

2014/SCSC/WKSP2/021 Session: 9.2

Proficiency Testing and FSIS

Submitted by: United States



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Proficiency Testing (PT) and FSIS

Experience Share for Proficiency Testing Organization APEC FSCF PTIN Proficiency Testing Workshop

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I. FSIS Laboratory System

- Participation in PT from outside sources
- Intralaboratory Check Samples
- II. Accredited Laboratory Program
 - Provides PT for Food Chemistry Components
 - Provides PT for Residues



Why Conduct PT?

- Ensure analytical processes are running smoothly
- Verify that laboratory methods remain fit for purpose
- ISO 17025 requirement to participate in PT when available



I. FSIS Laboratory System

Participation in PT from outside sources:

- CFIA (Canadian Food Inspection Agency)
 - Chloramphenicol
 - Sulfonamides
 - Ractopamine
- AOAC

Food Chemistry Components (moisture, protein, salt, fat)



I. FSIS Laboratory System

Internal PT participation – included with sample sets (batches) as part of routine QC

- Positive control (tissue fortification)
- Negative control (tissue blank)
- Intralaboratory check samples
 - Fortified (or not fortified) "blind" to the analyst
 - Serves as in-house proficiency testing

Can track positive controls and intralaboratory check samples using a control chart



Control Chart Ceftiofur, January – July 2014



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II. Accredited Laboratory Program (ALP)

- Administered by USDA FSIS
- Open to non-federal laboratories within the US
- Voluntary (not mandatory)
- Annual user fee required to participate
- Currently the ALP has 45 laboratories in 24 States



II. Accredited Laboratory Program (ALP)

• Membership includes:

Site audit of laboratory by ALP every two years

-Participation in PT events (six per year)



II. Accredited Laboratory Program (ALP) PT Offered

- Food Chemistry Components
 - Moisture
 - Protein
 - Fat
 - Salt

- Residues
 - Chlorinated
 Hydrocarbons (CHCs)
 - Polychlorinated
 Biphenyls (PCBs)



Food Chemistry Components

- Matrix: Processed meat and poultry products
- The laboratory can follow its own method or can adopt the FSIS method for each analysis
- Proximate analysis (% of each component by weight)



Food Chemistry Components

- Laboratory must analyze 36 different processed products for all 4 components and pass acceptance criteria
- Once accepted, the laboratory can participate in bi-monthly PT on an on-going basis



Residue Chemistry

- Matrix: Animal fat
- The laboratory can follow its own method or can adopt the FSIS method for each analysis
- PCB analytes: Aroclor 1254, Aroclor 1260
- CHC analytes:

Alpha-BHC Chlorpyrifos Dieldrin Endrin Heptachlor epoxide Lindane Methoxychlor Mirex p,p'-DDT p,p'-DDE p,p'-DDD



Residue Chemistry

- Laboratory must analyze 14 different animal fat samples and correctly identify and quantify residues
- Once accepted, the laboratory can participate in bi-monthly PT on an on-going basis



Data Analysis

- Accepted value for each PT event is based on average of responses from all participants in the event
- Uses CUSUM-based statistics

- Advantage: can track multiple factors over time

- Disadvantage: difficult to understand formulae

• Also provide z-score (industry standard)



ALP Participants





ALP References

• FSIS website:

http://www.fsis.usda.gov/wps/portal/fsis/topics/science/laboratories-and-procedures/accredited-laboratories/accredited-laboratories

 ALP Laboratory Guide – can be requested by email: <u>ALP@fsis.usda.gov</u>



Questions?