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## What is Proficiency Testing?

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## Choosing a Proficiency Testing Scheme

1. Relevance to the Testing in your Laboratory:
  - **Sample Matrices** - are the sample types similar to the samples tested in your laboratory? To assess this, you will need to know the range of key properties (e.g. composition) of the samples provided to participants.
  - **Test Methods** - is the method used in your lab offered in the program, and how many of the other participants are using methods comparable with those used in your laboratory?
  - **Sample handling, testing, and reporting** protocols - are these clear and easy to follow, do they represent good practice, and are the requirements compatible with existing procedures in your lab?
2. **Quality of data** - considering reports from previous rounds, is the spread of data consistent with your expectations for key tests?
3. **Performance of other labs** - what is known about the other participating laboratories, and how many of the participating labs are accredited?
4. **Statistical Analysis and Performance Assessment** - how is data from different methods grouped for analysis, and is this likely to allow valid comparison? Is the performance assessment made according to internationally recognized procedures?
5. Reporting - Is the information easy for both lab staff and third parties to interpret? Is reporting timely?

## How Proficiency Testing Works

### The key steps of a Proficiency Testing round are:

- Homogeneous samples are distributed to participating laboratories
- Test results are provided by labs back to Global Proficiency. The data is statistically processed to determine the assigned value (usually a median, mean, or reference result) according to the statistical protocol for each program

- The performance of each laboratory for each sample and test is assessed by measures of difference from the assigned value. Bias is measured by monitoring rolling averages of performance over time
- Confidential reports are provided to each laboratory

This cycle is then repeated (at an established frequency) so that consistency as well as precision and accuracy can be assessed over time.

Multiple technicians can submit results as part of training, development and on-going competence monitoring.

## Why Participate in a Proficiency Testing...?

### Benefits of participation in Global Proficiency's Proficiency Testing Schemes include:

- Confidence in Results
  - Measurement of performance in comparison with other laboratories provides confidence that:
    - Test methods are being followed
    - Test results are accurate
    - Technician training has been appropriate
    - Systematic errors are identified before the cost of correction escalates
    - Results issued from another lab are unlikely to be significantly different
- Credibility. Performance can be demonstrated to:
  - Customers
  - Regulatory Authorities
  - Accreditation Agencies
- Compliance
  - Laboratory Standards (e.g. ISO 17025)
- Optimising Yields
  - Knowledge of both the precision and bias of a process allows production processes to be driven to optimum limits. Even low levels of bias in simple tests (e.g. moisture) can add up to significant volumes of lost yield (and value) over a prolonged period

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### CONTACT US TO DISCUSS YOUR REQUIREMENTS

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or visit our website at

<http://www.global-proficiency.com/>

