AAFCO Proficiency Testing Program

Proficiency Testing/Quality Reference Material Failure Investigation

Common Questions

1. **Proficiency Testing Results**
   a. My Z-Score Failed
      i. My Z-Score failed the Method Proficiency but passed Analyte Proficiency
      ii. My Z-Score failed the Analyte Proficiency but passed the Method Proficiency
      iii. My Z-Score failed both reports
   b. My data was rejected
      i. Duplicate were too far apart
      ii. Result rejected as Outlier
2. **Quality Reference Material (QRM)**
   a. Results do not fall within the Robust Standard Deviation

What to investigate

1) **Clerical**
   a) Was there a transcription error? Was the value entered incorrectly? e.g. 2.3 ppm instead of 3.2 ppm.
   b) Was the incorrect method/instrument code entered?
   c) Were the wrong units entered, e.g. ppb instead of ppm? e.g. 0.0054 instead of 5.4.
   d) Was the decimal place shifted? e.g. 9.8 instead of 0.98.
   e) Entered results online but not submitted by participant?
   f) Forgot to submit results by due date?
2) **Calculations**
   a) Were the calculations checked and verified prior to entering data?
   b) Was the test solution diluted? Was the dilution factor applied in the calculation?
   c) Was the test portion weight transcribed into the calculation correctly?
3) **Method/Procedure**
   a) Was the correct method used for the matrix?
   b) Was the method being followed as written?
   c) If the method is an AOAC/ISO method, is it being followed exactly or has the method been modified? If the method was modified, was it verified and or validated?
   d) Are the correct chemicals/solvents being used?
   e) Were chemicals (solvents etc.) used in the method recycled/reused?
   f) Were reagents and solutions prepared correctly?

g) Were the standards valid e.g. not expired, and or a second source used?

h) Calibration stable, persistent bias, within measuring range, instrument maintenance/ problems, QC and calibration review?

i) Was equipment calibrated and did it pass calibration?

j) Has there been changes to equipment? Has new equipment been verified/validated?

k) Have there been changes to personnel? Have personnel been trained and approved to run the test?

l) Has a method been modified to use different test portions and or reagents? If so, has the modification(s) been validated?

m) If the test portion mass has been reduced, is it still representative of the analyte/concentration? For example, the original test portion was 1.0 gram and it has been reduced to a 0.10 gram. Did this reduction impact precision, accuracy and or quantification?

4) Test Item Handling

a) Did you report results on an "as received" moisture basis?

b) Did you grind the test item on receipt?

c) Did you dry the test item upon receipt?

5) PT / QRM Material

a) Was the material received in good condition?

b) Was the bag or box damaged?

c) Is the PT/QRM item stored in the original container or transferred to a secondary container?

d) What temperature is the item stored?

i) Is storage appropriate for the analyte of interest?

e) Are humidity levels a potential problem?

f) Is the QRM over 2 years old?

g) Have any trends been observed with time? Are trends high or low on control charts?

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