



United States
Department of
Agriculture

Federal Grain
Inspection
Service

Annual Report to Congress, 1991



Authority

The United States Grain Standards Act, as amended, requires the Administrator of the USDA Federal Grain Inspection Service to submit to the Senate and House Committees on Agriculture on December 1 of each year a report on the effectiveness of the official inspection and weighing system for the prior fiscal year, and to develop recommendations for legislative changes to accomplish the objectives of the Act.

The Act also requires the Administrator to submit a summary of valid complaints received from foreign purchasers and prospective purchasers of U.S. grain and of their resolution by the U.S. Department of Agriculture during the prior fiscal year. That summary is included as part of this Annual Report.

Mission

The mission of the Federal Grain Inspection Service is to facilitate the marketing of grain, oilseeds, pulses, rice, and related commodities by establishing descriptive standards and terms; accurately and consistently certifying quality; providing for uniform official inspection and weighing; carrying out assigned regulatory and service responsibilities; and providing the framework for commodity quality improvement incentives to both domestic and foreign buyers.



United States
Department of
Agriculture

Federal Grain
Inspection
Service

P.O. Box 96454
Washington, DC
20090-6454

December 1, 1991

Honorable E (Kika) de la Garza
Chairman, Committee on Agriculture
House of Representatives
Washington, DC 20515

Honorable Patrick J. Leahy
Chairman, Committee on Agriculture,
Nutrition, and Forestry
United States Senate
Washington, DC 20510

Dear Mr. Chairmen:

In compliance with the United States Grain Standards Act, as amended, the Federal Grain Inspection Service (FGIS) is submitting its fiscal year 1991 Annual Report to Congress. This report summarizes the Agency's responsibilities, accomplishments, program activities, and financial status.

The Grain Quality Title of the 1990 Farm Bill continues to influence the Agency. During the past year, FGIS conducted reviews of and proposed amendments to four U.S. Grain Standards; proposed establishing a new standard for canola; and initiated rulemaking to mandate aflatoxin testing of export corn. In addition, the Agency's Deputy Administrator was selected by the Secretary to serve as Grain Quality Coordinator, the Federal Government and USDA contact point for programs and provisions relating to grain quality and U.S. grain quality competitiveness.

During fiscal year 1991, FGIS continued efforts to improve the national grain inspection and weighing system. The Agency's key accomplishments included:

- * revising existing grain standards and developing new standards to facilitate the marketing of U.S. grain;
- * providing needed information by implementing new services, such as a permissive testing service for vomitoxin in wheat;
- * aggressively ensuring compliance with the U.S. Grain Standards Act and the Agricultural Marketing Act of 1946; and
- * expanding service capabilities by integrating faster, more accurate, and safer testing methodologies into the national grain inspection system such as quantitative aflatoxin tests, which report the actual aflatoxin content of samples in parts per billion.



The Federal Grain Inspection Service
is an agency of the
United States Department of Agriculture

FGIS' operating revenues from fees during fiscal year 1991 were \$29.1 million, with obligations of \$30.5 million, yielding a negative net operating margin of \$1.4 million. While the Agency decreased its obligations by nearly \$3.5 million from fiscal year 1990 levels, revenues decreased significantly, by \$1.6 million, compared to the previous year.

The total revenues included interest of \$442,923 on investments held in reserve. The revolving fund closed the fiscal year with an unobligated balance of \$9.4 million.

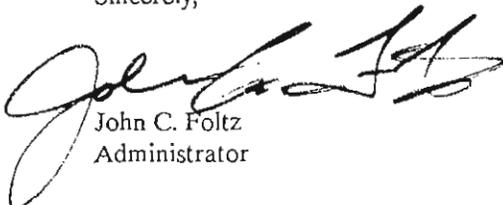
To offset decreased revenues in the inspection and weighing program, FGIS undertook a number of aggressive cost-cutting initiatives. Field offices were closed and consolidated, and reductions-in-force and extended furloughs were implemented.

Administrative and supervision costs represented 25 percent of total program costs, which is below the statutory limit of 40 percent. Appropriated obligations of approximately \$9.5 million, plus revolving fund obligations of \$30.5 million totalled \$40 million, \$2 million under fiscal year 1990 total program obligations. The fee-supported activities ended fiscal year 1991 at 76 percent of the total obligations.

The FGIS Advisory Committee, which was legislatively reauthorized through September 30, 1993, continues to provide valuable advice to the Administrator regarding the implementation of the U.S. Grain Standards Act. During fiscal year 1991, the Committee elected one of its members to serve as Chairman, an administrative change prescribed by USDA regulations. The group met four times to address issues affecting the grain industry and the Agency.

FGIS remains committed to quality and to ensuring that the official grain inspection and weighing system remains second to none.

Sincerely,



John C. Foltz
Administrator

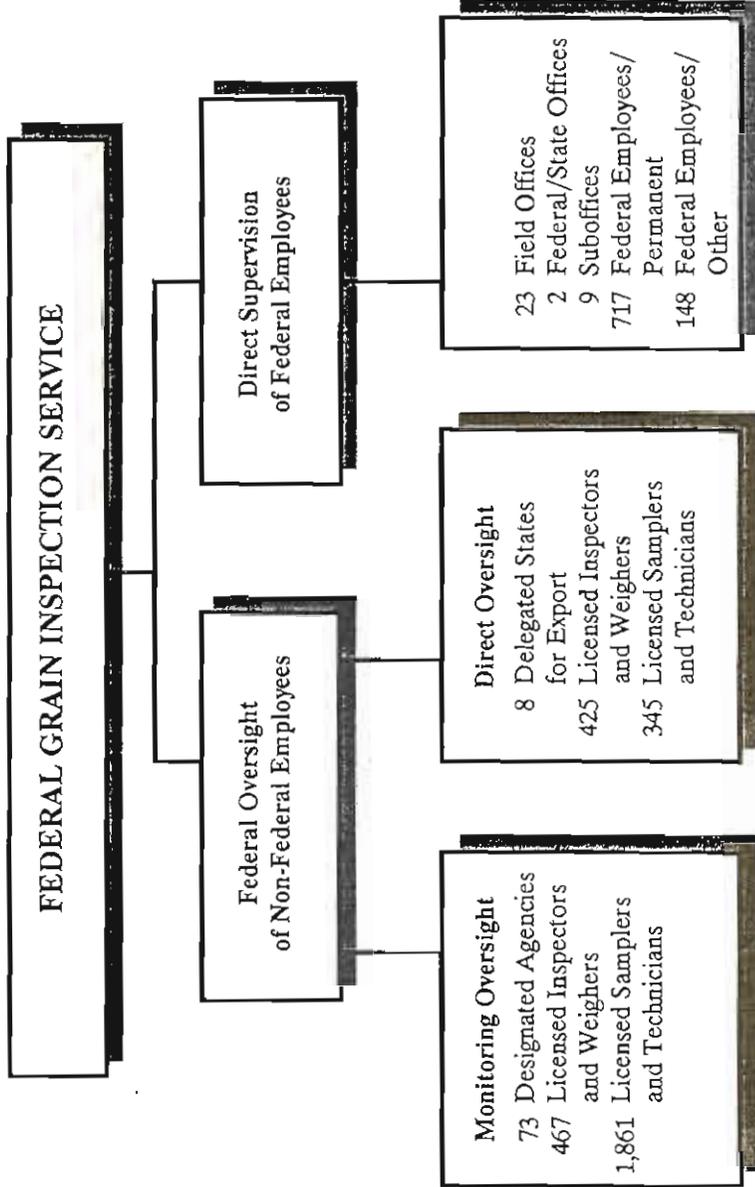
Contents

Letter from the Administrator	i
Outlook 1992: Issues and Concerns	1
Functions and Responsibilities	2
<i>Oversight Responsibilities</i>	
<i>Services by State and Agency Type</i>	
<i>U.S. Agricultural Exports</i>	
<i>Number of Inspections Performed</i>	
<i>Under the U.S. Grain Standards Act</i>	
<i>Volume of U.S. Grain Inspected for Export by Port Locations</i>	
Organizational Structure	9
<i>Organizational Chart</i>	
<i>Number of Employees per Division</i>	
<i>Employment History</i>	
<i>Performance of Weighing and Inspection Services</i>	
Activities and Accomplishments	
Inspection and Weighing	14
<i>Inspection Program Data</i>	
<i>Weighing Program Data</i>	
Research and Development	17
Standards and Procedures	19
Compliance Activities	21
<i>Overview of Compliance Activities</i>	
International Relations	26
<i>Importers' Complaints: Three-Year Summary</i>	
<i>Summary of Complaints Reported by Importers, FY 1991</i>	
<i>Briefings with Visiting Trade and Governmental Teams, FY 1991</i>	
<i>Activities Involving International Travel</i>	
Grain Dust Explosion Information	31
<i>Summary of Grain Dust Explosion Data</i>	
Budget Information	32

Outlook 1992

Canola Standards Implementation	<p>As a result of increased production and public interest, FGIS will establish and implement U.S. Standards for Canola under the United States Grain Standards Act. Both the standards and the national inspection system for canola will be effective in early calendar year 1992.</p>
Technology Implementation	<p>FGIS is developing a comprehensive technology implementation policy that will allow the Agency to address equipment needs in an organized and timely manner. The comprehensive policy will: (1) facilitate the progression from type evaluation testing and approval to calibration and field implementation; (2) improve communications between FGIS, official inspection agencies, manufacturers, commodity groups, and the grain industry regarding equipment approval activities; and (3) establish guidelines for updating equipment used in the official inspection system and making the transition to a new measurement technology. It may be necessary to operate the old and new systems simultaneously during the transition period. Until the new policy is approved, FGIS will not be able to respond to most manufacturer requests for equipment testing and approval.</p>
Wheat Classification	<p>FGIS, the Agricultural Research Service (ARS), the Agricultural Marketing Service, and the industry-sponsored Wheat Classification Working Group are continuing to develop an objective wheat classification system based on objective test results, rather than visual inspection to determine kernel color and morphology. FGIS is evaluating a single kernel hardness tester (SKHT), developed and patented by ARS, which measures individual kernel size, weight, crushing profile, and moisture content of 300 kernels in samples containing hard and soft kernels. The data are then used to determine single-kernel hardness and distribution within the sample.</p> <p>FGIS is considering a four-point classification method (hard, semi-hard, semi-soft, soft) to distinguish between hard and soft wheat classes. Hardness profile information obtained from 3 years' market samples, along with computer simulation, will assist FGIS in defining new classification parameters.</p> <p>Barring unforeseen delays, FGIS may purchase SKHT's, provide field training, and conduct a comparison of the old versus new classification systems in 1993. FGIS would then implement the SKHT for classification of hard and soft wheat in 1994. ARS is continuing its research in developing objective methods to determine a spring/winter wheat classification system.</p>
Wheat Variety 2163	<p>Wheat variety 2163 was released by Pioneer Hi-Bred International as a Hard Red Winter (HRW) wheat with Soft Red Winter (SRW) wheat parentage. Pioneer has since given its wheat breeding program to Kansas State University. During the 1990 crop year, when the variety was first grown in quantity, classification problems developed in southeastern and eastern Kansas. In those areas, 2163 was graded as HRW, SRW, or Mixed wheat because visual characteristics varied with growing conditions. To minimize potential problems during the 1991 crop year, FGIS held two public meetings and numerous grain grading seminars to assist in the proper classification of wheat according to current techniques.</p> <p>This year, 2163 has caused classification problems only in southeastern Kansas. In general, marketing has not been a problem because small amounts are being blended with more traditional HRW wheat varieties. During crop year 1991, Kansas State University released 5,000 bushels of foundation seed, enough to plant about 10,000 acres. This seed, along with seed saved from the 1991 crop, could result in more production of 2163 in the 1992 crop year. This provides potential for future classing and marketing problems.</p>

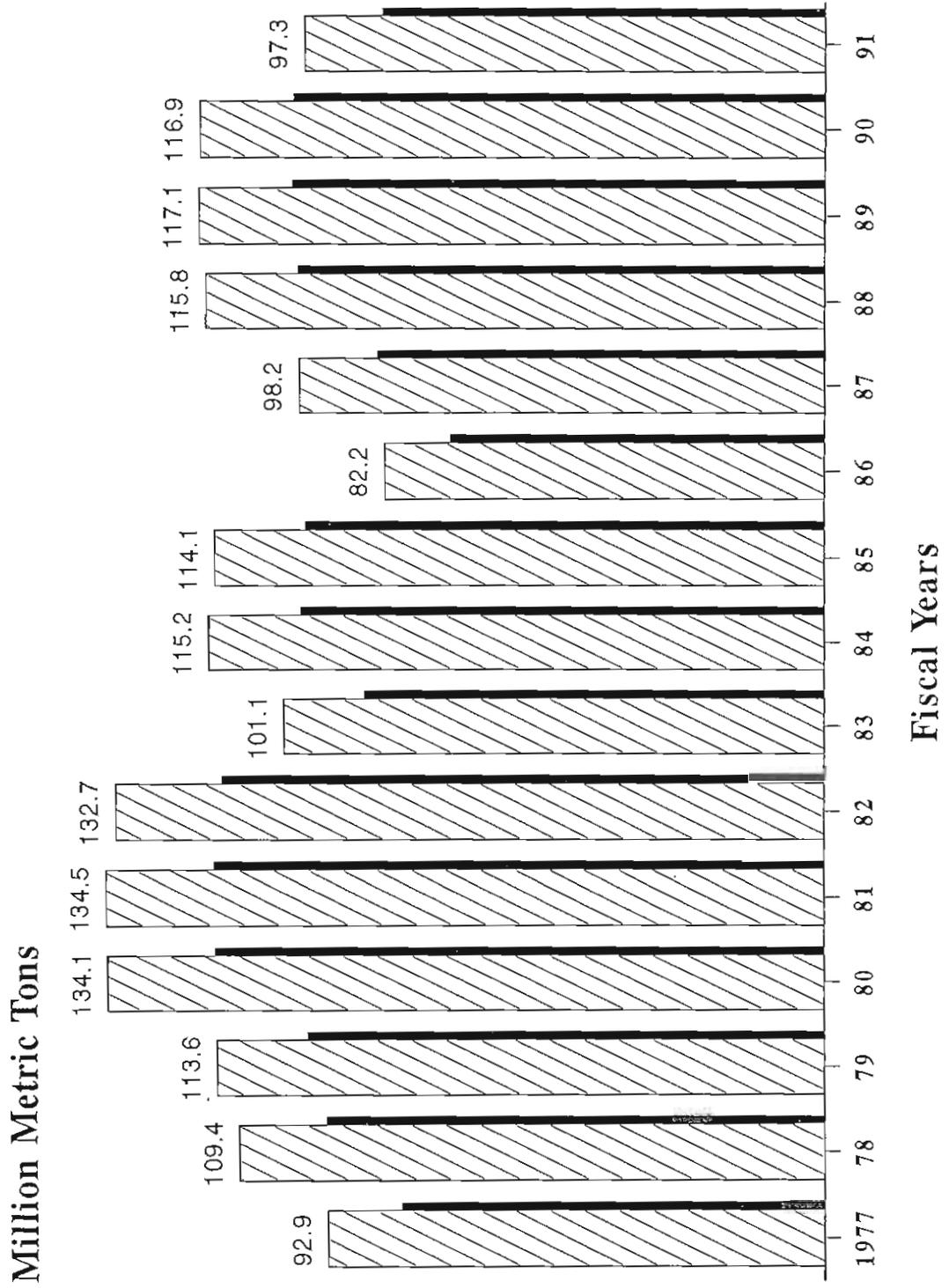
Oversight Responsibilities



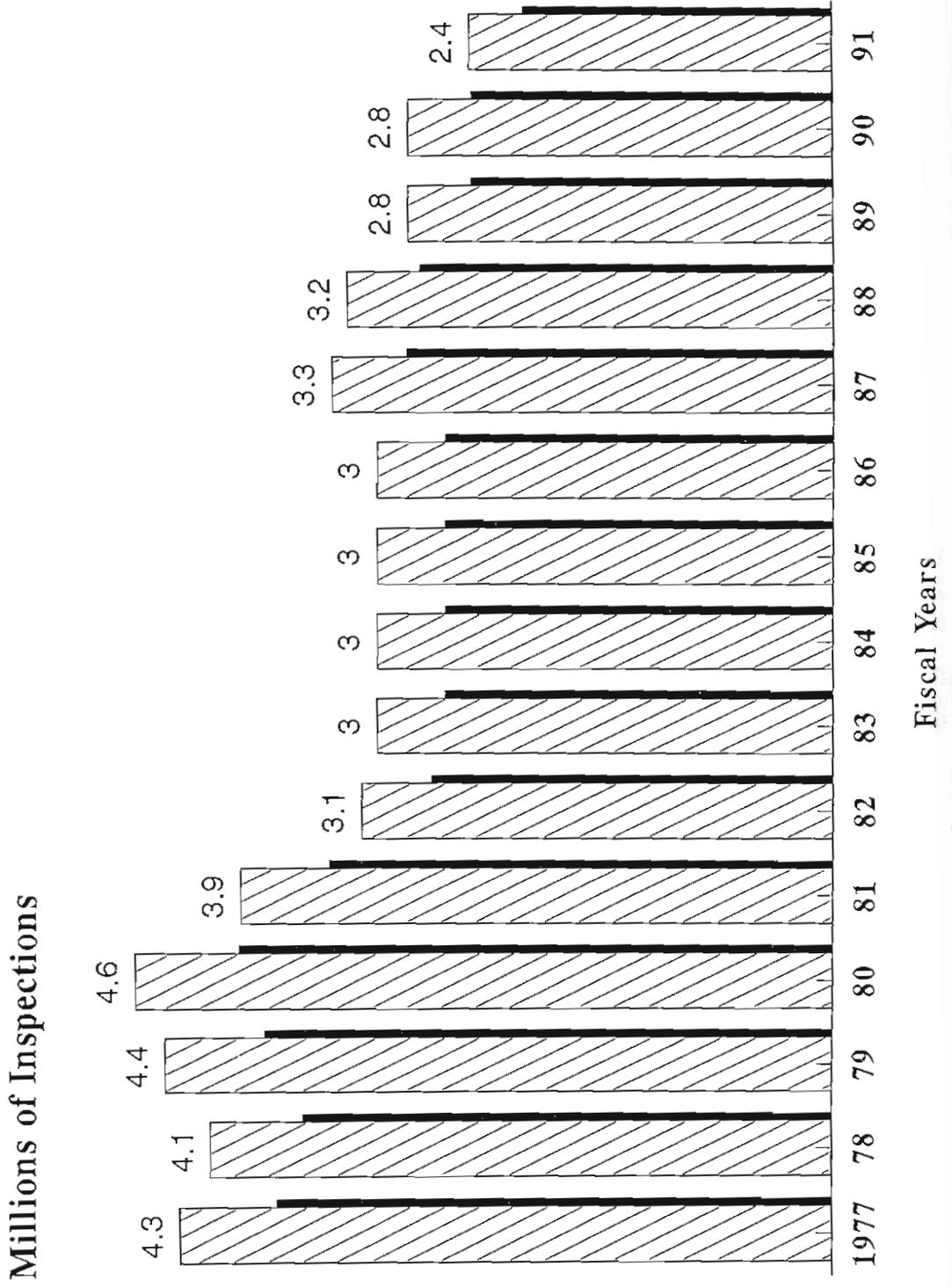
Services by State
and Agency Type

State	Federal or Federal/State	Delegated State	Designated State	Designated Private
Alabama		•	•	
Alaska			•	
Arizona				
Arkansas				•
California	•	•	•	•
Colorado				•
Connecticut				
Delaware				
Florida				
Georgia	•		•	
Hawaii				
Idaho				•
Illinois	•			•
Indiana				•
Iowa				•
Kansas			•	
Kentucky				•
Louisiana	•		•	
Maine			•	
Maryland	•			
Massachusetts				
Michigan	•			•
Minnesota		•	•	
Mississippi		•	•	
Missouri			•	
Montana			•	
Nebraska				•
Nevada				
New Hampshire				
New Jersey				
New Mexico				•
New York			•	
North Carolina			•	
North Dakota				•
Ohio	•			•
Oklahoma				•
Oregon	•		•	
Pennsylvania				
Rhode Island				
South Carolina		•	•	
South Dakota				•
Tennessee				•
Texas	•			•
Utah			•	
Vermont				
Virginia		•	•	
Washington	•	•	•	
West Virginia				
Wisconsin		•	•	
Wyoming			•	•

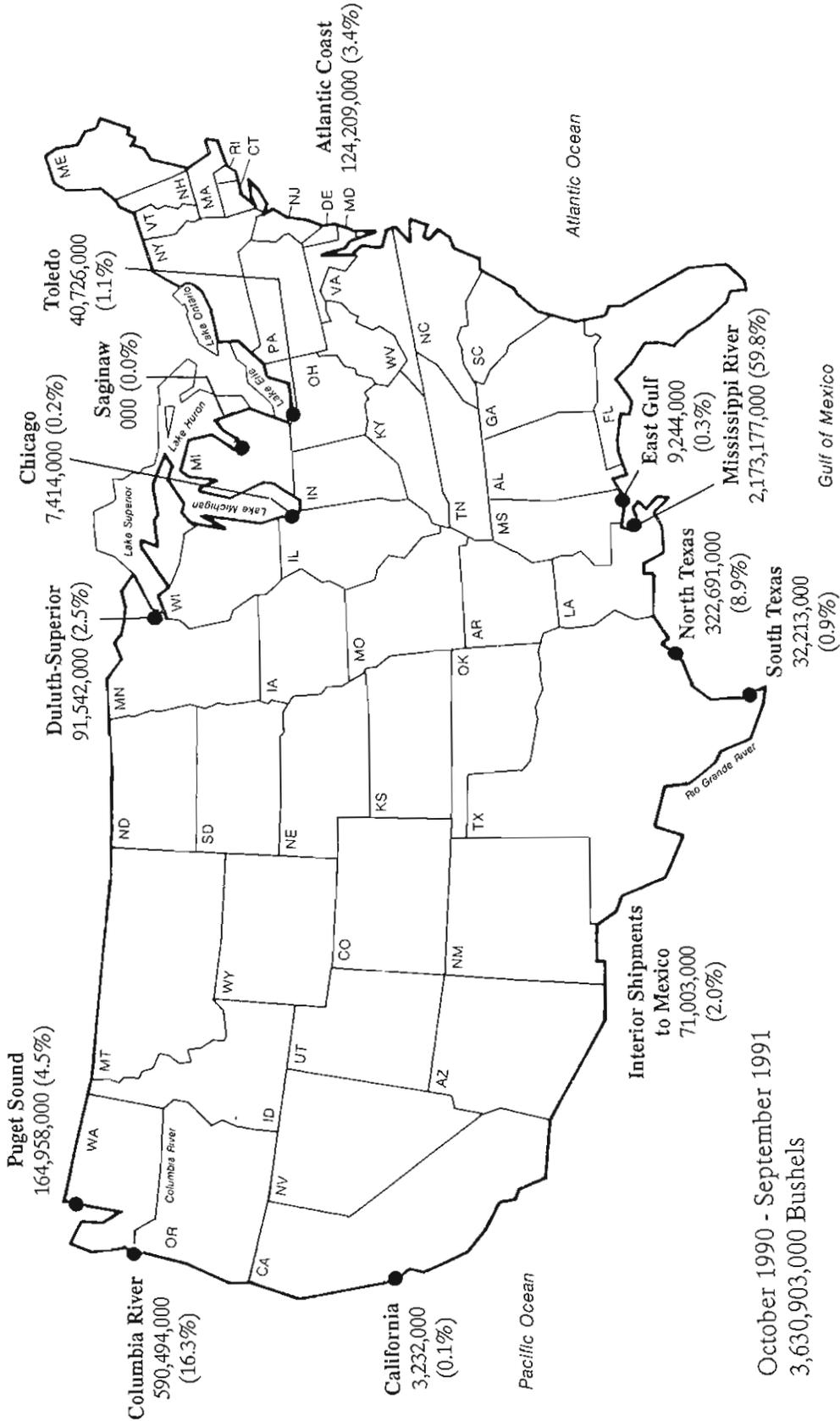
U.S. Agricultural Exports-Coarse Grains Wheat, Soybeans, Sunflower and Rice



Number of Inspections Performed Under U.S. Grain Standards Act



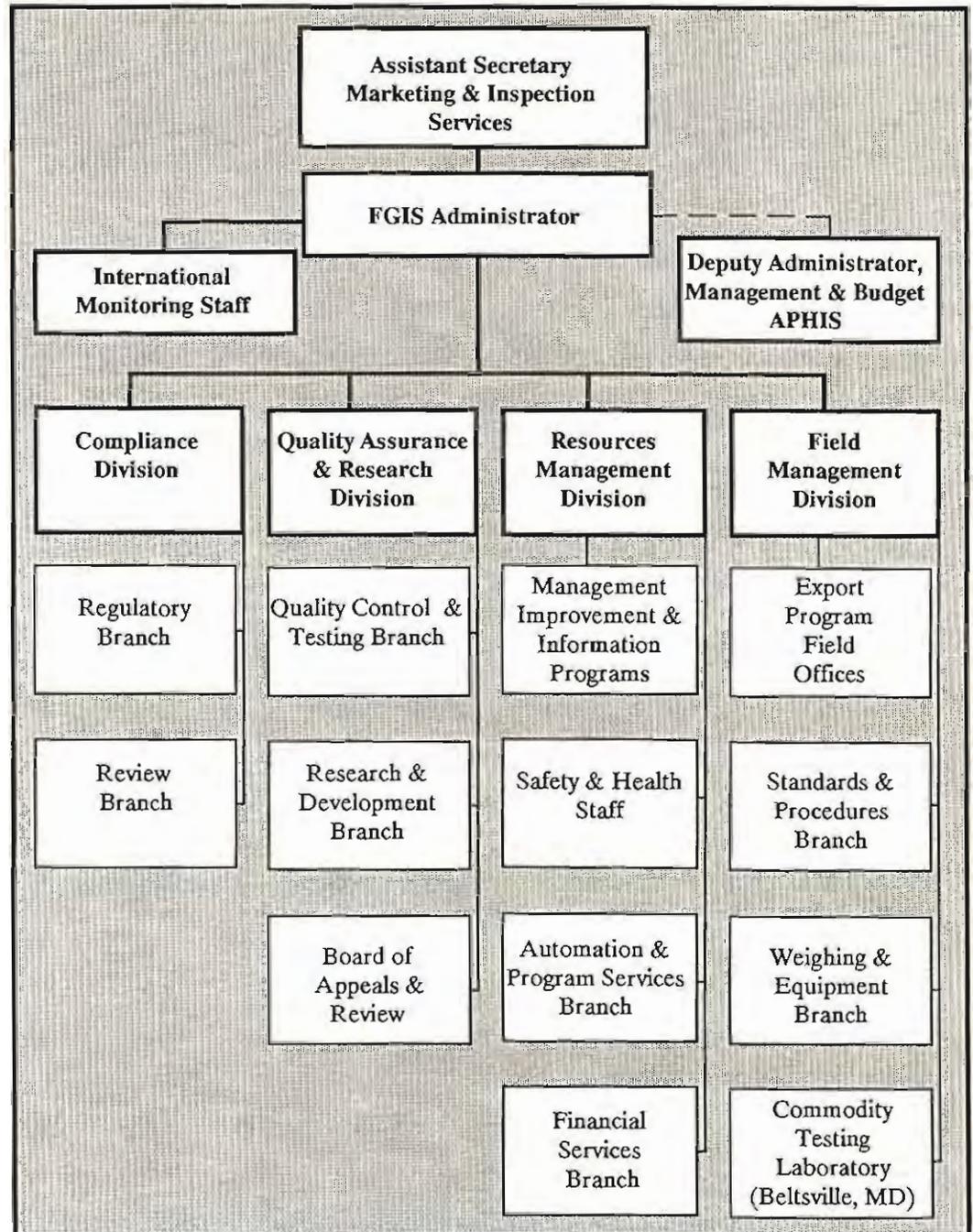
Volume of U.S. Grain Inspected for Export by Area Fiscal Year 1991



Organizational Structure

FGIS is an Agency which reports to the Assistant Secretary for Marketing and Inspection Services, U.S. Department of Agriculture. FGIS is composed of a headquarters unit and 23 field offices.

Three of the Agency's four headquarters divisions -- Compliance, Field Management, and Resources Management -- are located in Washington, D.C. The fourth -- the Quality Assurance and Research Division -- is located in Kansas City, Missouri.



FGIS Divisions

The **Compliance Division** ensures that the Act, applicable provisions of the AMA, and applicable regulations are implemented accurately and uniformly. The Division:

- * evaluates alleged violations and initiates preliminary investigations;
- * initiates enforcement/administrative actions for violations of the USGSA, applicable provisions of the AMA, and applicable regulations;
- * administers the program for delegating State agencies and designating official agencies to perform official functions and monitors their performance;
- * reviews and, when appropriate, approves official agency fee schedules;
- * licenses official agency personnel;
- * identifies and, where appropriate, exempts and monitors official agencies and licensee conflicts of interest;
- * registers firms engaged in foreign commerce grain business;
- * conducts management and technical reviews of FGIS' operations and programs, and monitors appropriate corrective actions;
- * administers the Management Control Program;
- * coordinates litigation proceedings involving FGIS personnel and/or records; and
- * responds to audits and surveys of FGIS programs.

The **Field Management Division**, the largest division within FGIS, directs and oversees the operation of all FGIS field offices, Federal/State offices, and delegated and designated agencies. The Division also:

- * establishes U.S. standards for grain, rice, and pulses;
- * develops inspection and weighing policies and procedures;
- * performs original inspection and weighing of export grain;
- * licenses agency personnel;
- * monitors the quality of grain as it moves through the market;
- * samples and inspects processed products;
- * provides quality assurance functions for the USDA Agricultural Stabilization and Conservation Service and the Department of Defense Personnel Support Center; and
- * tests processed grain products for producers, school lunch programs, military rations, and shipments to needy countries throughout the world.

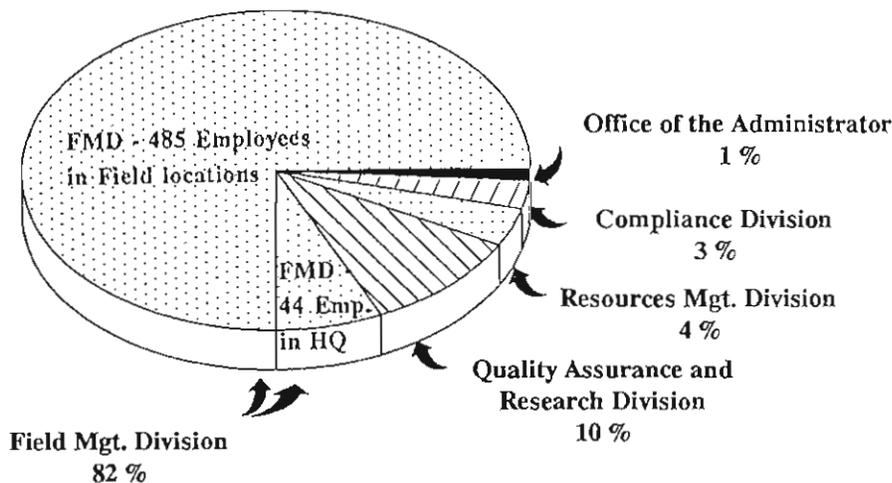
The **Quality Assurance and Research Division** is responsible for research, development, technical training, and quality control programs. The division:

- * develops new tests and methods for determining grain quality;
- * provides reference standards for FGIS methods and develops new reference standards as required;
- * develops criteria and recommends specifications for instruments to improve the reliability of grain inspection;
- * develops and maintains an agencywide quality control program covering all aspects of grading and inspection;
- * maintains uniform application of standards for grains and commodities;
- * renders final decisions on inspection appeals; and
- * conducts technical training for field personnel.

The **Resources Management Division** administers programs that provide budget, financial, automation, directives, regulatory, health, safety, training, and management improvement services to the Agency. The Division coordinates, evaluates, and negotiates all resources needed to provide administrative support services for FGIS operations.

The **International Monitoring Staff (IMS)** reports to the Office of the Administrator. IMS monitors grain shipments at destination ports to compare origin and destination quality; travels abroad to explain FGIS inspection and weighing procedures; briefs visiting foreign agricultural officials and others on FGIS procedures for obtaining information on the quality of U.S. grain shipments; and prepares written or onsite responses to complaints about grain shipments received through the Foreign Agricultural Service and other sources.

FGIS Permanent Full-Time Employees, FY 1991

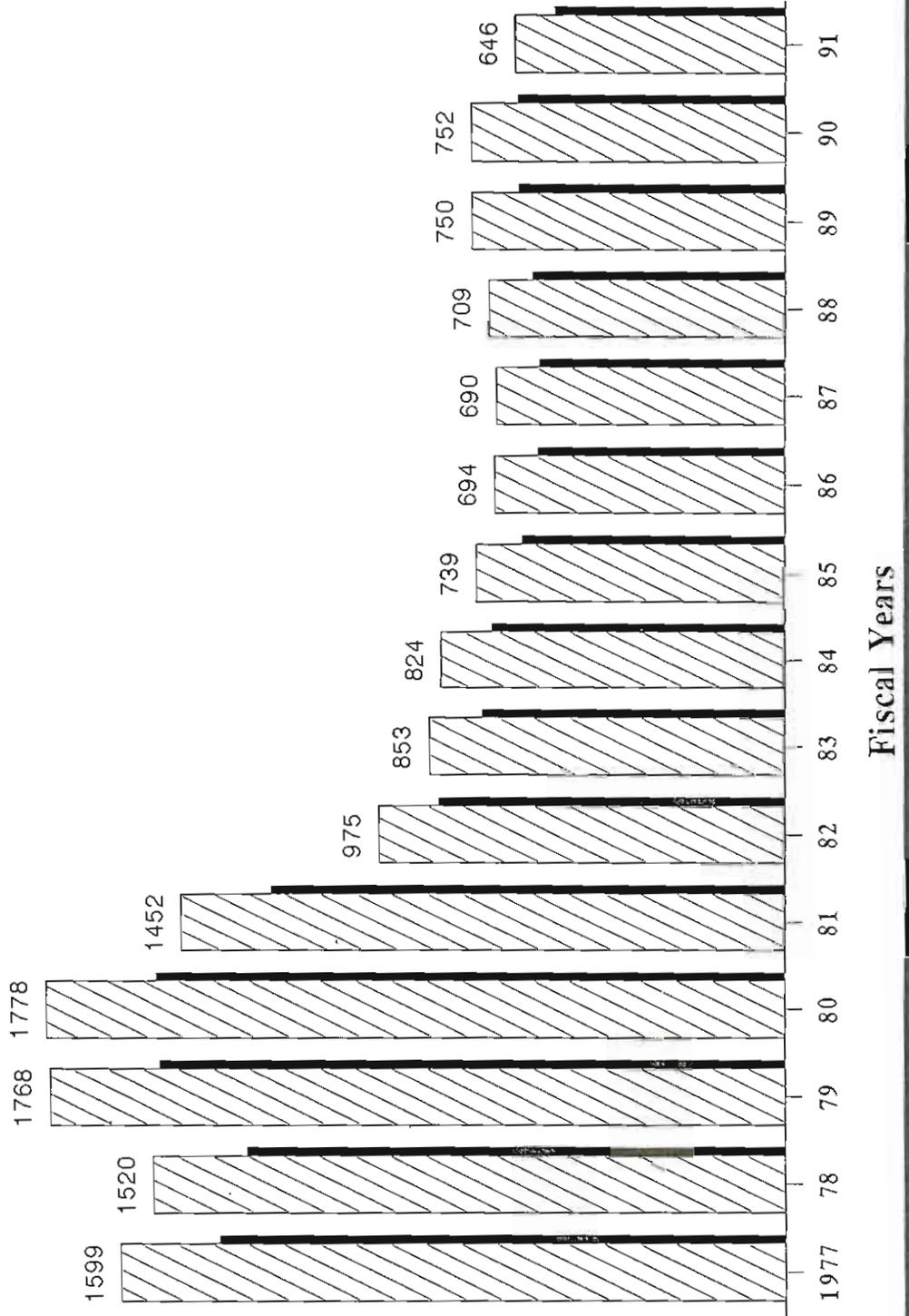


FGIS Field Offices

FGIS field personnel are located across the Nation and in eastern Canada, thus ensuring the availability of official inspection and weighing services anywhere in the United States.

Federal Grain Inspection Service Full-Time Permanent Employment, FY 1977-91

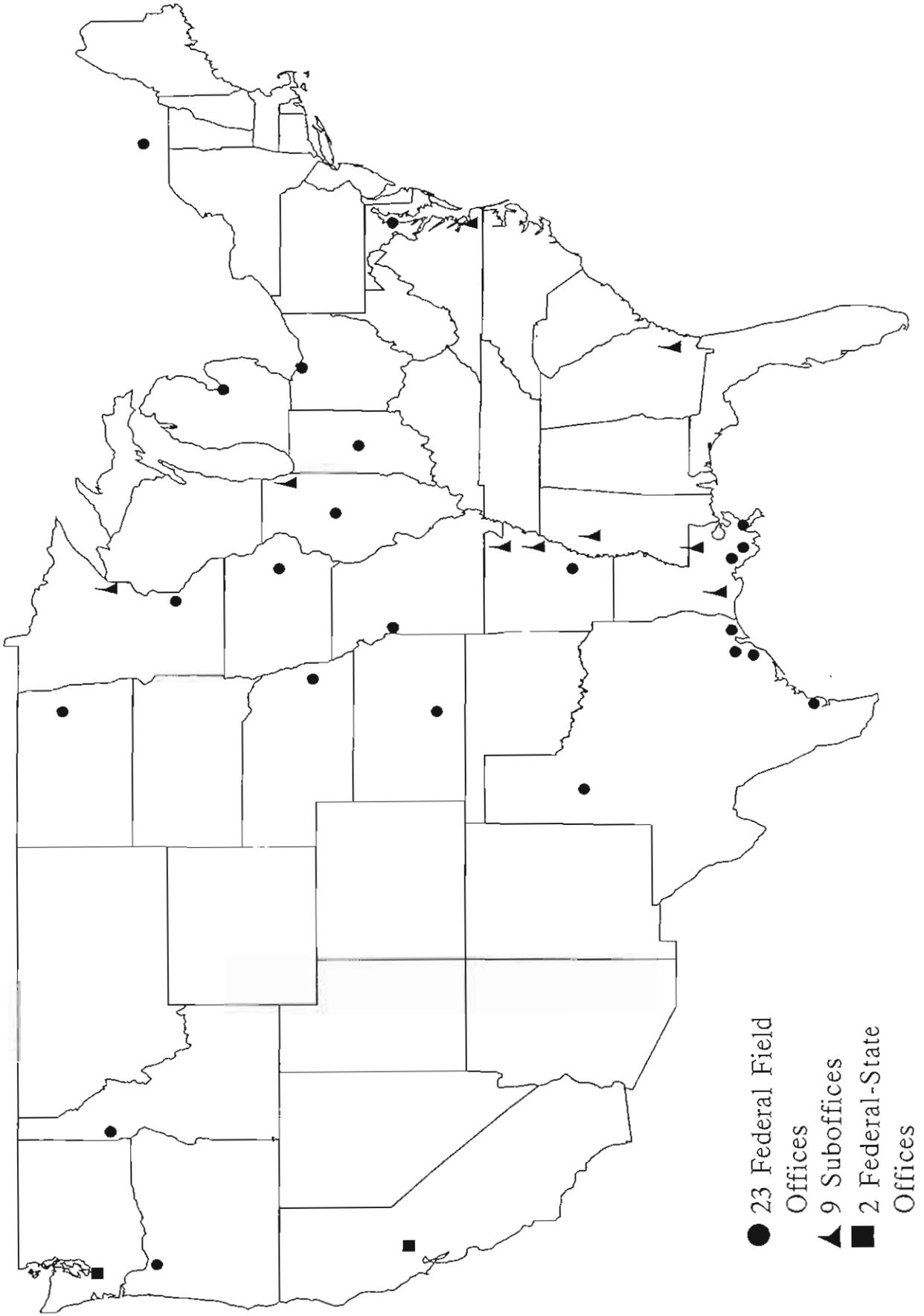
Number of Employees



Fiscal Years

Federal Grain Inspection Service

Performance of Weighing and Inspection Services



Inspection and Weighing

- Cu-Sum Plan Review** In fiscal year 1991, FGIS completed a preliminary review of the impact of the revised cumulative summation statistical loading plan for export grain shipments, more commonly known as the Cu-Sum Plan, on export quality. The Plan was revised in fiscal year 1990 to change the tolerances used, limit the retesting allowed for unacceptable grain quality, provide for the averaging of subsequent inspection results with previous inspection results, include wheat protein under the plan, and offer an optional component sample inspection service. Data from the first 6 months indicated that reduced levels of foreign material in soybeans may be attributed to procedural revisions to the inspection plan. FGIS will conduct further evaluations to determine the effects on other commodities.
- DON Testing Service** FGIS began offering a testing service, upon request, for deoxynivalenol (DON) in wheat. DON, more commonly known as vomitoxin, is a naturally occurring mycotoxin, a toxic substance produced by a fusarium mold that also causes scab damage in wheat. FGIS implemented the new testing service in response to DON found in some wheat, which resulted from excessive rain and cool temperatures prior to harvest. Testing is being offered at the FGIS Commodity Testing Laboratory in Beltsville, Maryland, using thin-layer chromatography, a method approved by the Association of Official Analytical Chemists for the quantitative detection of DON in wheat.
- Field Restructuring** During fiscal year 1991, FGIS closed field offices in St. Louis, Missouri, and Mobile, Alabama; and converted its Chicago, Illinois, location from a field office to a suboffice. These actions were taken in response to declining requests for FGIS services. The restructuring will enable FGIS to continue to provide cost-effective and timely inspection and weighing services where they are needed.
- Radios** FGIS personnel use hand-held portable radios at most field offices to communicate inspection, weighing, and safety information. The majority of the radios owned by FGIS were purchased in 1977, with an expected life of about 5 years. The equipment was becoming increasingly unreliable and extremely difficult to maintain. During fiscal year 1991, FGIS replaced approximately 60 percent of its radio equipment. These radios are being placed in FGIS offices serving high-volume export grain elevators in the New Orleans area and the Pacific Northwest.
- Railroad Track Scale Testing Program** FGIS provides, under the U.S. Grain Standards Act (USGSA), semiannual official testing for grain-industry-owned railroad track scales; and, under agreement with the Association of American Railroads, tests and calibrates each of the 14 railroad master track scales once each year. FGIS presently operates two railroad test cars on east and west coast itineraries. Each of the cars is a modified box-type car that carries an electric-powered cart with 100,000 pounds of certified test weights. During fiscal year 1991, the Agency initiated the acquisition of a third car to provide more timely and efficient service to the Midwestern States. Delivery is expected in 1992.

Inspection Program Data

Item	Fiscal Years		
	1989	1990	1991
Quantity of Grain Produced* (MMt) <u>1/</u>	247.2	335.1	363.7
Quantity of Grain Officially Inspected (MMt)			
Domestic	183.4	176.7	159.9
Export by FGIS	87.1	87.4	77.4
by Delegated States	<u>27.0</u>	<u>26.9</u>	<u>17.5</u>
Total	297.5	291.0	254.8
Number of Delegated States/Official Agencies	77	76	73
Number of Official Original Inspections and Reinspections			
FGIS	198,617	186,470	154,742
Delegated States/Official Agencies	<u>2,621,008</u>	<u>2,608,501</u>	<u>2,267,993</u>
Total	2,819,625	2,794,971	2,422,735
Number of Wheat Protein Inspections			
FGIS	45,918	53,813	51,582
Delegated States/Official Agencies	<u>482,679</u>	<u>458,563</u>	<u>446,070</u>
Total	528,597	512,376	497,652
Number of Soybean Protein and Oil Inspections			
FGIS	--	10,502	10,089
Delegated States/Official Agencies	<u>--</u>	<u>2,360</u>	<u>3,423</u>
Total	--	12,862	13,512
Number of Official Inspection Supervisions			
Field Office Grain Inspection Supervisions	39,238	42,749	36,000*
BAR Grain Inspection Supervisions <u>2/</u>	14,152	10,047	10,113
Rice Free Fatty Acid	--	380	372
Soybean Protein and Oil	--	2,914	2,160
Sunflower Oil	--	1,862	1,641
Wheat Falling Number	--	308	147
Wheat Protein <u>3/</u>	41,486	45,124	39,412
Aflatoxin	--	--	984
Number of Grain Appeals			
Field Offices	15,311	8,195	6,000*
BAR	1,226	550	469
Number of Aflatoxin Inspections	49,171	60,867	43,685
Quantity of Rice Inspected (MMt) (milled basis)	4.3	3.7	3.1

* Estimate.

1. Million metric tons.

2. Board of Appeals and Review.

3. Includes field office and QARD samples.

Weighing Program Data

Item	Fiscal Years		
	1989	1990	1991
Official Weight Certificates Issued			
FGIS			
Class X*	105,705	99,217	84,653
Class Y**	13,498	23,924	30,283
Total	<u>119,203</u>	<u>123,141</u>	<u>114,936</u>
Delegated States/Official Agencies			
Class X*	50,491	47,350	36,599
Class Y**	<u>179,127</u>	<u>185,450</u>	<u>131,561</u>
Total	<u>229,618</u>	<u>232,800</u>	<u>168,160</u>
Exported Grain Weighed (MMt)			
FGIS	85.1	85.6	75.5
Delegated States	<u>27.0</u>	<u>26.9</u>	<u>17.5</u>
Total	<u>112.1</u>	<u>112.5</u>	<u>93.0</u>
Number of Certified Scales in Service			
Export Elevators	408	380	312
Number of Railroad Track Scales Tested	110	131	124

* Class X involves 100 percent supervision.

** Class Y involves a minimum of 25 percent supervision.

Research and Development

Aflatoxin Testing	FGIS completed evaluating commercially available aflatoxin test kits that report the actual aflatoxin content of samples in parts per billion. The Aflatest system, produced by VICAM, was selected as the test kit which best met the needs of the official inspection system. The kit determines quantitative aflatoxin levels in corn, corn germ meal, corn gluten meal, corn meal, corn/soy blend, sorghum, soybeans, milled rice, popcorn, and wheat.
Canola	To prepare for the implementation of U.S. Standards for Canola, FGIS purchased and installed a gas chromatograph and a liquid chromatograph to analyze erucic acid and glucosinolates. The levels of these two constituents distinguish canola from rapeseed. Canola must contain less than 2 percent erucic acid in the oil and less than a total of 30 micromoles of glucosinolates per gram of dry, oil-free solid. Procedures to test for these two constituents are being developed.
Corn Protein, Oil, and Starch Analysis	To provide end-use quality information to buyers and sellers of U.S. corn, FGIS is developing near-infrared (NIR) analysis techniques to measure protein, oil, and starch in corn. FGIS used both NIR reflectance and transmittance instruments to analyze approximately 1,000 corn samples collected from all major corn production regions of the United States. The number of samples from each region was proportional to the percentage of the total production in that region. FGIS, working with the USDA Agricultural Marketing Service (AMS), will develop potential calibrations for offering NIR analysis of corn protein, oil, and starch as a service of the official inspection system.
Dust Recirculation Evaluation	The FGIS-supported study by Texas A&M on the potential impact of prohibiting dust recirculation at export elevators was completed. The study concluded that prohibiting dust recirculation would incur significant costs and few benefits, would not increase grain quality, and could lead to increased risk of fires and explosions. The Agency is awaiting the study's final report, which should be available in fiscal year 1992.
Insect Infestation	FGIS continued to support development of a test kit designed to detect insect infestation in grain and other commodities. As a result, a commercially available test kit was developed that detects the presence of both live and dead infestation. The test can be completed in about 3 hours. Work is continuing to shorten the time required and to simplify the test procedure. The kit currently is being tested in a collaborative study by the Association of Analytical Chemists, International. Preliminary results show a high correlation between the test kit and fragmentation counts, number of insect-damaged kernels, number of infested kernels detected by x-ray analysis, etc. FGIS also is supporting research by ARS to develop acoustical detectors that can measure the total amount of live infestation, both hidden and visible, in grain and other commodities. ARS is testing prototypes of this detector.
Mycotoxins Other Than Aflatoxin	Mycotoxins are naturally occurring toxic substances produced by a wide variety of molds and fungi. Aflatoxins are the most widely known mycotoxins, but others may present problems to grain. FGIS completed a preliminary evaluation of commercially available test kits for several additional mycotoxins in grain, including deoxynivalenol (vomitoxin), T-2 toxin, ochratoxin, and zearalenone. The final report from this project recommended that FGIS conduct a collaborative study to determine if the test kits for zearalenone and deoxynivalenol are suitable for use by inspectors in the field. The study will be conducted in fiscal year 1992.

Odor Detection

Musty, sour, and commercially objectionable foreign odors are important grain grading factors. FGIS is continuing its collaborative efforts with ARS to develop an instrument to objectively detect odors. An expert sensory panel was established in fiscal year 1991 at the Sensory Analysis Center, Kansas State University, to identify the various odors in samples that FGIS inspectors have listed as sample grade because of their odor content. Panel evaluations of each sample are compared with a chemical analysis of volatile compounds from the sample to further identify those compounds responsible for causing various odors, and to correlate human olfactory response with chemical analysis. In addition, FGIS funded ARS' purchase and testing of commercially available odor detectors. Thus far, none provide the discrimination between normal grain odors and off-odors which is needed in the official inspection system.

Pesticide Residue Analysis

FGIS recently completed a collaborative study on pesticide residue recovery with ARS and the U.S. Food and Drug Administration. In this study, wheat samples were spiked with eight standard pesticide residues. The residues were then extracted using the new supercritical fluid extraction procedure and analyzed using standard gas chromatographic techniques. Results showed that pesticide recoveries using this extraction system were equivalent to or better than those obtained with conventional extraction methods.

FGIS has developed a survey program for the measurement of 19 different pesticides in wheat, including those approved for use on wheat, the predominant pesticides used in U.S. agriculture, and the organochlorine compounds such as DDT. Both the standard solvent methods and supercritical fluid methods will be used for sample extraction. Residue analysis will be performed on the recently purchased Gas Chromatograph/Liquid Chromatograph/Mass Spectrometer. Sample analysis for wheat began in October 1991. Early in 1992, the survey program will be expanded to include corn, soybeans, and sorghum.

Sprout Damage

During fiscal year 1991, FGIS analyzed approximately 100 wheat samples for sprout damage using Falling Number, Stirring Number, and amylograph tests to determine which method provides the most reproducible results. All of these techniques indirectly measure alpha amylase activity, an indicator of damage to the wheat caused by the sprouting process. The Falling Number test measures the amount of time required for a metal plunger to fall through a viscous starch solution. The Stirring Number test, developed in Australia, measures the resistance to stirring a propeller in a similar solution. The amylograph measures the amount of torque generated as the dough is mechanically kneaded. Preliminary analysis of the data indicates that there is a high correlation between Falling Number and Stirring Number values. However, the correlation between either of these two methods and amylograph values is not as high.

Wheat Classification

FGIS, ARS, AMS, and the industry-sponsored Wheat Classification Working Group continued their collaborative efforts to develop a wheat classification system based on objective test results rather than kernel morphology. In 1991, the single kernel tester produced by ARS at the Grain Marketing Research Laboratory in Manhattan, Kansas, was selected as the instrument that best meets the needs of the new classification system. In addition to single kernel hardness, the instrument measures kernel size, moisture content, and weight. FGIS continues to analyze samples from the 1989, 1990, and 1991 crop years using two models of the single kernel instrument, along with several NIR instruments, to gather data for use in refining the proposed wheat classification system. ARS is now discussing the commercial production of the single kernel instrument with several manufacturers.

Standards and Procedures

Codex Alimentarius Commission

FGIS continues to participate in the Codex Alimentarius Commission Committee on Cereals, Pulses, and Legumes. Codex, a subsidiary body of the Food and Agriculture Organization of the United Nations and the World Health Organization, was established to facilitate world trade by developing internationally accepted food standards that foster consumer health. Thus far, the Committee has established standards for wheat flour, maize, whole maize meal, degermed maize meal, maize grits, certain pulses, and sorghum. The Committee is also developing standards for oats, Durum wheat, soft wheat, rice, and peanuts.

Standards

Canola. To facilitate the marketing of canola and in response to interest expressed by the U.S. Canola Association and others in the canola industry, FGIS published a proposed rule on May 3, 1991, recommending establishment of U.S. Standards for Canola under the authority of the USGSA. FGIS received many favorable comments on the proposal and, as a result, is preparing a final rule to establish canola standards. This is the first new standard to be established under the USGSA since 1984.

Rice. To meet the needs of the marketplace, FGIS is proposing to revise the U.S. Standards for Rice to establish a special grade for Glutinous or Sweet rice, a specialty rice grown in California.

Sorghum. On April 2, 1991, FGIS proposed amending the U.S. Standards for Sorghum by: (1) changing the amount of Brown sorghum allowed in Yellow sorghum; (2) revising the classification terminology; (3) requiring the reporting of sorghum dockage to the nearest tenth percent; (4) separating the combined grading factor "broken kernels, foreign material, and other grains" into "broken kernels" (BN) and "foreign material" (FM); and (5) reducing the combined limits for BN and FM. These proposals are intended to more accurately describe the quality of sorghum and to provide an incentive to improve quality. Based on comments received and internal discussions, FGIS prepared a final rule that is expected to be published in early 1992 and become effective June 1993.

Soybeans. In accordance with requirements to periodically review existing standards, FGIS proposed amending the U.S. Standards for Soybeans as follows: (1) change minimum test weight per bushel from a grade determining factor to a nongrade determining factor; (2) reduce the foreign material limits for grades U.S. Nos. 1 and 2; (3) reduce the grade limits for splits; (4) report the percentage of splits in tenths of a percent; (5) reduce the tolerances for stones and glass; (6) eliminate the aggregate weight option; (7) eliminate the grade limitation on purple mottled or stained soybeans and establish a special grade, Purple Mottled or Stained; (8) eliminate the grade limitation on soybeans that are materially weathered; (9) create a new grade and associated grade limits for U.S. Choice soybeans; (10) clarify the reference to Mixed soybeans in the standards; (11) establish a cumulative total for factors that may cause a sample to grade U.S. Sample grade; and (12) report the oil and protein content on all official lot inspection certificates for export soybean shipments. The Agency is planning to publish a final rule in fiscal year 1992.

Wheat. In accordance with requirements to periodically review existing regulations, FGIS proposed the following amendments to the U.S. Standards for Wheat: removing the description of red durum wheat from the definition of unclassified wheat; reducing limits for stones, pieces of glass, and ergot; reducing the limit of smut balls allowed in the special grade light smutty wheat; establishing a cumulative total for factors which may cause U.S. sample grade; and, reducing the grading limits for foreign material. The Agency plans to publish a final rule in fiscal year 1992.

Minor Oilseeds. Section 701 of the Oilseeds Title of the 1990 Farm Bill requires the Department to provide price support for oilseeds through nonrecourse loans for marketing years 1991 to 1995. The Agricultural Conservation and Stabilization Service (ASCS), which administers the CCC loan programs, uses the U.S. Grain Standards and the national inspection system to determine crop quality. To assist ASCS, FGIS developed inspection procedures for minor oilseeds: canola, rapeseed, mustard seed, safflower seed, and confectionery sunflower seed for use by Uniform Grain Storage Agreement warehouses.

Compliance Activities

Compliance is defined as conformance with all requirements and procedures established by statute, regulation, instruction, or directive that enables FGIS to effectively accomplish managerial, administrative, and technical functions.

FGIS ensures, through reviews, evaluations, and, as necessary, enforcement actions, that the U.S. Grain Standards Act (USGSA), applicable provisions of the Agricultural Marketing Act of 1946 (AMA), and regulations, procedures, and policies issued under the statutes are implemented accurately and uniformly.

Management Control Program

FGIS established and maintains, at all organizational levels, an effective accounting, program, and administrative control system. Agency programs and activities are reviewed against standards established by the U.S. Office of Management and Budget and the U.S. General Accounting Office (GAO) to ensure that sufficient management controls exist; that assets and resources are safeguarded against theft, fraud, waste, and abuse, and are accounted for properly; that program expenditures comply with applicable laws and regulations, and are accounted for properly; and that program operations comply with laws, regulations, and FGIS policy, and promote operational economy and efficiency. The program also requires development of plans to correct deficiencies, and followup reviews to ensure that problem areas are resolved and operating as prescribed.

During fiscal years 1988-91, FGIS reviewed 30 of a total 34 assessable programs. The remaining 4 programs are scheduled for review during fiscal year 1992. A total of 157 corrective action plans have been developed as a result of these reviews, and Office of the Inspector General (OIG) and GAO audits. The correction plans are monitored to ensure their timely resolution.

The management control program has enhanced FGIS' ability to assess the national grain inspection and weighing system. The program effectively evaluates procedural conformance and operational efficiency nationwide, and determines the adequacy of control measures. It also identifies vulnerabilities that may impede the accomplishment of FGIS' mission or impact the integrity of the official grain inspection and weighing system.

Compliance Reviews

During fiscal year 1991, FGIS reviewed activities at 9 field office circuits and 11 official agencies to evaluate management effectiveness and procedural compliance, and conducted special reviews of 16 official agencies. Most field office circuits were found to be well managed, performing satisfactorily, and meeting FGIS' mission. Followup compliance reviews and onsite visits ensure that the few minor procedural problems identified during the reviews have been or are being corrected. As part of each review, FGIS interviews both applicants for service and official personnel to determine if there was discrimination in the delivery of official services during fiscal year 1991. No instances of discrimination were identified.

Management Evaluation

In addition to its responsibilities under the USGSA to administer and maintain an inspection and weighing system for grain, FGIS is authorized under the AMA to administer and enforce certain inspection and standardization activities related to rice, pulses, grain products (such as flour and corn meal), and other agricultural commodities. FGIS' mission related to rice is to develop and maintain standards and procedures for domestic and export trade, and to facilitate marketing. Under the AMA, FGIS provides, upon request, inspection, certification, and identification of the class, quality, quantity, and condition of rice.

In fiscal year 1991, FGIS began a management evaluation of the rice inspection program, and the operation of the total oil and free fatty acid (TOFFA) laboratories. The review will determine whether the national program is procedurally and operationally effective, efficient, and in compliance with applicable laws, regulations, and policies.

Also in fiscal year 1991, an evaluation team visited four FGIS field offices and four suboffices that provide official rice inspection, weighing, and TOFFA services; and reviewed two State offices that provide these services under Federal/State cooperative agreements. Upon completion of each review, a review report was prepared, formally documenting problem areas and recommending necessary corrective action. The team also met with representatives of the U.S. Rice Council and the Rice Millers' Association to discuss program responsibilities and activities.

Upon completion of the onsite phase of this evaluation in fiscal year 1992, a report consolidating all individual review reports will be prepared. FGIS will input areas of noncompliance, corrective action plans, and scheduled target dates into its automated management control database, and then monitor these plans to ensure their timely resolution.

Interior Grain Inspection System Irregularities

During fiscal year 1991, routine compliance reviews, newly implemented unannounced reviews, and preliminary investigations conducted by FGIS revealed evidence of improper inspection practices by personnel employed by official agencies located in the interior. Such practices violate the USGSA and undermine the integrity of the official grain inspection system. No similar practices have been identified at any export port location.

FGIS initiated action against those official agencies and licensees that failed to provide proper official inspection services. Actions included refusing to renew official agency designations, revoking licenses, withdrawing official services, and assessing civil penalties.

Because of the geographic scope of the activities identified in the interior, FGIS requested the assistance of the USDA Inspector General's Office to identify where stronger action is needed, determine whether a pattern of these practices exists and the extent to which they permeate the system, uncover the causes underlying these practices, and develop recommendations to improve the system.

Alleged Violations and Case Activity

During fiscal year 1991, 19 cases from fiscal year 1990 involving alleged violations of the USGSA and the AMA were pending further action; 18 cases were opened; and 19 cases were closed, leaving 18 cases pending at the close of fiscal year 1991. Alleged violations during fiscal year 1991 included deceptive grain handling and loading practices; improper performance of official duties; altering official samples and certificates; violating post-employment restrictions; and using improper weighing procedures. During fiscal year 1991, FGIS conducted 15 onsite investigations; it referred one case to the OIG, which that agency declined to accept. FGIS closed 17 cases after taking appropriate administrative actions, and closed 2 cases because of insufficient evidence to substantiate a violation.

Enforcement Actions

One conviction of criminal charges was obtained on a USGSA case involving deceptive grain loading practices. The owners of a grain company pleaded guilty to U.S. Food and Drug Administration charges for loading good quality grain on top of insect-damaged grain and paid a \$125 fine. The company also destroyed the adulterated grain, at a cost of \$11,000.

An investigation conducted jointly by OIG and FGIS between 1985-87 found that a commodity plant allegedly delivered shortweighed and improperly bagged and sealed shipments of corn-soya milk under a PL-480 contract. It also revealed that official samplers contracted by FGIS sampled and monitored the commodity lot improperly. These improprieties resulted in false samples and in the commodities' failure to meet ASCS contract specifications. ASCS filed a civil claim against the plant to recover the cost of the proven shortages. In fiscal year 1991, the Federal Government collected \$8,000 in settlement, the contract samplers involved were removed from service, and changes were made in commodity sampling and quality assurance procedures nationwide.

FGIS took administrative action against two grain firms for engaging in deceptive grain handling/loading practices. One firm was fined \$6,000 and denied official services for 30 days; the other paid a civil penalty of \$5,000.

FGIS took administrative action against five licensees for failing to perform their official duties properly. Four of the five individuals are no longer licensed. The fifth licensee surrendered his license, which has since been reissued, excluding the function that was performed improperly.

Official Agency Designations

Under triennial renewal procedures, 28 agency designations automatically terminated in fiscal year 1991. Except for 2 agencies, all were renewed after a complete performance review. Seventy-three (73) State and private agencies are designated to provide official services at interior locations. Of these, 8 are State agencies that are also delegated to perform official inspection and weighing services at export locations.

Adding Water to Grain

FGIS has received numerous reports and complaints alleging that some grain handlers throughout the United States indiscriminately add water to grain to increase the weight--not, as some handlers contend, to control dust. Grain industry representatives have requested that FGIS prohibit, or at least control, the addition of water to grain.

In response, FGIS is drafting regulations to prevent excessive addition of water to grain as it is handled and moved in domestic and international commerce. FGIS will propose that the prescribed amount of water may be added only while grain is being moved, and only where dust control is needed, such as in grain elevating legs, on belts, or at the end of loading spouts.

Conflicts of Interest

During fiscal year 1991, four of the six official agencies granted discretionary conflict-of-interest waivers were operating satisfactorily under the conflict-of-interest provisions of the USGSA. The remaining two agencies experienced supervision and management problems throughout the year. FGIS did not renew the designation of one of the agencies, and is continuing to work with the second agency to correct identified problems.

FGIS evaluated 24 potential conflict-of-interest situations involving licensed inspection personnel. Exceptions, which are granted based on an individual's agreement to comply with specific conditions, were given in 9 instances. Ten situations did not constitute conflicts of interest; 1 licensee was denied an exception to manufacture and sell grain industry equipment; and 4 general inquiries were handled.

Litigation Proceedings

Thirteen actions were handled involving requests for FGIS personnel to appear as witnesses in judicial and administrative proceedings, to give written or oral depositions, or to supply official records during fiscal year 1991.

The tort claim suits filed against FGIS during fiscal year 1990 as a result of a Commodity Credit Corporation sorghum shipment destined for Ecuador under the PL 480 program remain pending. The owners of the vessel and the warehouse claimed they incurred financial damages when, due to FGIS' misgrading of the shipment, they had to discharge the sorghum and, subsequently, delay shipping. FGIS' reply to the complaint indicated that the misgrading error was corrected by the requested appeal inspection.

An FGIS employee filed a tort claim against FGIS which alleges that he aggravated a prior injury because his supervisor refused to place him in light-duty status. This suit is pending.

Registration To Export Grain

During calendar year 1991, FGIS issued 86 Certificates of Registration to firms that export grain for sale, or that handle, weigh, or transport grain for sale in foreign commerce.

Overview of
Compliance Activities
Fiscal Year 1991

Item	Fiscal Years		
	1989	1990	1991
Agency Delegations and Designations	77	76	73
Designations Renewed	27	22	26
State Delegations at Export Port Locations	8	8	8
Registration Certificates Issued to Grain Firms	96	87	86
Licensees:			
Inspectors	718	710	680
Weighers	95	112	125
AMA Inspectors	86	92	87
Total Samplers/Technicians (approximate)	1,530	2,310	2,205
USGSA Samplers	*	*	1,500
AMA Samplers	*	*	705

* Data became available in fiscal year 1991.

International Relations

Complaints from Importers In fiscal year 1991, FGIS received 15 quality and 2 quantity complaints from importers on grains inspected under the U.S. Grain Standards Act, as amended. The complaints involved 28 lots loaded aboard 23 vessels and one unit train.

Importers' complaints in fiscal year 1991 involved approximately 0.3 million metric tons, or about 0.3 percent by weight, of the total amount of grain exported during the year. The 22 quality complaints (no quantity complaints) FGIS received in fiscal year 1990 represented approximately 1.1 percent of the total tonnage of grain exports.

The number of complaints filed by importers has decreased every year since 1987.

Importers' Complaints, 3-Year Summary

	Fiscal Year 1989	Fiscal Year 1990	Fiscal Year 1991
Quality Complaints	24	22	15
Quantity Complaints	1	0	2
Total	25	22	17
Export Volume Inspected (million metric tons)	112.0	112.3	94.8
Complaint Tonnage (million metric tons)	1.0	1.2	0.3
Complaint Percentage	0.9	1.1	0.3

Summaries of complaints from importers, briefings presented to visiting trade and governmental teams, and FGIS activities involving international travel during fiscal year 1991 appear on the following pages.

Summary of Complaints
Reported by Importers
on Inspection and
Weighing,
Fiscal Year 1991

Country	Grain	Number of Complaints	Nature of Complaint
Asia			
Indonesia	Wheat	1	Protein
Japan	Wheat	1	Iron fragments
		1	Heat damage
Korea	Soybeans	1	Weight
Philippines	Wheat	1	Weight
Europe			
Belgium	Soybeans	1	Presence of sand and foreign material
Hungary	Corn	1	Damaged kernels, broken corn and foreign material
Ireland	Wheat	1	Protein, Falling Numbers
Israel	Wheat	1	Dockage, foreign material
Latin America			
Costa Rica	Soybeans	1	Foreign material
El Salvador	Wheat	1	Protein
Mexico	Soybeans	1	Splits
	Corn	1	Broken corn and foreign material
Panama	Corn	1	Broken corn and foreign material, damaged kernels
Uruguay	Corn	1	Infestation
Venezuela	Wheat	1	Class, hardness, protein, heat damage, damaged kernels
Near East			
Egypt	Sorghum	1	Cottonseed, infestation
Total		17	

Summary of Briefings
with Visiting Trade and
Governmental Teams,
Fiscal Year 1991

	Number of Teams
Africa	
South Africa	1
Asia	
India	1
Indonesia	1
Japan	4
Korea	2
Malaysia	1
People's Republic of China	3
Taiwan	2
Thailand	1
Europe	
European Community	1
Germany	1
Portugal	1
United Kingdom	1
U.S.S.R.	2
Latin America & Caribbean	
Brazil	1
Central America (Costa Rica, El Salvador, Guatemala, Honduras)	1
Mexico	2
Peru	1
Near East	
Algeria	1
Morocco	1
Tunisia	1
Yemen	1
Pacific	
Australia	1
TOTAL	32

Activities Involving
International Travel,
Fiscal Year 1991

Purpose	Number	Country Visited	Dates
1. (1) To participate in a USDA/ROC Economic Council meeting and (2) to meet with flour millers in response to wheat protein and class complaints.	1	(1) Taiwan (2) Singapore, Malaysia	11/13- 11/23/90
2. To participate in a wheat marketing seminar at the request of U.S. Wheat Associates.	1	Mexico	1/30- 1/31/91
3. To make a presentation on aflatoxin determination procedures at the request of the Colombian Postharvest Grains Association.	1	Colombia	4/23- 4/28/91
4. To monitor the discharge of a U.S. soybean cargo at the request of the American Soybean Association.	2	Japan	5/13- 5/31/91
5. To make a presentation at the Canadian International Grains Institute's 26th International Grain Industry Program.	1	Canada	6/18- 6/20/91
6. To address allegations that shipments of bagged Title II commodities were infested with a prohibited insect.	2	Dominican Republic	6/23- 6/29/91
7. To participate in the Codex Alimentarius Commission International Standards Conference.	1	Italy	6/28- 7/11/91
8. To checktest a diverter sampler, evaluate inspection equipment accuracy, and conduct wheat grading seminars at the request of U.S. Wheat Associates.	2	Jamaica	7/25- 8/2/91
9. To advise Mongolian wheat recipients about proper fumigation, handling, and transportation practices at the request of the U.S. Agency for International Development.	1	Mongolia, People's Republic of China	9/14- 9/26/91

Activities Involving
International Travel
(continued)

Purpose	Number	Country Visited	Dates
10. (1) To participate in a regional marketing conference for North African wheat buyers at the request of U.S. Wheat Associates and (2) to meet with soybean processors and USDA cooperators to discuss proposed changes to the soybean standards.	1	(1) Malta (2) Belgium, The Netherlands	9/16- 9/24/91
11. To conduct wheat grading seminars at the request of U.S. Wheat Associates.	1	Egypt, Jordan, Yemen	9/20- 10/2/91

Grain Dust Explosion Information

FGIS receives information regarding grain dust explosions through the cooperation of universities, insurers, trade groups, FGIS personnel, and a news clipping service. FGIS does not investigate grain dust explosions, and the public sector is not required to report explosions to FGIS.

	1989	1990	1991
Number of Explosions	12	14	15
Number of Injuries	7	9	9
Number of Deaths	2	0	1

Summary of Reported Grain Dust Explosions

Facility	Location	Date	Injuries	Deaths
CSX Transportation	Grand Rapids, MI	11/05/90	0	0
Harvest States Cooperative	Hartland, MN	12/11/90	1	0
Bays English Muffin	Detroit, MI	01/29/91	0	0
American Crystal Sugar	Hillsboro, ND	02/02/91	2	0
Ogilvie Mills	Keokuk, IA	04/01/91	0	0
Nashua Coop Equity	Nashua, IA	04/10/91	1	0
Cereal Food Processors	Wichita, KS	04/11/91	0	0
Riceland Foods	Jonesboro, AR	04/30/91	1	0
Greenwood Farmers Coop	Greenwood, NE	05/23/91	2	0
Continental Grain	Arcanum, OH	05/31/91	0	0
Darigold Feed Mill	Chehalis, WA	07/23/91	0	1
Clinton Grains	Clinton, IA	09/14/91	0	0
Crystal Farms Feed Mill	Hall County, GA	09/21/91	1	0
National Oats	Cedar Rapids, IA	09/24/91	0	0
Leffert Grain	Walton, IN	09/27/91	1	0

Budget Information

Status of Fee-Supported Accounts
Fiscal Year 1991

Program	Revenue 9/30/91	Obligations 9/30/91	Profit/(Loss) 9/30/91	Unobligated Funds 9/30/91
U.S. Grain Standards Act				
Inspection and Weighing	\$17,514	\$19,160	(1,646)	909
Canadian Operations	307	314	(7)	(586)
Official Agencies	1,652	1,512	140	4,303
Registration	15	10	5	32
USGSA Subtotal	19,488	20,996	(1,508)	4,658
Agricultural Marketing Act of 1946				
Rice Inspection	3,047	3,473	(426)	(165)
Commodity Inspection	6,563	5,987	576	4,884
AMA Subtotal	9,610	9,460	150	4,719
FGIS Total Fiscal Year 1991	29,098	30,456	(1,358)	9,377

Dollars in Thousands

10/24/91

**Accounting History of FGIS
Appropriated and Fee Supported Funds**

Description	FY 1984 Actual	FY 1985 Actual	FY 1986 Actual	FY 1987 Actual	FY 1988 Actual	FY 1989 Actual	FY 1990 Actual	FY 1991 Actual
Appropriated Funds								
Budget Authority	6,681	6,994	6,702	6,826	7,020	8,115	8,185	9,706
Total Obligations	6,738	6,676	6,396	6,694	6,806	7,496	8,017	9,527
Difference	123	318	306	132	214	619	168	179
Fee Supported Funds								
Fund Limitation	34,777	36,856	36,856	36,856	36,856	36,856	36,856	37,164
Total Obligations	30,932	31,467	29,558	29,517	31,094	34,795	33,943	30,456
Total Revenue	32,905	31,731	27,506	32,382	34,538	34,472	30,670	29,098
Profit/(Loss)	1,973	264	(2,052)	2,865	3,444	(323)	(3,273)	(1,358)
Total Obligations	37,670	38,143	35,954	36,211	37,900	42,291	41,960	39,983
Total Ceiling	41,638	43,850	43,558	43,682	43,876	44,971	45,041	46,870

Dollars in Thousands

10/24/91