



United States  
Department of  
Agriculture

Farmers  
Home  
Administration

Washington  
D.C.  
20250

FmHA AN. No. 2356 (1962)  
September 6, 1991

SUBJECT: Aflatoxin Testing of Inventory Grain

TO: State Directors, District Directors,  
and County Supervisors

ATTN: State Environmental Coordinators  
and Farmer Programs Chiefs

PURPOSE/INTENDED OUTCOME:

The purpose of this Administrative Notice (AN) is to provide guidance to field offices in determining, prior to accepting commodities into inventory, whether those commodities are contaminated with aflatoxin. In addition if commodities already in inventory are contaminated with aflatoxin, this AN provides information on the procedures required to conduct the sale or disposal of the contaminated commodity in accordance with regulatory standards.

COMPARISON WITH PREVIOUS AN:

This AN replaces FmHA AN No. 2254, issued March 22, 1991, due to expire on February 29, 1992, and discusses in greater detail the sampling protocols and procedures used in determining whether or not agricultural commodities are contaminated with aflatoxin.

IMPLEMENTATION RESPONSIBILITIES:

If an agricultural commodity is or will become Government inventory property, the FmHA official will immediately notify the Farmer Program Chief and State Environmental Coordinator (SEC). The SEC will provide the FmHA official with guidance on the proper sampling and testing procedures, in accordance with the Federal Grain Inspection Services (FGIS) recommendations, to determine if the commodity is contaminated. If the commodity is found to be contaminated with aflatoxin or any other contaminant, the SEC will provide the FmHA official with guidance for the handling of the commodity, after consultation with the Food and Drug Administration (FDA), State regulatory agencies, and/or the Environmental Protection Agency.

EXPIRATION DATE:  
July 31, 1992

FILING INSTRUCTIONS:  
Preceding FmHA Instruction 1962-A



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Secretary of Agriculture, Washington, D.C. 20250

## BACKGROUND:

Aflatoxins are a group of toxic compounds produced by naturally occurring molds and are typically a problem in stored grains and feeds. For the sake of simplicity we will not differentiate between the different kinds of aflatoxins. Aflatoxin can form on crops in the field, in storage or after the grain has been milled into processed feed products. Grain crops grown under stressful conditions such as drought and high temperatures or weakened by insect or other damage are more susceptible to aflatoxin contamination. Consumption of aflatoxin contaminated grains or feeds can cause illness or even death. Generally the crops which are most often affected by aflatoxin are corn, peanuts, sorghum, cottonseed, and tree nuts.

From a regulatory perspective, the FDA has oversight authority for aflatoxin contaminated commodities and has established action levels on the amount of aflatoxin allowable in foods and feeds. The strictest action level set by FDA is 20 ppb (parts per billion) for foods destined for human consumption. It is at this level (20 ppb) that FDA considers a food commodity to be "adulterated" with aflatoxin and potentially injurious to human health. In addition, FDA has enforcement authority at 20 ppb to seize or confiscate the commodity. Other action levels determined by FDA for aflatoxin contaminated commodities for uses other than human consumption are enclosed as attachment 1.

## SAMPLING PROTOCOLS:

Prior to accepting a commodity into inventory and for all commodities currently in inventory as of the date of this AN, the FmHA official shall obtain a sample of the commodity and submit the sample to an approved laboratory for analysis. For analytical quality control purposes, corn samples collected for aflatoxin testing will be sent to a FGIS field laboratory; other field grains, rice, or related processed products will be sent to FGIS's Commodity Testing Laboratory (CTL) in Beltsville, MD; and peanuts or tree nut samples will be sent to one of the Agricultural Marketing Service's (AMS) laboratories. Included as attachment 2 are listings and addresses for the above laboratories.

Most of the laboratories listed are able to perform both qualitative (used primarily for screening samples to determine if aflatoxin is present at amounts greater than or less than the 20 ppb threshold) and quantitative (detects actual amount of aflatoxin) tests. Initially we are only concerned with the **screening or qualitative** test. This must be specified to the laboratory. In general, qualitative testing services for whole grains and processed feed stuffs cost approximately \$22 per sample with quantitative tests at \$44 per sample. The cost of a qualitative test for tree nuts and peanuts is approximately \$14 with quantitative test at \$25.

Before pulling the sample, the laboratory where the sample will be sent should be contacted to obtain the required paperwork, sample container, and, if necessary, a sealable shipping container. In some cases the paperwork and sampling containers can be obtained at local grain storage facilities.

Grain samples shall be obtained using a grain probe. This device is the only sampling device approved by the FGIS for sampling stationary lots of grains. Samplers should be conscious of the safety requirements necessary for sampling grains in storage containers prior to sampling.

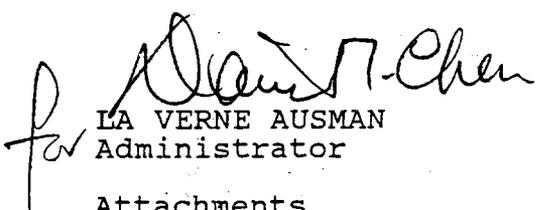
In order to obtain a technically valid sample, the sampling protocols outlined from FGIS's, "Grain Inspection Handbook - Book 1" (Chapter 1-3), need to be followed. This handbook will be mailed to the SEC under a separate cover. The most critical sampling criteria is to take a **representative** sample. In general a 10 pound sample is required for each analysis with one representative sample per storage unit. Due to the growth pattern of the mold that produces aflatoxin, aflatoxin may be localized in pockets within a storage container. This factor highlights the need for careful sampling to insure a that representative sample is obtained. A representative sample should consist of a composite sample where many small samples taken from different spots are mixed together. Remember sample results are only as good as the sample.

Since most FmHA personnel do not have ready access to grain sampling equipment, the best method for obtaining a sample is to require that the farmer/owner of the commodity either physically pull the sample (assuming they have the necessary skills and access to the equipment) or that the farmer/operator or FmHA contract for the work to be done. The FmHA official shall observe the actual sampling to insure that a representative sample of the commodity is taken and that the sample is not tampered with. The FmHA official shall take custody of the sample once it has been taken and will personally secure and mail the sample to the chosen laboratory.

If qualitative sample results are greater than 20 ppb, a decision whether or not to accept the commodity into inventory must be made. The State Director will consult the Assistant Administrator, Farmer Programs, on this point. If the decision is to accept the commodity into inventory or if the commodity is in inventory, the closest FDA regional office must be contacted and informed of the situation. As stated earlier, any food commodity containing aflatoxin at or above levels of 20 ppb is classified as an adulterated food and is strictly regulated by the FDA and corresponding state regulatory bodies. The FDA will provide guidance on a case by case basis. A list of FDA's national and regional offices are included as Attachment 2.

Before any remedial actions are taken the testing laboratory should be contacted as soon as possible and directed to complete a quantitative test on the commodity sample already submitted. Testing laboratories typically retain commodity samples for a short period of time and will be able to retest a sample. Once a level of aflatoxin is determined, the FDA will be able to supervise and provide case-by-case guidance on what must be done to remediate the commodity to bring the level of aflatoxin down to an appropriate level for a particular use.

Questions concerning this AN should be directed to Mark S. Plank, Environmental Protection Specialist, Program Support Staff, National Office, at FTS 382-9619 or commercial (202) 382-9619.

  
LA VERNE AUSMAN  
Administrator

Attachments

## Attachment 1

ACTION LEVELS  
USAGE CHART

0-20 ppb	21-100 ppb	101-200 ppb	201-300 ppb
All food for human consumption	Corn intended for breeding beef cattle	Corn for finishing swine, 100 lbs or greater	Corn intended for finishing beef cattle
Corn intended for immature animals (including immature poultry)	Breeding swine		Cottonseed meal intended for beef cattle, swine, or poultry
Dairy animals			
When destination is not known.			

Attachment 2

USDA Agricultural Marketing Services Aflatoxin Laboratories

PO Box 1368 1411 Reeves Street Dothan, GA 36302	(205) 794-5070
2705 Taft Street Albany, GA 31707	(912) 430-8490
610 N. Main Street Blakely, GA 31723	(912) 723-4570
107 S. Fourth Street Madill, OK 73446	(405) 795-5615
308 Cullen Street Suffolk, VA 23434	(805) 925-2286
PO Box 488 Asburn, GA 31714	(912) 723-4570
301 West Pearl Street Aulander, NC 27805	(919) 345-1661
PO Box 548 Camilla, GA 31730	(912) 336-0785
PO Box 272 Dawson, GA 31742	(912) 995-2111
c/o Golden Peanut Company PO Box 97 Graceville, FL 32440	1-800-451-2348

**List of FDA Offices and Addresses**

**Food and Drug Administration  
5600 Fishers Lane  
Rockville, MD, U.S.A 20857**

**Regional and District Offices**

Atlanta (404)347-3576 60 Eighth Street, N.E. Atlanta, GA 30309	Minneapolis (612)334-4100 240 Hennepin Avenue Minneapolis, MN 55401
Baltimore (301)963-3396 900 Madison Avenue Baltimore, MD 21201	Nashville (615)781-5385 297 Plus Park Boulevard Nashville, TN 37217
Boston (617)279-2051 One Montvale Avenue Stoneham, MA 02180	New York (718)965-5300 850 Third Avenue Brooklyn, NY 11232
Buffalo (716)846-4461 599 Delaware Avenue Buffalo, NY 14202	Newark (201)645-6039 61 Main Street West Orange, NJ 07052
Chicago (312)353-5863 1222 Post Office Building 433 West Van Buren Street Chicago, IL 60607	Orlando (407)855-0900 7200 Lake Ellenor Drive Suite 120 Orlando, FL 32802
Cincinnati (513)684-3501 1141 Central Parkway Cincinnati, OH 45202-1097	Philadelphia (215)597-0837 900 U.S. Customhouse 2nd and Chestnut Streets Philadelphia, PA 19106
Dallas (214)655-5315 3032 Bryan Street Dallas, TX 75204	Seattle (206)486-8788 22201 23rd Drive, S.E. Seattle, WA 98021-4421
Denver (303)236-3000 Denver Federal Center Building 20 P.O. Box 25087 Denver, CO 80225-0087	San Francisco (415)558-2062 50 U.N. Plaza Federal Office Building Room 526 San Francisco, CA 94102
Detriot (313)226-6260 1560 East Jefferson Detriot, NI 48207	San Juan (809)729-6948 P.O. Box 5719 Puerta de Tierrs Station San Juan, PR 00906-5719
Kansas City (816)374-6371 1009 Cherry Street Kansas City, MO 64106	
Los Angeles (213)252-7582 1521 West Pico Boulevard Los Angeles, CA 90015-2486	

FGIS AFLATOXIN LABORATORIES  
Field Office Locations as of 1/1/90

LABORATORY SITES	SCREENING TEST CORN ONLY	QUANTITATIVE AFLATEST CORN ONLY	QUANTITATIVE PLC*	REMARKS
BALTIMORE				
Locust Point	X			
Canton	X			
Port of Albany				
BEAUMONT				
Continental				
Cargill				
BELLE CHASSE				
Cont-Westwego	X	X	X	
Myrtle Grove	X			
Public-N Orleans				
CALIFORNIA(FED/ST)				
Cargill				
Cont. Pier 90				
Cont. Harbor Rd.				
San Diego Bulk				
CHICAGO				
Cargill-Burns	X			
Cargill	X	X		
Cargill "E"(Mil)				
Continental "B"				
Continental "C"				
Gateway				
Cont."KK"(Mil)	X			Coop. Agree. St of Wisconsin.
Rialto				
CORPUS CHRISTI				
Public Elevator	X	X		
Port B'sville				
Interstate				
DESTREHAN				
ADM	X	X		
Bunge	X	X		FGIS uses elev. equip. exclusive.
St. Charles	X		X	
DULUTH				
ADM Elevator "S"				
Cargill "B"	X			
Cargill "C"				
Elevator "A"				
Globe Elevator				
Harvest States #1				
Harvest States #2				
In'tl Multifoods				
PV, Connors Point	X			
PV "The Flats"				
GALVESTON				
Elders Grain				
Union Equity				
KANSAS CITY				
State of Kansas		X		Cooperative Agreement.

LABORATORY SITES	SCREENING TEST CORN ONLY	QUANTITATIVE AFLATEST CORN ONLY	QUANTITATIVE TLC*	REMARKS
LAKE CHARLES/Sub-Off: Continental				
LUTCHER Cargill, Reserve	X	X	X	
LDC, Reserve	X	X	X	
Port Allen				
Paulina				
Zen-Non	X	X	X	
MOBILE Public	X	X	X	
LDC, Pascagoula	X			
SC Farm Bureau	X			Inactive for past few years.
NOPFOLK(Sub-Office) Cargill, South	X	X	X	
Cargill, North	X			
PASADENA Cargill-Houston	X	X		
Houston-Public				
Union Equity				
Woodhouse, Inc.				
PORTLAND Cargill, Term.4				
Columbia Grain		X		
LDC				
Portland Grain				
SAGINAW Berger & Company				
Mid-States				
SAVANNAH(Sub-Office): Continental				
TOLEDO Andersons, Toledo				New lab to be constructed.
Andersons, Maumee				
Burdick, Huron	X			
Cargill, Toledo				
Cargill, Maumee				
Mid-States	X			
WASHINGTON (FED/ST) Cargill, Seattle				
Cont., Longview				
Cont., Tacoma		X		
Harvest States				
Peavey, Kalama		X		
United, Vancouver				
Seattle Dairy Lab			X	St. Wash. coop agree w/Dairy.

\*TLC testing is available for corn and certain other grains at these field locations and the Commodity Testing Laboratory at Beltsville, MD.

FIELD OFFICES

**BALTIMORE**

USDA, FGIS, Suite 116  
120 North Langley Rd.  
Glen Burnie, MD  
21061-6539

Field Office Manager: David M. Mundwiler  
Assistant FOM: Robert S. Lijewski  
Supvry Clk Typg: Rosemary K. Mayne  
Hours: 7:30 - 4:00 (Eastern)

FTS: 922-3968  
COM: (301) 962-3968  
WASH. DC (local) 261-2606

Telemail: FM.BAL  
FAX: COM (301) 766-5207

**BEAUMONT**

USDA, FGIS  
Administrative Office Bldg.  
5815 Walden Rd., Rm. E106  
Beaumont, TX 77707

Field Office Manager: Dorris W. Covington  
Assistant FOM: Brian D. McKee  
Secy Typg: Judith P. Foy  
Hours: 7:30 - 4:00 (Central)

FTS: 527-2425  
COM: (409) 839-2425

Telemail: FM.BEA  
FAX: COM (409) 842-1644

**BELLE CHASSE**

USDA, FGIS  
P.O. Box 686  
Belle Chasse, LA 70037  
\*[115 Keating Drive]

Field Office Manager: Jerry R. Parker  
Assistant FOM: Walter H. Clust  
Off. Srvc. Supvr.: Mary K. Francisco  
Hours: 7:00 - 4:00 (Central)

FTS: 682-6052  
COM: (504) 589-6051

Telemail: FM.BEL  
FAX: FTS 682-6063  
COM (504) 589-6063

**CALIFORNIA**

USDA, FGIS Rm. A-378  
California Federal/  
State Office  
1220 N Street  
Sacramento, CA 95814

Federal/State Mgr.: Michael Johnson  
Hours: 8:00 - 4:30 (Pacific)

COM: (916) 445-1202  
LAB: COM:(916) 324-8143

Telemail: FM.CAL  
FAX: COM (916) 327-5841

\* No mail delivery to street address

FIELD OFFICES (Cont.)

**CEDAR RAPIDS**

USDA, FGIS  
P.O. Box 74855  
Cedar Rapids, IA 52407  
\*[215 Third Ave., SW]

Field Office Manager: Ronald G. Metz  
Assistant FOM: Harold R. Crook  
Secy Typg: Lynn R. Daws  
Hours: 7:30 - 4:00 (Central)

COM: (319) 364-0047

Telemail: FM.CED  
FAX: COM (319) 364-3193

**CHICAGO**

USDA, FGIS  
P.O. Box 634  
Dolton, IL 60419  
\*[11900 Torrence Ave]  
[Chicago, IL 60617]

Field Office Manager:  
Assistant FOM: James A. Eades  
Secy Typg: June Washington  
Hours: 7:30 - 4:00 (Central)

COM: (312) 731-2093

Telemail: FM.CHI  
FAX: COM (312) 731-5939

**CORPUS CHRISTI**

USDA, FGIS  
P.O. Box 2942  
Corpus Christi, TX  
78403  
\*[2121 Navigation Blvd 78402]

Field Office Manager: Larry L. Nafzinger  
Secy Typg: Doris A. Barecky  
Hours: 8:00 - 4:30 (Central)

FTS: 529-3461  
COM: (512) 883-8366

Telemail: FM.COR  
FAX: FTS 529-3463

**CROWLEY**

USDA, FGIS  
P.O. Box 443  
Crowley, LA 70527  
\*[West Highway 90]

Officer in Charge: Wayne M. Melvin  
Hours: 7:00 - 4:00 (Central)

FTS: 687-6694  
COM: (318) 783-0911

Telemail: FM.CRO  
FAX: COM (318) 783-7415

[Port of Lake Charles - COM (318) 494-1606]

\* No mail delivery to street address

FIELD OFFICES (Cont.)

**DESTREHAN**

USDA, FGIS  
P.O. Box 640  
Destrehan, LA 70047  
\*[104 Campus Dr.  
Suite 101]

Field Office Manager: John H. Shropshire  
Assistant FOM: Douglas M. McEnery  
Off. Svcs. Supvr.: Yohanna M. Lorio  
Hours: 7:00 - 3:30 (Central)

FTS: 682-3763  
COM: (504) 764-2324

Telemail: FM.DES  
FAX: FTS 682-3769  
COM (504) 589-3769

**DULUTH**

USDA, FGIS  
334 Federal Bldg.  
Duluth, MN 55802

Officer in Charge: Richard Haynes  
Secy Typg: Vonnie K. Moen  
Hours: 7:30 - 4:00 (Central)

FTS: 780-5283/5284  
COM: (218) 720-5283

Telemail: FM.DUL  
FAX: COM (218) 720-5294  
FTS 780-5294

**GALVESTON**

USDA, FGIS  
P.O. Box 2550  
Galveston, TX 77553  
\*[3001 Water St.]

Field Office Manager: James S. Phelps  
Assistant FOM: Thomas H. Wayne  
Clk Typg: Frances Merritt  
Hours: 7:00 - 4:00 (Central)

FTS: 527-6651  
COM: (409) 763-3208

Telemail: FM.GAL  
FAX: None

**GRAND FORKS**

USDA, FGIS  
P.O. Box 427  
Grand Forks, ND  
58206-0427  
\*[102 N. Fourth St.  
Room 301]

Field Office Manager: Thomas J. Wrenn  
Assistant FOM: Haskell Lancaster  
Secy Typg: Anita M. Harrang  
Hours: 7:30 - 4:00 (Central)

COM: (701) 772-3371

Telemail: FM.GRA  
FAX: COM (701) 772-0362

\* No mail delivery to street address

FIELD OFFICES (Cont.)

**GREENVILLE**

USDA, FGIS  
P.O. Box 4824  
Greenville, MS 38704  
\*[Warfield Pt. Park Rd.  
Comet Delta Rice Mill]

Officer in Charge: Jackie L. Huggins  
Hours: 7:00 - 3:30 (Central)

COM: (601) 335-4805

Telemail: None  
FAX: COM (601) 335-4805

**HOUSTON**

USDA, FGIS  
2320 LaBranch  
Houston, TX 77004

Field Office Manager: William A. Skillern  
Assistant FOM: Myrna L. Wear  
Secy Typg: Mary Lou Wilson  
Hours: 7:30 - 4:00 (Central)

FTS: 526-6690  
COM: (713) 750-1690

Telemail: FM.HOU  
FAX: FTS 526-6689  
COM (713) 750-1689

**INDIANAPOLIS**

USDA, FGIS  
6021 Lakeside Blvd.  
Indianapolis, IN 46278

Field Office Manager: Cornelius (Pat) LaCour  
Assistant FOM: Theodore E. Respet  
Secy Typg: Pamela F. Stanfill  
Hours: 7:30 - 4:00 (Eastern)

FTS: 335-3131  
COM: (317) 290-3131

Telemail: FM.IND  
FAX: None

**JONESBORO**

USDA, FGIS  
P.O. Box 262  
Jonesboro, AR 72403  
\*[2600 S. Madison 72401]

Officer in Charge: Benjamin F. Johnson  
Hours: 8:00 - 5:00 (Central)

FTS: 742-4694  
COM: (501) 932-4585

Telemail: None  
FAX: COM (501) 972-4694

\* No mail delivery to street address

FIELD OFFICES (Cont.)

**KANSAS CITY**

USDA, FGIS, Room 116  
811 Grand Avenue  
Kansas City, MO 64106

Field Office Manager: Diane K. Palecek  
Assistant FOM: Kenneth E. Weaver  
Secy Typg: Marylin J. Wisdom  
Hours: 7:30 - 4:00 (Central)

FTS: 867-5731  
COM: (816) 426-5731

Telemail: FM.KAN  
FAX: None

**LUTCHER**

USDA, FGIS  
P.O. Box 248  
Lutcher, LA 70071  
\*[1961 West Main St.]

Field Office Manager: Ronald E. Cates  
Assistant FOM: Jimmie P. Wright  
Off. Srvc. Supvr.: Glenda L. Lasseigne  
Hours: 7:00 - 4:00 (Central)

FTS: 682-3675  
COM: (504) 869-5451

Telemail: FM.LUT  
FAX: FTS 682-3792  
COM (504) 589-3792

**MEMPHIS**

USDA, FGIS, Suite 175  
310 Mid-Continent Plaza  
West Memphis, AR 72301

Officer in Charge: William B. Strickland  
Hours: 7:30 - 4:00 (Central)

COM: (501) 735-0781

Telemail: None  
FAX: COM (501) 735-0781

**MINNEAPOLIS**

USDA, FGIS  
Suite 130-Towle Bldg  
330 2nd Ave., South  
Minneapolis, MN 55401

Field Office Manager: Kenneth D. Strand  
Assistant FOM: Daniel Murphy  
Secy Typg: Jan Roehler  
Hours: 7:30 - 4:00 (Central)

FTS: 784-4095  
COM: (612) 334-4095

Telemail: FM.MIN  
FAX: FTS 784-4094  
COM (612) 334-4094

**MOBILE**

USDA, FGIS  
P.O. Box 2708  
Mobile, AL 36652  
\*[458 Government St  
36602]

Field Office Manager: Robert A. Zortman  
Assistant FOM: William Shelby  
Secy Typg: Susan W. Schottgen  
Hours: 7:30 - 4:00 (Central)

FTS: 537-2114  
COM: (205) 690-2114

Telemail: FM.MOB  
FAX: FTS 537-2910  
COM (205) 690-2910

FIELD OFFICES (Cont.)

WASHINGTON

USDA, FGIS, Suite B  
Washington Federal/  
State Office  
2728 Westmoor Court, SW  
Olympia, WA 98502

Federal State Manager: Edward L. Brown  
Hours: 8:00 - 4:30 (Pacific)

FTS: 434-9072  
COM: (206) 753-6964  
LAB: FTS: 434-9073

Telemail: FM. WAS  
FAX: COM (206) 586-5257

WICHITA

USDA, FGIS  
U.S. Courthouse  
401 N. Market St., Rm. 18  
Wichita, KS 67202

Field Office Manager: Ronald R. Dunagan  
Assistant FOM: Roger L. Friedrich  
Secy Typg: Judith J. Johnston  
Hours: 7:30 - 4:00 (Central)

FTS: 752-7171  
COM: (316) 269-7171

Telemail: FM.WIC  
FAX: FTS 752-6163  
COM (316) 269-6163