



## Troubleshooting advice for performance issues in proficiency testing (PT)

- 1. **Methods** Ensure that the method used is appropriate for the examination of the sample.
  - a. Ensure that any dilutions have been calculated correctly.
  - b. Ensure that all dilutions as tested and reported are used to calculate the result (i.e. do not use a 3 dilution table or calculator if 4 dilutions are tested).
  - c. Ensure that MPN tables (if used) are interpreted correctly.

## Interpretation of MPN tables

Record the number of TBX positives at each dilution to give a three or four figure tube combination number. Use the MPN tables included in ISO 7218 and the NRL generic *E. coli* protocol. Only results for category 1 or 2 combinations are included in the tables and should be reported. Tube combinations that do not appear in the tables are category 3 and results should be reported as "void".

## Use of MPN calculators

Use the NRL excel spreadsheet MPN calculators for 3 or 4 dilutions as appropriate. Where more than four dilutions have been tested for a sample, use the Excel spreadsheet MPN calculator (<u>http://standards.iso.org/iso/7218/</u>) to determine the MPN from all the dilutions tested (note that this version of the calculator produces a result in MPN/g – multiply this figure by 100 to obtain a result in MPN/100g). If the tube combination produces a category 3 result (the result row will be highlighted in blue), the result is reported as "void".

- 2. **Culture media** Check the quality control data for all media used to ensure that they are within specifications and performing adequately.
- 3. **Equipment** Check that the equipment used for the procedures (incubators, refrigerators, measuring instruments etc.) are calibrated and performing adequately.
- 4. **Staff training** Check that the staff performing the tests are fully trained and familiar with all the procedural steps.
- 5. **Clerical procedures** Check that the sample labeling, laboratory numbering and clerical procedures are adequate in addition to the procedures for ensuring test results are reported accurately and on time.
- 6. Accreditation- Check that quality procedures are documented and adhered to at all times.
- 7. **Internal quality assessment (IQA)** Ensure adequate controls are in place and follow-up procedures are in place to deal with IQA failures.

Further advice can be obtained from the NRL on request.