



Food and Agriculture  
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Centre for Environment  
Fisheries & Aquaculture  
Science

*World Class Science for the Marine and Freshwater Environment*

# Guidance note

## *Troubleshooting guide for problematic results in E. coli and Salmonella Proficiency testing*

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### History of Procedure

Issue	Date	Section	Changes
1	01.05.20	All	First issue



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## 1 Introduction

Performance assessments in proficiency testing (PT) can be affected by both failures in individual assessments (i.e. analysis errors) or failure to participate in distributions with sufficient frequency. For PT issues related to analysis error please see points 1 – 7 of this document.

Further advice and assistance can be provided by the FAORC on request.

## 2 Methods

Ensure that the method used is appropriate for the examination of the sample.

- Ensure that any dilutions have been calculated correctly.
- Ensure that the dilutions analysed are as specified on the report form.
- Ensure that the MPN tables (if used) are interpreted correctly.

### 2.1 Interpretation of MPN tables

Where three dilutions have been tested for a sample, record the number of TBGA/TBX positives for each dilution to give a three figure tube combination number. Use the MPN tables included in ISO 7218 and the FAORC generic *E. coli* protocol. Only category 1 and 2 tube combinations are included in the tables and should be reported.

Where more than three dilutions have been tested for a sample, use the Excel spreadsheet MPN calculator (<http://standards.iso.org/iso/7218/>) to determine the MPN from all the dilutions tested. Combinations that do not appear in the tables or obtained from the Excel calculator as category 3 are not acceptable and should not be used.

If the tube combination result is an unacceptable combination, the result is reported as 'void'.

## 3 Culture media

Check the quality control data of the media used to ensure that they are within the required specifications and are performing adequately.

## 4 Equipment

Check that the equipment used for the procedures (incubators, refrigerators, measuring instruments) are calibrated and are performing adequately.

## 5 Staff training

Check that all staff performing the tests are fully trained and are familiar with all the procedural steps.

## 6 Clerical procedures

Check that the sample labeling, laboratory numbering and clerical procedures are adequate and that there are procedures in place for ensuring test results are reported accurately and on time.

## 7 Accreditation

Check that the quality procedures are documented and adhered to at all times.

## 8 Internal quality controls (IQC)

Ensure that adequate controls are in place and follow-up procedures are carried out to deal with Internal Quality Control (IQC) failures.