

## PESTICIDE RESIDUE TESTING FOR GRAIN

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## 1. PURPOSE

This directive specifies the procedures for obtaining pesticide residue testing services for grain under the U.S. Grain Standards Act (USGSA).

## 2. REPLACEMENT HIGHLIGHTS

This directive supersedes FGIS Program Directive 9180.40, Pesticide Residue Testing for Grain, dated May 11, 2023. This directive updates responsibilities of the Technology and Science Division (TSD), Official Service Providers (OSP), including Field Offices (FO) for official samples. All official samples must be accompanied with a 907 Form filled out by the applicant, Pesticide Residue Transmittal Form, and the Load Orders. Sample submissions must include a 907 Form filled out by the applicant and Pesticide Residue Transmittal Form.

## 3. BACKGROUND

Upon request, the United States Department of Agriculture (USDA), Agricultural Marketing Service (AMS) Federal Grain Inspection Service (FGIS) provides pesticide residue testing service for grains.

The service is performed by FGIS, Technology and Science Division (TSD) in Kansas City, Missouri. The service is provided using gas chromatography/tandem mass spectrometry and/or liquid chromatography/tandem mass spectrometry for routine compounds.

- a. Compounds Tested. FGIS tests for the following residue compounds:
  - (1) Routine Compounds. Compounds are listed in Attachment 1 by commodity. The applicant must select which lists will be tested for in the sample.
  - (2) Special Compounds. Compounds are by request and are subject availability. Contact TSD's Analytical Chemistry Branch (ACB) at 816-702-3800 for expected sample availability, pricing and turnaround time.
- b. Types of Services. There are three types of pesticide residue testing services available:
  - (1) Official Sample-Lot Service. Analysis is based on an official sample obtained and analyzed by official personnel.
  - (2) Submitted Sample Service. Analysis is based on a sample submitted by the applicant for service and analyzed by official personnel.
  - (3) Warehouseman's Sample-Lot Inspection Service. Analysis is based on an official sample obtained by a licensed warehouseman sampler and analyzed by official personnel.

- c. Basis of Determination. All grains are tested on the basis of the sample as a whole. Shiplots and combined lots are tested on a composite sample. Upon request, testing can be performed on a subplot basis.

#### 4. RESPONSIBILITIES

- a. Applicant for Service. All submitted samples must include load orders (if official sample), Pesticide Residue Testing Transmittal Form (see Attachment 2), and a 907 Form. The 907 Form can be found at <https://www.ams.usda.gov/sites/default/files/media/FGIS907>. The request must include the applicant's name, address, and telephone number; and the desired test(s). The applicant must have an active account. If the account is charge, on demand payment is required in advance.
- b. Technology and Science Division.
  - (1) Official Sample-Lot Service and Warehouse Samples. For official sample lot service and warehouseman's samples sent to TSD, TSD is responsible for performing the requested test, maintaining a file sample, issuing the certificate, and billing the applicant for the services.
  - (2) Submitted Sample Service. For submitted samples, TSD is responsible for performing the requested test, maintaining a file sample, issuing the certificate, and billing the applicant for the services.
- c. Official Service Providers including Field Offices.
  - (1) Official Sample Lot Services and Warehouse Samples. For official sample lot service and warehouse samples, the applicant must submit a 907 form and Pesticide Residue Testing Transmittal Form (see Attachment 2). The sample load orders should be forwarded as well.
  - (2) Submitted Sample Service. FGIS Field Offices and Official Service Providers must direct applicants to forward samples directly to TSD for testing and certification.

#### 5. PREPARING AND FORWARDING SAMPLES

- a. Sample Preparation. From a representative sample, use a Boerner divider to obtain a minimum 500-gram sample and place in an airtight container. Retain a second sample of at least 500-grams as a reserve in an airtight container (e.g., double-sealed plastic bag) in case the first test sample is lost and must be resubmitted. Work samples may be used once they have served their intended purpose.

- b. Sample Forwarding. Place the container inside a canvas bag and include a copy of the certificate, a copy of the request for service, and completed Pesticide Residue Testing Transmittal Form (see Attachment 2).

Provide all necessary information to ensure timely results. Write “PAS” on the shipping label in large bold letters. If the applicant arranges for sample delivery, affix a blank tag to the sealed sample marked accordingly with the desired test service before surrendering it to the applicant.

Mail all samples to:

USDA, AMS, FGIS, PAS  
Technology and Science Division  
10383 North Ambassador Drive  
Kansas City, Missouri 64153-1394

## 6. REVIEW INSPECTIONS

- a. 7 CFR 800.125 and 800.135 permit a review inspection on either official grade/factors or official criteria. When requested, a review inspection for official grade/factors and official criteria may be handled separately even though both sets of results are reported on the same certificate.
- b. Applicants may request either qualitative or quantitative review analysis unless the original or a review analysis was quantitative. Then, only a quantitative analysis is available. All review inspection results replace previous results.

## 7. CERTIFICATION

- a. Residue results may be reported on a separate certificate or on the certificate for grade (at the applicant’s option). When residues are certified for export certificates, the date of the certificate is the date that loading was completed. The date of domestic certificates is the date that pesticide residue testing results are received. See the Grain Inspection Handbook, Book IV, Chapter 3, Certificates, for further certification instructions.
- b. Certify the test results in the “Results” section of the certificate:
- (1) Show the results that meet or exceed the detection limit as reported by TSD. Occasionally, detection limits for certain compounds may need to be higher than the limits shown in the compound lists based on quality control results.

For example: Fluridone 10.5 ppb  
Oxadixyl 21 ppb  
Malathion 610 ppb

For test results that are less than the detection limit, certify as less than the detection limit.

For example: Aldrin < 20 ppb, Malathion < 10 ppb

c. Optional Certification:

If requested by the applicant, use the following statement in the “Remarks” section of the certificate.

“(Name of pesticide) residue less than (record contract specification).”

## 8. FEES

Fees are shown in FGIS Program Directive 9180.74 found on the AMS FGIS website at <https://www.ams.usda.gov/about-ams/fgis-program-directives>.

Testing fees are applicable to any level of service (original inspection, review inspection, appeal inspection, or Board appeal inspection) and do not include a sampling service fee that, if applicable, is assessed separately in accordance with the applicable fee schedules.

## 9. ATTACHMENTS

Attachment 1 – Routine Compound Lists By Commodity and Pesticide Analysis Method (PAM)

Attachment 2 – Pesticide Residue Testing Transmittal Form

## Corn, Soybeans, and Wheat - PAM - 1

PESTICIDE RESIDUE	Detection Limit (ppb)	PESTICIDE RESIDUE	Detection Limit (ppb)	PESTICIDE RESIDUE	Detection Limit (ppb)
Acetochlor	10	Disulfoton sulfoxide	5	Methoxychlor	5
Alachlor	10	Endosulfan I	10	Metolachlor	10
Aldrin	20	Endosulfan II	10	Metribuzin	20
Allethrin	100	Endosulfan sulfate	10	Myclobutanil	10
Atrazine	5	Endrin	10	Norflurazon	10
Bifenthrin	10	Esfenvalerate	20	Norflurazon desmethyl	10
Boscalid	5	Ethalfuralin	5	Omethoate	10
Bromuconazole	10	Etridiazole	10	Oxadixyl	10
Carboxin	5	Fenbuconazole	20	Oxyfluorfen	10
Carfentrazone ethyl	5	Fenbuconazole 9129	10	Parathion	10
Chlorpyrifos	10	Fenbuconazole 9130	10	Parathion methyl	10
Chlorpyrifos methyl	10	Fenitrothion	10	Parathion methyl O-analog	10
Clodinafop propargyl	10	Fenoxaprop ethyl	5	Parathion O-analog	10
Clomazone	10	Fenpropathrin	10	Pendimethalin	10
Cyanazine	10	Fluazifop-p-butyl	10	Permethrin	20
Cyfluthrin	20	Fludioxonil	10	Phorate	20
Cyhalothrin	20	Flufenacet	10	Phorate sulfone	20
Cypermethrin	50	Flumioxazin	10	Piperonyl butoxide	10
DDD-p,p'	5	Fluridone	10	Pirimiphos methyl	10
DDE-p,p'	5	Heptachlor epoxide	5	Prallethrin	100
Deltamethrin	20	Hexaconazole	5	Propanil	10
Diazinon	5	Hydroprone	100	Pyriproxyfen	50
Diazinon O-analog	5	Imazalil	10	Quizalofop ethyl	10
Diclofop methyl	10	Indoxacarb	20	Resmethrin	10
Dieldrin	5	Lactofen	10	TCMTB	20
Dimethenamid	5	Lindane	10	Tetrahydrophthalimide	50
Dimethoate	10	Malathion	10	Triadimefon	5
Dimethomorph	10	Malathion O-analog	10	Triadimenol	50
Disulfoton	5	Metalaxyl	10	Triallate	5
Disulfoton sulfone	5	Methoprene	20	Trifluralin	10
				Triticonazole	5

Corn, Soybeans, and Wheat  
PAM - 2

PESTICIDE RESIDUE	Detection Limit (ppb)
3-Hydroxycarbofuran	10
5-Hydroxythiabendazole	10
Acephate	40
Aldicarb	10
Aldicarb sulfone	10
Aldicarb sulfoxide	10
Bendiocarb	5
Benoxacor	10
Carbaryl	10
Carbendazim	5
Carbofuran	10
Chlorimuron ethyl	10
Clethodim	50
Clofencet	30
Clothianidin	10
Dichlorvos	20
EPTC	20
Flumetsulam	10
Imazamox	10
Imazaquin	10
Imidacloprid	10
Linuron	10
Methamidophos	30
Methomyl	10
Methoxyfenozide	10
Oxamyl	10
Prothioconazole-desthio	100
Saflufenacil	20
Spinosad	10
Sulfentrazone	50
Thiabendazole	10
Thifensulfuron methyl	20

Corn, Soybeans, and Wheat  
PAM - 3

PESTICIDE RESIDUE	Detection Limit (ppb)
Azoxystrobin	5
Benzovindiflupyr	5
Boscalid	10
Cyproconazole	5
Difenoconazole	5
Epoxiconazole	5
Fenarimol	50
Fluoxastrobin	5
Fluquinconazole	15
Flutriafol	5
Fluxapyroxad	5
Myclobutanil	5
Propiconazole	5
Pymetrozine	5
Pyraclostrobin	5
Pyroxasulfone	5
Sedaxane	5
Tebuconazole	5
Tetraconazole	10
Thiamethoxam	5
Trifloxystrobin	5

Corn and Soybeans  
PAM - 5

PESTICIDE RESIDUE	Detection Limit (ppb)
2,4-Dichlorophenoxyacetic acid (2,4-D)	5

Soybeans  
PAM - 12

PESTICIDE RESIDUE	Detection Limit (ppb)
2,4-Dichlorophenoxyacetic acid (2,4-D)	10
2,6-Dichlorosaicylic acid (DCSA)	200
5-Hydroxy-dicamba (5-OH)	100
Dicamba	100

Corn, Soybeans, and Wheat  
PAM - 10

PESTICIDE RESIDUE	Detection Limit (ppb)
3-Methylphosphinicopropionic acid (3-MPPA)	50
Aminomethylphosphonic acid (AMPA)	50
Glufosinate ammonium	50
Glyphosate	10

Corn, Soybeans, and Wheat  
PAM - 11

PESTICIDE RESIDUE	Detection Limit (ppb)
Diquat	10
Mepiquat	10
Paraquat	10



<b>Pesticide Residue Testing Transmittal Form</b>	
<b>Applicant's Name</b>	
<b>Applicant's Address</b>	
<b>Applicant's Telephone Number</b>	
<b>Email Address to Receive Certificate(s)</b>	
<b>Desired Certification (Qualitative/Quantitative)</b>	
<b>Contract Specification(s)</b>	
<b>Type of Pesticide Testing</b> <ul style="list-style-type: none"> <li>• Check Routine Compound Lists for desired testing</li> <li>• Contact ACB for special compounds availability and pricing</li> </ul>	<p style="text-align: center;"><u>For corn, soybean or wheat unless stated</u> Routine Compound List</p> <input type="checkbox"/> PAM - 1 <input type="checkbox"/> PAM - 2 <input type="checkbox"/> PAM - 3 <input type="checkbox"/> PAM - 5 (corn and soybeans) <input type="checkbox"/> PAM - 10 <input type="checkbox"/> PAM - 11 <input type="checkbox"/> PAM - 12 (soybeans only)
<b>Sampling Method</b>	
<b>Customer Sample Identification (Official Samples include Load Orders)</b>	
<b>Official Weight of Sample</b>	
<b>Sampling Location</b>	
<b>Date Sampled</b>	
<b>Date Sample Mailed to TSD</b>	