinated with U.S. Grains Council and U.S. Wheat Associates to conduct export corn, sorghum, and wheat quality surveys. FGIS assisted with the surveys by collecting, grading, testing samples, and providing export inspection data. The surveys are conducted annually.

**Jordan’s Broken Corn and Foreign Material (BCFM) Limit.** Jordan’s Ministry of Agriculture rejected three U.S. corn shipments due to levels of BCFM exceeding their limit of 7.5 percent at destination. DIIA worked with the Federal Acquisition Service and the U.S. State Department to negotiate the release of those shipments. FGIS sent an inspector over to Amman, Aqaba, and Jordan, to observe their sampling and inspection procedures at the Port of Aqaba and three other labs in the country. FGIS also conducted training for their inspectors explaining the sampling and grading procedures used by FGIS. Additional meetings with government officials are planned for next year.



### Summary of International Travel for FY 2017

Purpose	Number of Travelers	Countries Visited	Dates of Visits
Stowage Examinations and Grain Inspections	1 - 4 per trip	Canada	17 trips on various dates
Asia Pacific Economic Cooperation	1	Vietnam	November 6-12, 2016
Rice Seminar	1	Canada	March 21-23, 2017
USDA/Grain Industry Trip to China to Discuss Decree 177	1	China	April 24-28, 2017
Codex Committee on Methods of Analysis and Sampling	1	Hungary	May 5-12, 2017
China Workshop on Quarantine, Inspection and Detection Methods	1	China	May 21-25, 2017
Global Low Level Presence Initiative	1	Italy	June 11-16, 2017
CDO - Southeast Asia	2	China, Japan, Myanmar, Philippines, Singapore, South Korea, Taiwan	September 1-30, 2017



# Section IV

## Protecting the Integrity of U.S. Grain and Related Markets

### Alleged Violations

At the beginning of fiscal year FY 2017, 20 cases involving alleged violations of the USGSA and the AMA were pending. During the FY, FGIS opened 5 new cases stemming from engaging in prohibited or deceptive grain handling practices, exporting grain without official personnel onsite to witness the loading. FGIS closed 18 cases from prior (2014, 2015, and 2016) years during FY 2017. There are currently 7 pending cases.

### Registrants to Export Grain

The USGSA requires that all persons who buy, handle, weigh, or transport 15,000 metric tons or more of U.S. grain for sale in foreign commerce during the current or previous calendar year must register with FGIS. During FY 2017, FGIS issued 100 Certificates of Registration to individuals and firms to export grain.

### Domestic Grain Inspection

FGIS oversees 45 official State and private agencies that provide official services under the USGSA. FGIS supervises 33 official private agencies and 7 official State agencies that are designated to provide official inspection and/or weighing services in domestic markets; 4 official State agencies that are delegated to provide mandatory official export inspection and weighing services and designated to provide official domestic inspection and weighing services within the State; and 1 official State agency that is delegated to provide mandatory official export inspection and weighing services within the State.

Prior to the changes made in the FY 2015 Reauthorization, the USGSA required that designations be renewed every 3 years. As a result of the Reauthorization, designations are now valid for up to 5 years. In FY 2017, FGIS renewed 13 official agencies. There were 10 private and 3 State agencies renewed for full 5-year designations.

In addition, FGIS designated one official agency for weighing, approved the sale of one official agency, and amended the geographic area for two official agencies.

### **Response to Inadvertent Release of Unapproved Traits Into the Marketplace.**

In recent years, there have been rare occasions when unapproved GE events entered into the U.S. grain handling system. When such an inadvertent release occurs, a rapid response is necessary to identify and validate methods to detect the trait and thereby protect the integrity of U.S. grain markets. The testing methods must be highly specific and sensitive to effectively maintain confidence in U.S. grain marketing systems. Current detection methods within FGIS' Biotechnology Laboratory focus on high-throughput DNA extraction methodologies, which enables FGIS to more effectively respond to inadvertently released products. FGIS has completed the development of high-throughput DNA extraction methods for corn, soybeans, wheat, and rice. FGIS assists government and private laboratories that use protein and DNA- based technologies by performing impartial third-party verification of their methods for both qualitative and quantitative detection of transgenic events in GE crops. FGIS involvement in responding to such incidents facilitates harmonization of sampling plans and of international testing for GE grains and oilseeds. FGIS provides expertise to USDA's APHIS when responding to inadvertent releases of unapproved GE events.



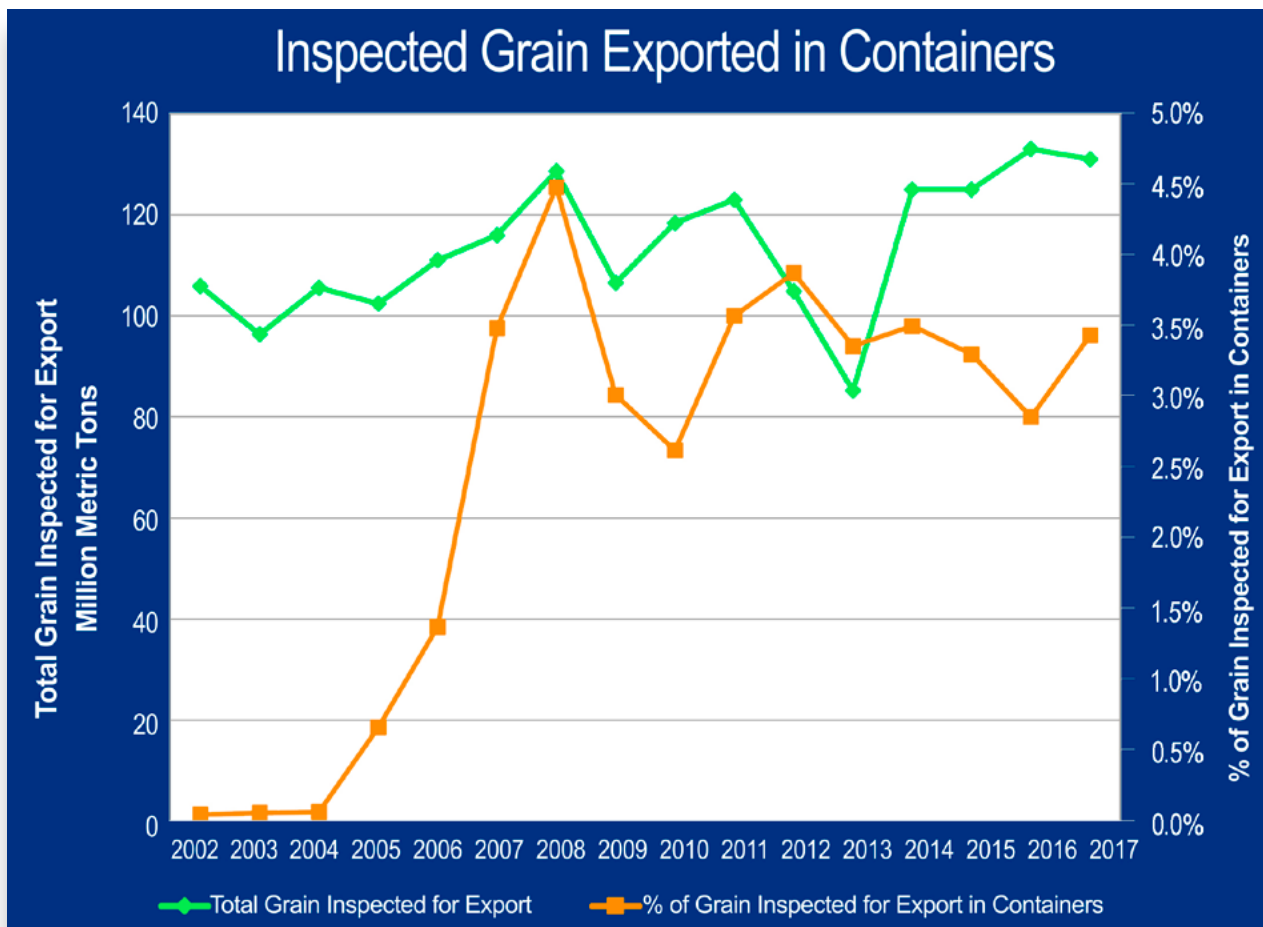
## Container Shipments

In the past decade, the U.S. grain industry has experienced a significant increase in the demand for grain exported in containers. A surplus of empty containers allows grain exporters to capitalize on opportunities to ship grain at a lower freight rate and deliver grain to small business entities around the world. In FY 2008, containerized grain exports peaked at 4.5 percent of all grain exports.

Expansion of the containerized grain export market has exceeded most forecasts. Inspection of containerized cargo has increased from 0.1 percent of total grain exported (metric tons) in 2002 to 3.4 percent of total grain exported (metric tons) in FY 2017 and represented

1.4 percent of total domestic and export grain officially inspected (metric tons) by FGIS and official service providers in FY 2017.

In 2002, 6 standardized grain inspection/weighing service points exported grain by container. Currently, there are 164 standardized grain inspections/weighing service points, with the majority in proximity to the railroad hub in Chicago. Initially, most of the container loading operations were based in the Pacific Northwest, where empty containers were abundant at export container terminals. However, in the past 11 years, much of the activity shifted to the Midwest, due to the close proximity to the grain supply and the rail yards that handle containerized cargo.



## Meeting the Needs of International Customers

FGIS administers a formal process for investigating grain quality and weight discrepancies. When an importer of U.S. grain submits a claim regarding quality or weight, FGIS analyzes samples retained on file from the original inspection and analyzes samples submitted from the complainant (if the buyer chooses to submit them) and evaluates the accuracy of the initial inspection. This process allows FGIS to verify whether the original inspection and weighing service provided at the time of loading was correct, based on all available information. FGIS then issues a report outlining its findings.

Occasionally, a particular buyer or importing country reports repeated discrepancies which cannot be resolved by a

shipment-by-shipment review under this process. In such cases, FGIS may conduct collaborative sample studies or joint monitoring activities to address the discrepancy in a more comprehensive manner.

In FY 2017, FGIS received five quality complaints and no weight complaints from importers on grains inspected under the U.S. Grain Standards Act, as amended. The complaints involved 318,923 metric tons or 0.2 percent by weight, of the total amount of grain exported during the year.

### Complaints Reported by Importers on Inspection and Weighing in FY 2017

Complainant	Grain/Commodity	Number of Complaints	Nature of Complaint
China	Wheat	1	Ergot
China	Soybeans	4	Foreign Material, Weed Seeds, Chemical Residues, and Treated Seeds
<b>TOTAL</b>		<b>5</b>	

# Section V

## Providing Official Grain Inspection and Weighing Services

### Partnerships with States and Private Entities

FGIS manages the national inspection and weighing system through a unique network of approximately 2,000 staff members at Federal, State, and private laboratories that serve grain producers, handlers, processors, and exporters across the country.

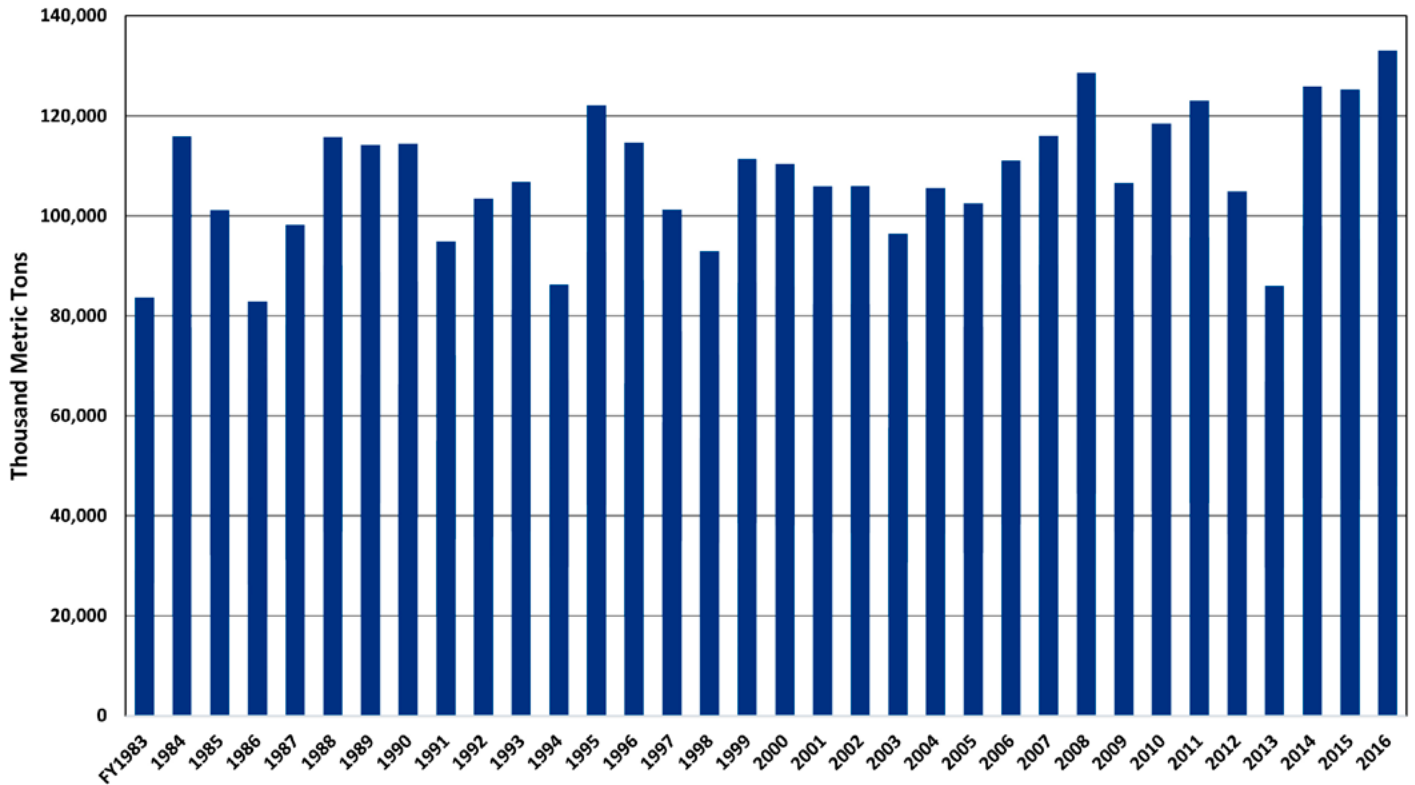
FGIS' State and private partners are authorized to provide official services on FGIS' behalf under the authority of the USGSA and the AMA. FGIS delegates States to provide official inspection and weighing of U.S. grain at export port locations and designates States and private agencies to provide official inspection and weighing services in the

domestic market. FGIS has 42 agreements with States and private agencies to provide sampling or inspection services for miscellaneous processed commodities, graded commodities, or rice under the AMA.



Exports of U.S. grain for FY 2017 exceeded 146.2 million metric tons, reaching a new record high for FGIS for the second consecutive year. This represents an increase of 9.7 percent compared to the previous record of 133.3 million metric tons inspected and weighed for the same reporting period in FY 2016.

### Export Inspections



## Distillers Dried Grains

Distillers dried grains (DDGs) is a co-product of ethanol production resulting from the remaining fraction (protein, fat, and fiber) of grain (corn, sorghum, wheat, etc.) after the starch is converted to sugar and then to ethanol during the fermentation process. Roughly 17 pounds of DDGs can be produced from 1 bushel of corn (1 bu corn = 56 lbs), which is approximately two-thirds starch. Because of the composition of DDGs (30 percent protein, 11 percent fat, and 7-9 percent fiber), it is a very nutritious source of energy for livestock and is used to replace traditional feed grains and meals in limited quantities.

The production of DDGs has soared in recent years as ethanol production has grown. The U.S. produced an estimated 46.32 million tons of DDGs in the 2016/17 crop year, nearly 5.8 times the level in 2003/04. Increasing supply, coupled with high prices for competing feeds (soybean meal and corn) and foreign market development efforts by USDA cooperators, led to a surge in U.S. DDG exports beginning in 2008. Exports now constitute about 24 percent of domestic DDG production and reached a record \$2.2 billion in calendar year 2016. FGIS facilitates the marketing of DDGs by providing phytosanitary inspections on behalf of APHIS. During FY 2017, FGIS sampled over 1.4 million metric tons of exported DDGs. Given the expected gradual growth in foreign demand, FGIS expects this work to increase for FY 2018.



## Providing Scale Testing for the Railroad Industry

FGIS owns and operates five specially designed and built railroad track scale test cars for testing master scales, grain industry railroad track scales, and other railroad track scales. The test cars are maintained and operated out of the FGIS Master Scale Depot in Chicago, Illinois.

The Master Scale Depot in Chicago is a National Institute of Standards and Technology-certified, Echelon III Metrology Laboratory, where FGIS annually calibrates three 100,000-pound test car units that are used to calibrate the FGIS Master Scale and 10 railroad and State-owned master scales.



The Master Scale Depot is used to calibrate railroad test weight cars that are used to calibrate railroad track scales throughout the country. FGIS also has two specialized test weight cars that are used primarily to test and calibrate commercial railroad track scales.

The Master Scale Depot performs weight calibrations on test weights and test weight cars ranging from 25 to 112,000 pounds. Commercial test weights ranging from 25 to 1,000 pounds are calibrated on a cost-recovery basis. Test weight cars are calibrated at the Master Scale Depot, and costs are recovered through a funding arrangement with the Association of American Railroads (AAR).

Under an agreement with the AAR, FGIS annually tests all master scales and performs a number of field calibrations associated with the program. The AAR has an agreement with FGIS under which it provides annual funding that supports the Master Scale Calibration Program.



**Inspection Program Data  
Fiscal Years 2015-2017**

	FISCAL YEARS		
	2015	2016	2017
Quantity of Grain Produced <sup>1</sup> (Mmt) <sup>2</sup>	529.7	582.0	550.9

**QUANTITY OF STANDARDIZED GRAIN OFFICIALLY INSPECTED<sup>3</sup> (Mmt)**

Domestic	180.2	188.9	194.3
Export by FGIS	82.4	85.7	90.9
Export by Delegated States	31.0	35.7	40.2
Export by Designated States	11.9	11.8	14.9
<b>TOTAL</b>	<b>305.5</b>	<b>322.1</b>	<b>340.3</b>

<sup>1</sup> Quantity of Grain Produced Source: USDA-National Agricultural Statistics Service, Quick Stats. This figure includes production of wheat, corn, sorghum, barley, oats, and soybeans.

<sup>2</sup> Million Metric tons.

<sup>3</sup> Quality of Standardized Grain Officially Inspected includes grains for which FGIS maintains official standards: barley, canola, corn, flaxseed, oats, rye, sorghum, soybeans, sunflower seed, triticale, wheat, and mixed grain.

**Inspection Program Data  
Fiscal Years 2015-2017**
**FISCAL YEARS**

2015

2016

2017

**NUMBER OF OFFICIAL ORIGINAL INSPECTIONS<sup>4</sup>**

	2015	2016	2017
<b>FGIS</b>	90,434	116,332	115,643
<b>Delegated States/Official Agencies</b>	3,363,812	3,268,868	3,333,922
<b>TOTAL</b>	<b>3,454,246</b>	<b>3,384,806</b>	<b>3,449,565</b>

**NUMBER OF GRAIN REINSPECTIONS**

	2015	2016	2017
<b>FGIS</b>	299	393	329
<b>Delegated States/Official Agencies</b>	31,287	21,341	26,299
<b>TOTAL</b>	<b>31,586</b>	<b>21,734</b>	<b>26,628</b>

**NUMBER OF GRAIN INSPECTION APPEALS**

	2015	2016	2017
<b>Field Offices</b>	4,209	2,544	3,610
<b>Board of Appeals and Review</b>	476	371	481
<b>TOTAL</b>	<b>4,685</b>	<b>2,915</b>	<b>4,091</b>

**NUMBER OF OFFICIAL COMMERCIAL**

	2015	2016	2017
<b>FGIS</b>	10,940	17,958	14,682
<b>Delegated States/Official Agencies</b>	1,386,557	1,337,810	1,333,979
<b>TOTAL</b>	<b>1,397,349</b>	<b>1,355,768</b>	<b>1,348,661</b>

**NUMBER OF BARLEY PROTEIN INSPECTIONS**

	2015	2016	2017
<b>FGIS</b>	26	33	2
<b>Delegated States/Official Agencies</b>	7,085	5,113	4,876
<b>TOTAL</b>	<b>7,111</b>	<b>5,146</b>	<b>4,878</b>

<sup>4</sup> Includes original inspections for grade, factor-only inspection, official criteria, and official commercial inspections.

**Inspection Program Data  
Fiscal Years 2015-2017**
**FISCAL YEARS**

2015

2016

2017

**NUMBER OF CORN PROTEIN, OIL, AND STARCH INSPECTIONS**

	2015	2016	2017
FGIS	4	4	0
Delegated States/Official Agencies	7,501	3,121	375
<b>TOTAL</b>	<b>7,505</b>	<b>3,125</b>	<b>375</b>

**NUMBER OF WHEAT PROTEIN INSPECTIONS**

	2015	2016	2017
FGIS	4,362	13,218	6,827
Delegated States/Official Agencies	433,127	444,221	505,992
<b>TOTAL</b>	<b>437,489</b>	<b>457,439</b>	<b>512,819</b>

**NUMBER OF SOYBEAN PROTEIN AND OIL INSPECTIONS**

	2015	2016	2017
FGIS	6,518	6,467	7,690
Delegated States/Official Agencies	20,113	5,009	4,652
<b>TOTAL</b>	<b>26,631</b>	<b>11,476</b>	<b>12,342</b>

**NUMBER OF SUNFLOWER SEED OIL INSPECTIONS**

	2015	2016	2017
FGIS	0	0	0
Delegated States/Official Agencies	17,158	18,891	127,529
<b>TOTAL</b>	<b>17,158</b>	<b>18,981</b>	<b>127,529</b>

**NUMBER OF AFLATOXIN INSPECTIONS**

	2015	2016	2017
FGIS	2,694	2,786	2,392
Delegated States/Official Agencies	110,988	120,105	134,672
<b>TOTAL</b>	<b>113,682</b>	<b>122,891</b>	<b>137,064</b>

**Inspection Program Data  
Fiscal Years 2015-2017**

**FISCAL YEARS**

**2015**

**2016**

**2017**

**NUMBER OF DEOXYNIVALENOL INSPECTIONS**

<b>FGIS</b>	7,537	10,398	6,067
<b>Delegated States/Official Agencies</b>	182,650	126,626	136,170
<b>TOTAL</b>	<b>190,187</b>	<b>137,024</b>	<b>142,237</b>

**NUMBER OF FUMONISIN TESTS**

<b>FGIS</b>	0	55	12
<b>Delegated States/Official Agencies</b>	5,553	3,790	10,504
<b>TOTAL</b>	<b>5,553</b>	<b>3,845</b>	<b>10,516</b>

**Inspection Program Data  
Fiscal Years 2015-2017**
**FISCAL YEARS**

	2015	2016	2017
Quantity of Rice Produced (Mmt) (rough basis) <sup>5</sup>	8.8	10.2	8.1

**QUANTITY OF RICE INSPECTED (Mmt) (rough basis)**

FGIS	2.5	2.7	2.5
Cooperators	0.2	0.6	0.6
<b>TOTAL</b>	<b>2.7</b>	<b>3.3</b>	<b>3.1</b>

Number of Rice Appeals	115	147	251
Number of Rice Board Appeals	4	1	6

Quantity of Pulses Produced (Mmt) (beans, peas, lentils) <sup>5</sup>	2.4	3.2	2.6
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**QUANTITY OF PULSES INSPECTED (Mmt)**

FGIS	0.5	1.0	0.5
Cooperators	0.3	0.1	0.5
<b>TOTAL</b>	<b>0.8</b>	<b>1.1</b>	<b>1.0</b>

Number of Pulse Appeals	302	341	332
Number of Pulse Board Appeals	16	29	25

<sup>5</sup> Source: USDA-National Agricultural Statistics Service, Quick Stats.

**Weighing Program Data  
Fiscal Years 2015-2017**
**FISCAL YEARS**

<b>Official Weight Certificates Issued</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
	<b>FGIS</b>		
<b>Class X<sup>1</sup></b>	44,285	49,030	48,977
<b>Class Y<sup>2</sup></b>	17,972	29,509	23,515
<b>TOTAL</b>	<b>62,257</b>	<b>78,539</b>	<b>72,492</b>

**DELEGATED STATES/OFFICIAL AGENCIES**

<b>Class X<sup>1</sup></b>	185,012	169,906	257,527
<b>Class Y<sup>2</sup></b>	63,711	57,068	67,166
<b>TOTAL</b>	<b>248,723</b>	<b>226,974</b>	<b>324,693</b>

**EXPORTED GRAIN WEIGHED (Mmt)**

<b>FGIS</b>	82.2	85.3	90.3
<b>Delegated States</b>	30.2	34.4	38.7
<b>TOTAL</b>	<b>112.4</b>	<b>119.7</b>	<b>129.0</b>

<sup>1</sup> Class X weighing involves 100 percent supervision of weighing.

<sup>2</sup> Class Y weighing involves a minimum of 25 percent supervision of weighing.

**Weighing Program Data  
Fiscal Years 2015-2017**
**FISCAL YEARS**

2015

2016

2017

**NUMBER OF CERTIFIED SCALES IN SERVICE**

<b>Export Elevators</b>	231	227	318
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**NUMBER OF SCALES TESTED**

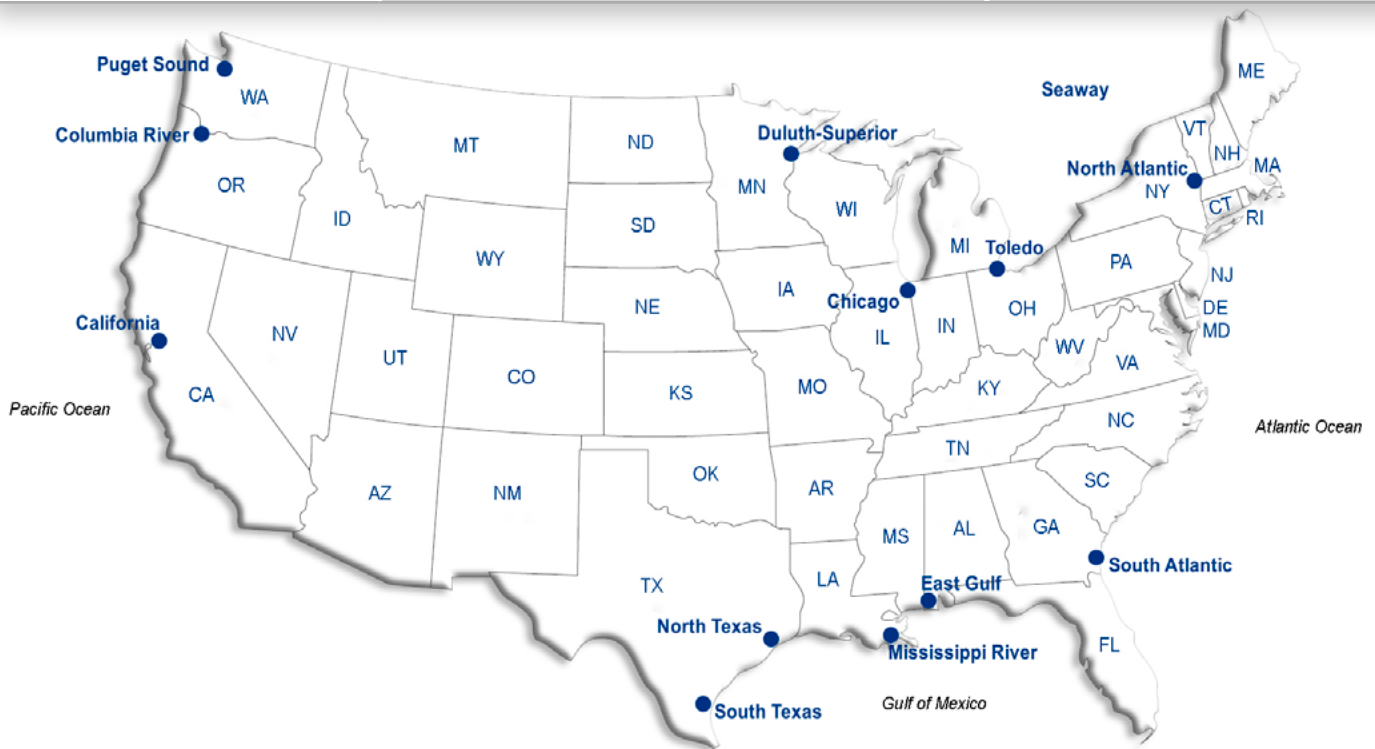
<b>Railroad Track Scales</b>	110	101	76
<b>Hopper Scales</b>	307	302	316
<b>Vehicle Scales</b>	381	396	295

**DELEGATED STATES/OFFICIAL AGENCIES**

<b>Delegated and Designated States</b>	4	4	4
<b>Delegated States</b>	1	1	1
<b>Designated States</b>	7	7	7
<b>Designated Private Agencies</b>	37	34	33
<b>TOTAL</b>	<b>49</b>	<b>46</b>	<b>45</b>

### Volume of Export Grain Inspections by Port Areas FY 2017

Port Areas	Metric Tons (mt)	Percent of Total U.S. Exports
California	20,609	0.01%
Chicago	445,117	0.30%
Columbia River	31,284,603	21.39%
Duluth-Superior	614,292	0.42%
East Gulf	983,375	0.67%
Interior <sup>1</sup>	15,964,119	10.91%
Lake Superior	228,291	0.16%
Mississippi River	70,119,092	47.93%
North Atlantic	380,689	0.26%
North Texas	8,669,175	5.93%
Puget Sound	9,328,795	6.38%
South Atlantic	2,156,227	1.47%
South Texas	4,804,635	3.28%
Seaway	348,553	0.24%
Toledo	943,948	0.65%
<b>TOTAL</b>	<b>146,291,520</b>	<b>100.00%</b>



<sup>1</sup> Figures include all rail and containers loaded in the continental United States destined for export. The primary destinations for rail shipments is Mexico, with containers shipped worldwide through established ports.



# Section VI

## Financial Information

### FGIS User Fee Accounts<sup>1</sup>

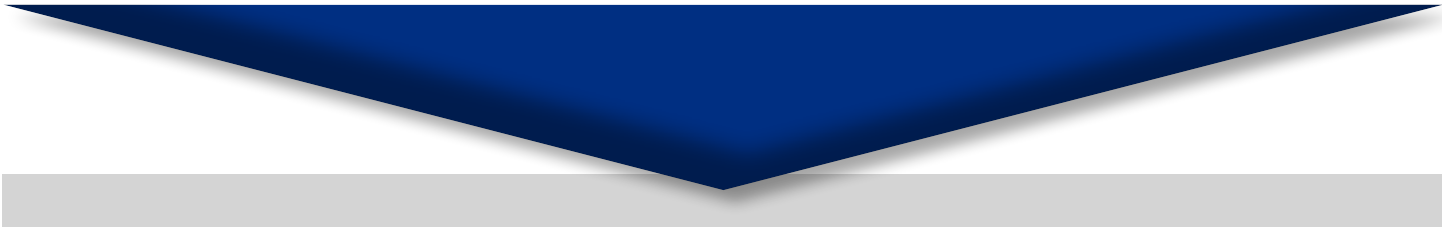
	Revenue	Obligations	Profit/Loss	Operating Reserves
<b>U.S. Grain Standards Act</b>				
Inspection & Weighing	\$44,763,877	\$40,080,284	\$4,683,593	\$23,546,619
Official Agencies	\$0	\$1,779,960	(\$1,779,960)	\$6,950,142
<b>Agricultural Marketing Act</b>				
Rice	\$5,842,913	\$5,439,814	\$403,099	\$9,283,708
Commodities	\$2,957,556	\$3,418,981	(\$461,425)	\$326,523
<b>TOTAL FY 2017</b>	<b>\$53,564,346</b>	<b>\$50,719,039</b>	<b>\$2,845,307</b>	<b>\$40,106,992</b>
			<b>Less FY 2017 Sequestration</b>	<b>(\$3,013,898)</b>
				<b>\$37,093,094</b>

### Appropriations (Dollars in millions)<sup>2</sup>

	FY 2011	FY2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Discretionary Appropriations	\$17.79	\$16.48	\$20.8	\$17.91	\$20.0	\$20.0	\$20.0

<sup>1</sup> Obligations are total obligations to support the program during fiscal year 2017 regardless of budget period funding source used.

<sup>2</sup> Appropriations includes sequestration and rescission amounts



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January 2018