**OKLAHOMA DEPARTMENT OF AGRICULTURE,
FOOD, AND FORESTRY**
MEAT AND POULTRY INSPECTION SERVICE
OKLAHOMA CITY, OK

# MPI NOTICE	1002	9/13/12

USING THE FAST ANTIMICROBIAL SCREEN TEST (FAST) TO DETECT ANTIMICROBIAL DRUG RESIDUES IN CATTLE AND SWINE

I. PURPOSE

To provide updated instructions concerning the inspector-generated antimicrobial drug residue screening tests in cattle and swine. A new section has been added that addresses residue sampling in plants that slaughter cull dairy animals. This notice cancels OK MPI Notice 05-08 and has been renumbered to fit in the revised MPI numbering system.

II. CANCELLATION

OK MPI Notice 05-08

III. REFERENCES

2 O.S. § 6-182(j)
9 CFR §§ 309, 310, 311, and 320
FSIS Directive 10,220.3; and 10,800.1
FAST Test Guide

IV. BACKGROUND

When inspection program personnel suspect, based on herd history or ante-mortem or post-mortem examination, that an animal may have illegal levels of antimicrobial drug residues, in-plant inspection personnel are to conduct an in-plant screening test to determine whether they will need to submit a sample to an FSIS Laboratory for further testing. This testing is necessary in problem slaughter classes or subpopulations of these classes (those with a high prevalence of antimicrobial residue violations) and helps to detect carcasses with violative antimicrobial residues, so that they will not enter the food supply. It is also used to more closely monitor producers and others who are known to have marketed animals with violative concentrations of antimicrobial residues to determine whether the non-compliance has been corrected, and to verify the performance of an establishment's HACCP system in preventing or eliminating chemical (residue) hazards.

V. IN-PLANT RESIDUE SCREENING PROCEDURES

A. At slaughter, the in-plant inspection personnel will look for indications of illegal chemical use or exposure and collect the required tissue samples for residue analysis as part of the verification of the food safety system. Observations of injection sites/signs of treatment,
recent surgery (e.g., abomasal surgery), septicemia/pyemia, or animals identified at ante-mortem as "Oklahoma Suspect" will always indicate that residue testing is appropriate.

B. Depending on the slaughter class involved, there are pathologies that, if found, can also indicate residue testing is appropriate. The in-plant inspection personnel should use professional judgment when selecting carcasses for chemical or veterinary drug residue analysis based on evidence of acute disease, production practices, herd history, environmental exposure, and threats to homeland security.

C. In-plant inspection personnel are to collect all animal and owner identification from the establishment when they submit a sample for residue testing (e.g.., livestock market or sale barn back tags, feedlot identification tags, Canadian tags, and calf-hood tags [bangs]). (See 9 CFR §§ 309.16; 309.17; 310.2; 310.3; 310.21; 320.1; FSIS Directive 10,220.3; and 10,800.1)

D. The list in FSIS Directive 10,220.3 Part VI, contains descriptions of pathology and conditions that warrant retention and testing of carcasses. Symptoms are described to help in-plant inspection personnel determine when to test and retain carcasses. In-plant inspection personnel should test animals for residues when they identify them as Oklahoma Suspect during ante-mortem inspection. In addition, in-plant inspection personnel should conduct residue testing regardless of whether the carcass has been condemned or passed. The list of symptoms may also be useful when the ODAFF veterinarian correlates with their CSIs about when they should retain a carcass for veterinary review and disposition.

E. Inspector-Generated Samples

1. Inspection program personnel are to collect tissue samples every time there is reason to suspect that a violative residue is present.

NOTE: There are no exceptions to this direction. Inspection program personnel are to take a sample of any tissue that they believe may contain a violative level of a chemical residue.

2. The in-plant inspection personnel are to conduct rapid, in-plant screening tests on any carcass that, based on herd history or ante-mortem or post-mortem inspection findings, there is reason to believe may have an illegal drug residue. The in-plant inspection personnel are to retain the carcass while they perform the in-plant screening test.

    a. The in-plant inspection personnel are to perform in-plant screening tests on

any animal they suspect of containing an illegal drug residue. When the in-plant screening test is positive, the liver, kidney and muscle tissues, along with FSIS Form 10,000-2 are sent to the FSIS laboratory for analysis.

b. If the in-plant screening test is negative, the ODAFF veterinarian is to determine whether there is reason to suspect that a residue exists that is other than an antimicrobial drug residue. In-plant screening tests are unable to detect anti-inflammatory drugs like flunixin or phenylbutazone, and therefore, the ODAFF veterinarian is to submit liver, kidney and muscle samples to the appropriate FSIS laboratory for further testing with FSIS Form 10,000-2 if they have reason to suspect that an anti-inflammatory drug was used. The carcass and parts of the suspect animal are to be retained until results are available.

c. The descriptions of pathologic conditions that may warrant retention and testing of carcasses are described in Part D of this section. In addition to these conditions, in-plant inspection personnel are to use the following guidance:

i. Unless there is clear evidence of a recent injection, bolus injury, or surgical intervention, in-plant inspection personnel are not to select animals with chronic conditions such as neoplasia, chronic pneumonia, chronic peritonitis, or chronic nephritis for residue testing.

ii. In-plant inspection personnel are to select animals with potential neoplasia or acute inflammatory conditions (e.g., pneumonias or peritonitis cases) for in-plant screening.

VI. ADDITIONAL IN-PLANT RESIDUE SCREENING PROCEDURES IN PLANTS THAT SLAUGHTER CULL DAIRY ANIMALS

A. As a result of the high incidence of drug residue violations in cull dairy animals, establishments that slaughter these animals will be subject to an increased sampling frequency unless the establishment can demonstrate they have implemented effective measures to prevent or reduce the possibility that it will receive animals for slaughter with a violative drug residue.

1. IPP are to perform in-plant screening tests at an increased frequency if an establishment is not able to demonstrate (i.e., by pointing to aspects of its food safety system) that it has put in place measures designed to prevent or reduce the possibility that it will receive animals for slaughter with a violative residue. For example, if an establishment does not have controls in place that address the possibility that it may receive animals from producers that are on the FSIS Repeat Residue Violator List (e.g., because it purchases animals at an auction barn that does not provide information on whether the animals are from a producer on the Repeat Residue Violator List), IPP are to perform residue screening tests at an increased rate. The FSIS Residue Repeat Violator List for Use by FSIS Inspection Program Personnel can be found here:

http://www.fsis.usda.gov/PDF/Residue_IPP.pdf

2. An establishment may show that it is informing itself of the source of the animals it slaughters by maintaining information identifying the producer, including but not limited to the producer's name and physical address. However, providing the identification of the producer is not a regulatory requirement. In lieu of producer information, an establishment may obtain a letter or some other type of credible certification from the seller or livestock market or auction that demonstrates that the animals offered for slaughter are not from a producer who is shown as having had more than one residue violation in the last 12 months on the most recently posted FSIS Repeat Residue Violator List. In addition, this documentation may also identify those animals from a producer known to be on the Residue Repeat Violator List. The Residue Repeat Violator List for Use by Livestock Markets and Establishments can be found here:

http://www.fsis.usda.gov/PDF/Residue_EST.pdf

B. If the increased rate of testing referred to in VI.A., above, is warranted, IPP are to:

1. Test a minimum of two animals each time the establishment receives animals, and the establishment does not have a control in place that minimizes the possibility that the animals have an illegal residue,

2. Use professional judgment to determine whether additional sampling is necessary, up to 100% testing of the lot, based on the effectiveness of the establishment's residue control program at reducing or eliminating the occurrence of FSIS violative findings,

3. Continue increased testing rate as determined in III. B.1. and 2. on all dairy cows and bob veal as long as the establishment lacks an effective control program, and

4. Use the increased testing rate for dairy cows and bob veal from any unknown source, even if the animals appear to be normal, as well as on animals with pathologies listed in FSIS Directive 10,220.3. For bob veal, this increased testing rate is in addition to the rate described in 9 CFR 310.21.

C. IPP are to follow FSIS Directive 10,220.3, Section VI (Link provided below) regarding the conditions and pathologies that warrant retention and testing of carcasses. At slaughter, the IPP will look for indications of illegal chemical use or exposure and collect tissue samples for residue analysis as part of verification of the food safety system. IPP are expected to follow Directive 10,220.3, even if establishments provide supporting information on producers.

http://www.fsis.usda.gov/OPPDE/rdad/FSISDirectives/10220-3.pdf

VII. FAST TEST IMPLEMENTATION

A. The equipment and supplies required for FAST test screening are:

- Clean knife, plastic bags, fine-tipped permanent marker, and rubber bands;

- Oklahoma Retained Tags;
- Sterile cotton swabs;
- FAST agar plates;
- *Bacillus megaterium* spore suspension;
- Antibiotic sensitivity discs (N5discs);
- Thumb forceps;
- Incubator stabilized at 44º ± 0.5ºCelsius; and
- Metric measuring device with millimeter graduations

B. It is important that in-plant inspection personnel be aware of and follow the proper storage procedures for FAST test supplies. These procedures are listed below:

- The FAST agar plates are considered shelf-stable and should be stored at room temperature, protected from extremes of heat, cold and moisture. Refrigeration may prolong shelf life, but freezing will ruin the plate because it separates water from the agar.
- The N5 discs are perishable and must be refrigerated. The protective container for the dispenser of N5 discs should not be opened until the discs are first used. After each use, the dispenser and the desiccant pellet should be placed in a sealed plastic bag and returned to refrigerated storage.
- The *Bacillus megaterium* spores are considered shelf-stable, but their useful shelf life will be prolonged if they are kept refrigerated. Be sure the screw-cap is tight to prevent evaporation of the ethanol carrier.

C. All in-plant inspection personnel who are assigned to slaughter duties must be familiar with the FAST Test Guide and follow the instructions in this guide when conducting FAST residue screening. All slaughter assignments have been provided with a hard copy of this guide, which should be kept in the plant files for use as a reference. An electronic version of this guide is also available on the FSIS website at:

http://www.fsis.usda.gov/PDF/FAST.pdf

VIII. RESPONSIBILITIES AFTER OBTAINING THE RESULTS FROM THE SCREENING TESTS

A. If the rapid in-plant antimicrobial residue screening test result is positive, the in-plant inspection personnel are to continue to retain the carcass and parts and submit appropriate tissue samples (liver, kidney, and muscle tissue) for further testing at the appropriate FSIS Laboratory. The supervisor should be notified immediately in the case of a positive result. Carcasses that are condemned by the establishment or due to pathology need not be retained pending lab results.

B. If the rapid in-plant antimicrobial drug screening test result is negative, the in-plant inspection personnel are to release the carcass and parts, unless in the professional opinion of the veterinarian there is reason to believe that residues other than antimicrobial drug residue exist that the in-plant rapid screening test will not detect (e.g., flunixin, phenylbutazone). In such cases, the in-plant inspection personnel are to

continue to retain the carcass and parts and sample the appropriate tissues (i.e., liver, kidney and muscle tissue) for submission to the appropriate FSIS laboratory for further testing.

IX. RESPONSIBILITIES AFTER RECEIVING THE FSIS LABORATORY RESULTS

A. The ODAFF veterinarian is to follow the disposition guidelines to make the final disposition of the retained carcass and parts.

Common Residue Tissue Guidelines

a. Violation **in muscle** – condemn carcass and parts.

b. Violation **in muscle and parts** – condemn carcass and parts.

c. Violation **in fat** – condemn carcass and parts.

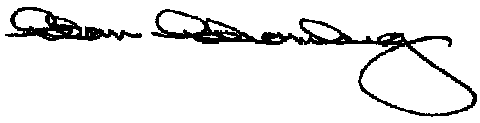
d. Violation **in parts** but not muscle – release carcass and condemn parts

e. Flunixin violation – call the ODAFF MPI Oklahoma City Office for disposition of carcass and parts.

B. If any test results from the FSIS laboratory show violative levels of antimicrobial residues the PHV should notify the ODAFF MPI Oklahoma City Office.

C. If the test results from the FSIS laboratory show non-violative levels of antimicrobial residues, the ODAFF veterinarian should release the carcass and parts.

Any questions about FAST residue screening tests should be referred through supervisory channels.



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DISTRIBUTION: **SUBJECT CATEGORY:**

All MPI Personnel **Slaughter**