

DRAFT
MARKET HOGS



HIMP
**(HACCP-BASED INSPECTION
MODELS PROJECT)**

HIMP MARKET HOG INSPECTION

Background

FSIS collected data to determine the current food safety and other consumer protection achievements of the traditional inspection system in five market hog slaughter plants. The data were used to develop performance standards that volunteer plants in the HACCP-based Inspection Models Project (HIMP) must meet. The performance standards were published in a Federal Register Notice on November 2, 2000. A total of six performance standards were developed: three Food Safety categories (FS 1-3) and three Other Consumer Protection categories (OCP 1-3). The performance standards for the Food Safety categories (FS-1-3) were set at zero. The performance standards for the Other Consumer Protection categories (OCP 1-3) were based on the 75th percentile of the ranges of baseline data. (See Attachment 1)

Types of Inspection Activities

The Market Hog HIMP pilot consists of three types of inspection activities: system inspection, carcass inspection, and verification inspection. System inspection involves the evaluation of in-plant inspection findings and determines the effectiveness of the overall design and execution of all establishment slaughter processes under the HACCP and process control plans. Carcass inspection involves the examination of each carcass and its parts to determine that they are unadulterated. Verification inspection involves the evaluation of the effectiveness of the establishment's HACCP and Process Control plan in meeting the relevant performance standards. These three types of inspection are discussed in further detail below.

System Inspection - The System Inspector (SI) is either the Inspector in Charge (IIC) or the Supervisory Veterinary Medical Officer (SVMO). The SI has overall responsibility to assure that the plant and inspection personnel effectively conduct the required activities under the HIMP, as designed. The SI sends verification data to headquarters and provides overall feedback on how the project is working. Specifically, the SI:

- Determines (or assigns to the verification inspector (VI))* the daily random sampling schedule and provides the schedule to the VI.
- Monitors and determines the effectiveness of ante-mortem verification inspection.
- Monitors and determines the effectiveness of the establishment ante-mortem sorting.
- Determines final disposition of animals designated by the VI as “suspects” at ante-mortem.
- Monitors and determines the effectiveness of the establishment’s post-mortem sorting and disposition.
- Determines final disposition on carcasses retained by the carcass inspector (CI) or VI on post-mortem.*
- Records FS-1 and FS-3 nonconformance findings on the appropriate HIMP form.
- Determines if the establishment is meeting relevant performance standards.
- Assesses the overall design and execution of the establishment’s HACCP and process control procedures.
- Assures that all adulterated products are condemned in accordance with applicable regulations.
- Determines when unscheduled verification sampling is warranted.

- Maintains communication with the VI and CIs to facilitate coordination of all ante-mortem and post-mortem findings.

Carcass Inspection - The Carcass Inspectors (CI) are stationed at up to 3 fixed locations on the post-mortem line to determine whether a product is adulterated or unadulterated. They inspect each carcass and part on the line, as well as evaluate the on-going effectiveness of the establishment's food safety and other consumer protection processes. Specifically, the CIs:

- Determine whether each carcass and its parts are adulterated or unadulterated.
- Take appropriate action to prevent adulterated product from entering into human food channels.
- Notify the establishment personnel, VI and/or SI of carcass and/or parts defect findings.
- Examine sample sets when notified by the VI and verbally inform the VI during sampling when defects are found.
- Contact the SI if there are any concerns about process control.
- Retain carcasses and parts for further disposition by the SI if food safety and other conditions are identified that could result in condemnation.
- Maintain communication with the VI and SI to facilitate coordination of all post-mortem findings.

Verification Inspection - The Verification Inspector (VI) does not have a fixed position on the line, and can move freely. Specifically, the VI:

- Observes and evaluates the effectiveness of the establishment's HACCP and process control plans, including the examination of records, to determine whether the establishment is in compliance with applicable regulatory requirements.
- Conducts ante-mortem inspection of all animals at rest and 5-10 percent of animals in motion.
- Retains animals for further disposition by the SI, if the animal is suspected of having a condition that could result in condemnation.
- Documents ante-mortem findings on HIMP FORM 9.
- Takes verification samples to determine if establishment is complying with relevant performance standards, including scheduled and unscheduled sampling.
- Records all findings of noncompliance with applicable performance standards.
- Notifies the CI when verification samples are required and records the findings in each sample set during post-mortem. Evaluates the noncompliance findings and records in the appropriate category on HIMP form 7.
- Investigates potential process control problems.
- Notifies SI if the process control plan is not being met or if performance standards have been exceeded.
- Retains carcasses and parts for further disposition by the SI if food safety and other conditions are identified that could result in condemnation.
- Maintains communication with the CI and SI.

MARKET HOG INSPECTION STATION

Facilities required at each inspection station include:

1. The conveyor and/or rail shall be level for the entire length of the inspection station.
2. Floor space shall be adequate along the conveyor and rail.
3. Conveyor and rail stop/start switches shall be readily accessible.
4. A minimum of 50 foot-candles of shadow-free lighting shall exist at each inspection station.

Inspection Stations will be established at up to 3 locations:

FSIS personnel are responsible for inspecting each head, viscera, and carcass. These locations will be:

1. After the mandibular lymph node incision step and before the head removal step for the Head Inspection Station.
2. After the establishment's viscera sorting step and before the viscera harvesting step for the Viscera Inspection Station.
3. After the final trim and sorting step and before the carcass wash step for the Carcass Inspection Station.

Inspection locations may be combined if carcass and/or parts (head and viscera) can be inspected at a single location. (Example: combining the viscera with carcass inspection if they can be inspected at one location.). Proposals for less than three inspector locations must be presented to the HIMP Project Manager.

DOCUMENTATION

The forms used for the HIMP Market Hog project are:

- HIMP FORM-7, Postmortem Verification Inspection Activities
- HIMP FORM 8-1 OCP-1 25 Day Results
- HIMP FORM 8-2 OCP-2 25 Day Results
- HIMP FORM 8-3OCP-3 25 Day Results
- HIMP FORM-9 Ante-Mortem Verification Inspection Activities
- HIMP FORM-10 HIMP Verification/Corrective Action Log
- FSIS Form 5400-4 Noncompliance Record (NR)

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FS-1 and FS-3 nonconformance documentation -

- The SI makes the final disposition on carcasses retained by inspection personnel on FS-1 and FS-3 categories and documents the FS-1 and FS-3 nonconformance on a NR as ISP code 03J01.
- If the SI finds additional noncompliance for **this specific slaughter production lot**, the SI will document the findings on separate NR's.
 - All findings must be taken into consideration after the NR is written. The SI also checks the plant's corrective actions. All findings and plant's corrective actions are to be documented on the NR.
- The 03J02 procedure is considered to be complete when inspection personnel have verified the establishment's pre-shipment review.
- The SI will inform the VI to document FS-1 non-conformances on the daily HIMP Form 7
- The SI will document FS-3 non-conformances on the HIMP form 9.

FS-2 nonconformance documentation -

- An FS-2 nonconformance is documented when feces, ingesta or milk are identified during verification activities.(according to the identification guidelines in FSIS Directive 6420.2).*
- The CI at the final carcass inspection station will follow FSIS Directive 6420.2 *Livestock Post-Mortem Inspection Activities-Enforcing the Zero Tolerances for Fecal Material, Ingesta, and Milk* Section II. B. 1 as it pertains to the final rail inspector.*
- The VI, when performing FS-2 verification, will document an FS-2 nonconformance on a NR as ISP code 03J01.
- If the VI finds additional noncompliance **for this specific slaughter production lot**, the VI will document their findings on additional NR's.
- All findings must be taken into consideration by the VI that found the noncompliance or another VI. The VI also checks the plant's corrective actions. All findings and plant's corrective actions are to be documented on the NR.
- The 03J02 procedure is considered to be complete when the VI has verified the establishment's pre-shipment review.
- The FS-2 nonconformance is also to be documented by the VI on HIMP FORM-7.

OCP nonconformance documentation –

The VI or SI will document the OCP nonconformance findings during the shift on Draft HIMP form 7.

- If the establishment exceeds the daily maximum limit (See Table 1) for a specific OCP category, the VI will notify the SI.
- At the end of each shift, the SI will document the number of defects and pass/fail for each OCP category on HIMP FORMS 8- 1 through 8-3.

VERIFICATION PROCEDURES

FSIS conducts verification inspection to assure that plants are meeting the performance standards. Verification inspection occurs in ante-mortem and post-mortem.

ANTE-MORTEM

- Establishment ante-mortem records for the FS-3 category are to be reviewed by the VI or SI.
- The VI or the SI will inspect 100% of live animals at rest that are presented by the establishment for slaughter.
- The SI (or assigns to VI) randomly selects ante-mortem sampling times throughout the shift. Ante-mortem sampling times can be scheduled if the entire kill is available prior to start of shift. Usually live animals continue to be shipped to the establishment throughout the day and it is not possible to schedule the times for random sampling. Therefore, it is left to the discretion of the SI to determine randomness of sampling throughout the shift when live animals are available.
- The VI or SI will inspect 5-10% of the live animals in motion randomly throughout the shift after establishment sorting for slaughter.
- The VI or SI will assess sorting activities and humane handling practices.
- The SI will assess plant activities at the suspect pen.
- The VI will retain as suspect for SI disposition any animal that could result in condemnation.
- FS-3 deficiency determined by the SI will be documented by the SI on a NR and the establishment follows HACCP procedures in 9 CFR 417.3.
- The SI will document or notify the VI to document any FS-3 deficiency on HIMP Form 9.
- Other deficiencies found on ante-mortem sampling by the VI will be reported to establishment and the SI (such as humane handling).
- A NR is to be documented for humane handling violation. The ISP procedure code for violations related to humane handling and slaughter is **04C02**. *

POST-MORTEM

The verification sampling procedures for both food safety and other consumer protection performance standards will be conducted on 24 randomly selected samples for each shift. This procedure can be conducted either off-line or on-line. If conducted on-line, the VI will identify the samples and have the CI's examine each part and carcass, starting with the head inspection station. The VI will follow the samples through the entire process and record all defects found during the CI examination. The VI will record a maximum of one defect in each performance standard category per sample unit (e.g., a sample having bile and a bruise on the carcass would be identified as 1 OCP-3 defect. A sample having arthritis and fecal contamination of the viscera would be identified as 1 OCP-1 and 1 OCP-2).

In addition, the VI or SI will review establishment post-mortem records for FS-1. The SI and/or VI will review other establishment post-mortem records.

1) General

- A sample consists of a carcass with corresponding head and viscera.
- The SI or the VI will notify the on-line CI when to inspect verification samples during the shift.
- The CI, when notified by the VI, will inspect the verification samples of the carcass with corresponding viscera and head per shift and verbally inform the VI of their findings during sampling.
- The 24 unit samples per shift may be taken in subsets.
 - Sample subsets may be randomly taken in one of the following manners:
 - 3 samples 8 times per shift.
 - 4 samples 6 times per shift.
 - 6 samples 4 times per shift.
 - 8 samples 3 times per shift.
- Any OCP defects, which are identified at the inspection stations, should be identified to the establishment but not scored toward plant performance unless it is part of a scheduled or unscheduled sample subset.
- Sample times and sample subsets are to be selected randomly prior to the start of the shift.
- The VI or SI will record findings on DRAFT HIMP Form-7. It is not necessary to record a specific condition within a performance standard category (i.e., localized lung or heart conditions would be recorded as a noncompliance of the OCP-1 performance standard category).
- If the establishment is engaged in product/process action at the time the random sample is to be taken, the VI will suspend random sampling until the establishment has completed its actions.

2. FS1 and FS 2

- Establishment post-mortem records for FS-1 and FS-2 categories are to be reviewed by the VI or SI in accordance with 9 CFR 417.8.
 - The CI, when notified by the VI, will examine the sample subsets for indications of FS-1 and FS-2 defects and verbally relay the information to the VI.
 - 1) FS-2 defects are recorded at the post-mortem rail inspection station.
 - 2) The CI will retain carcasses with potential FS-1 defects for final disposition by the SI. If the VI/SI finds additional non-compliance for this slaughter production lot, the VI/SI will document each additional FS-2 defect findings on separate NR's. *
 - 3) The CI at the Pre-Wash Verification Location Inspection Station will identify potential FS-1 and FS-2 defects. The CI will retain the carcass for final disposition by the SI. The CI will identify FS-2 defects and take the appropriate action consistent with established HACCP procedures. The VI/SI will document the FS-2 defect that was found by the CI on a NR. If the VI/SI finds additional non-compliance for this slaughter production lot, the VI/SI will document each additional FS-2 defect findings on separate NR's. *
- No carcasses are allowed to exhibit FS-2 defects at the post-mortem rail inspection station. The CI will follow instructions for "on-line inspection personnel" in FSIS Directive 6420.2. The CI will have the defect removed either by railing the carcass out or having it trimmed on-line. Notify the SI/VI for possible unscheduled verification sampling. *
- The SI will write a NR for FS-1 noncompliance.
- The VI will write a NR for FS-2 noncompliance observed during verification sampling in accordance with FSIS Directive 6420.2.*

3. OCP

- The CI or VI will retain a carcass for final disposition by the SI when OCP defects are found that could result in condemnation.
- If the VI or SI determines that defects in an OCP category exceed the performance standard as stated in Table 1, the VI or SI will check the establishment's process control records for the same time frame. If the establishment results show a potential or actual loss of control as defined in the establishment's process control plan (PCP), the VI or SI will check the establishment's records to determine whether corrective actions described in the PCP were taken.

TABLE 1: OCP Maximum defects allowed Per Shift

| SAMPLE SIZE | 24 SAMPLES (Head, Viscera, carcass) | UNSCHEDULED 27 SAMPLES | UNSCHEDULED 30 SAMPLES | UNSCHEDULED 33 SAMPLES |
|--------------------|--|-----------------------------------|-----------------------------------|-----------------------------------|
| OCP-1 | 2 | 2 | 2 | 2 |
| OCP-2 | 3 | 3 | 3 | 3 |
| OCP-3 | 7 | 7 | 8 | 9 |

- If the establishment failed to take proper corrective action according to their PCP, the establishment should detail what new corrective and preventive action will be implemented to prevent recurrence. Any samples that exhibit defects in any of the OCP performance standard categories should be pointed out to establishment personnel.

Unscheduled Verification Inspection

When the SI determines that an unscheduled inspection should occur, the SI will notify the VI to conduct the inspection. Each unscheduled verification inspection will be three carcasses with corresponding viscera and head.

- Unscheduled verification sampling done at the direction of the SI will also be recorded on Draft HIMP Form 7.
- Unscheduled verification sampling will count toward the establishment's performance evaluation (See Table 1).
- The SI may call for unscheduled verification inspection because a CI has identified a potential problem.
- The SI may call for unscheduled verification inspection after the establishment has had sufficient opportunity to correct an establishment identified problem. This would confirm that the problem has been corrected.
- The establishment is notified of unscheduled verification inspection.
- The SI and/or VI will notify the establishment of the results of unscheduled verification sampling and establishment record examinations.

EXAMINATION OF PLANT SAMPLING RECORDS FOR OCP'S

- In addition to the 24 OCP samples, VI will review establishment's records for OCP sampling results at least three times per day.
- Examples of plant records evaluation may also include observations of the plant selecting samples and data recording procedures.
- The VI or SI should record the results on the Draft HIMP Form 10.
- The VI will notify the SI of any discrepancies in the record examination.

SI evaluation of OCP 1 through 3 for 25 day performance

- To evaluate whether the establishment maintains process control, the SI will track the performance of OCP 1 through 3 for a 25-day period using Draft HIMP Form 8-1 through 8-3 and Table 1.
- Each OCP will be tracked each shift and referenced to the Table 1 values.
- The SI will record that the plant passed or failed each of the 3 OCP categories on the appropriate HIMP form 8 and notify the plant of their findings.
- For an entire 25-day period, the maximum number of days on which the Table 1 performance standards can be exceeded is given in Table 2.

**TABLE 2: Maximum Days (OCP's)
(Number of Days Above maximum defects
allowed Per 25-Day Period)**

| | |
|--------------|---------------|
| OCP-1 | 2 days |
| OCP-2 | 4 days |
| OCP-3 | 3 days |

- If the plant exceeds the maximum days for any OCP category listed in table 2 for a 25-day period, at any point during the 25 days, the SI will write a NR coded 04C01. The plant should detail what new corrective and preventive actions are implemented to prevent recurrence. The plant will provide this information to the SI.

Note: A 25 day period will end at a full 25 days provided that the Table 2 Maximum Number of Days are not exceeded. If the Table 2 Maximum Number of Days are exceeded before 25 days are completed, e.g. on the 13th day, the period stops then while the plant responds as described above. A new 25-day period will begin when those conditions are satisfied.

Correlation

The SI and/or VI will meet regularly with plant management to conduct correlation activities during the transition period. Regular correlation will aid FSIS and the plant in establishing a common basis for both FS and OCP determinations.

Attachment 1**Model Performance Standards for Market Hogs Plants**

| <u>Performance Standard Categories</u> | <u>Plant Performance Standards</u> |
|---|---|
| FS-1—Condition – Infectious (for example: septicemia/toxemia, pyemia, cysticercus) | Zero |
| FS-2 – Condition – Digestive Content/Milk (for example: fecal material, ingesta, milk) | Zero |
| FS-3 – Ante-mortem Suspect (for example: neurologic conditions, moribund, pyrexia, severe lameness) | Zero |
| OCP-1 – Carcass- Pathology* (for example: arthritis, emaciation,, erysipelas, localized abscess, mastitis, metritis, mycobacteriosis [M Avium], neoplasms, pericarditis, pleuritis, pneumonia, uremia) | 4.1% |
| OCP-2 – Visceral Pathology* (for example: cystic kidneys, enteritis/gastritis, fecal contamination of viscera, nephritis/ pyelonephritis, parasites—other than Cysticercus, peritonitis) | 7.2% |
| OCP-3 – Miscellaneous (for example: anemia, bile, bruise, edema, external mutilation, fractures, icterus, odor, skin lesions, scabs, toenails not removed) | 20.5% |

***Conditions exhibiting a septicemia or toxemia are considered food safety hazards**