

Evaluating the competence of test laboratories by Participating in Inter-comparison Tests and Statistical Analysis of Test Results*

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Abstract

Participation in inter-laboratory comparison programs is an important means of laboratory quality control and assessing laboratory performance, and these programs can be used by customers or regulatory bodies for the selection of qualified laboratories.

This research describes how to use inter-comparison tests and how to statistically analyse the test results.

This research has a practical study of assessing laboratories performance in laboratories of the Syrian textile firms by distributing samples simultaneously to participating laboratories for testing. After collecting test results, the researcher used scientific methods to handle data to identify the weak points in laboratories performance and provide them the Feedback and technical advice to Assistance the lab to defining the measurement problems and evaluating of test methods and instrumentation , and could introduce some suggestions and recommendations to overcome.

Key Words: Laboratory performance, Quality Control, Inter-laboratory comparison programs.

* For the paper in Arabic see pages (473-484).

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References:

- 1- Revoil Gilles; ISO17025: Quality Management, Requirements, Fundamentals-Project by European Union,2010
- 2- ISO 5725-1,1994- Accuracy (trueness and precision) of measurement methods and results — Part 1 General principles and definitions.1st.ed, ISO,17P.
- 3- ISO 5725-2,1994, Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method. 1st.ed, ISO,42P.
- 4- ISO/IEC 17025, 2005- General requirements for the competence of testing and calibration laboratories. 2nd.ed., ISO,28P.
- 5- ISO/IEC Guide 43-1,1997 - Proficiency testing by inter-laboratory comparisons - Part 1: Development and operation of proficiency testing schemes.2nd.ed, ISO.
- 6- ISO 13528,2005- Statistical Methods for the Use in Proficiency Testing by Inter laboratory Comparisons. 1st.ed, ISO,66P.
- 7- LUPING T.,2000- Methodology of Inter-comparison Tests and Statistical Analysis of Test Results. Nordtest project No. 1483-99, Swedish,39P.