



More information may be found on <http://www.eac-quality.net>.  
Participation is open to all interested laboratories in and outside EAC.

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## East African Community (EAC) Proficiency Testing Scheme



*Information brochure*

## What is proficiency testing?

Proficiency Testing is evaluation of participant performance against pre-established criteria by means of interlaboratory comparisons (ISO/IEC 17043:2010).

## Why proficiency testing?

The demand for independent proof of competence from the regulatory bodies and customers means that Proficiency Testing (PT) is relevant to all testing laboratories in all countries. Hence, it is a requirement of accreditation to ISO/IEC 17025 that the laboratories take part in a proficiency testing scheme, if a suitable scheme exists. Thus, together with the use of validated methods, PT is an essential element of laboratory quality assurance.

Regular participation in a proficiency testing scheme provides independent verification of the analytical competence of a laboratory and shows a commitment to the maintenance and improvement of its performance. It demonstrates to the public, customers, accreditation bodies, regulators and management that analytical procedures are under control, and gives analysts confidence that the service which they render withstands scrutiny.

The cost of participation in a PT scheme gives good value for money compared with the consequences of producing inaccurate results which might put the public health at risk, damages a company's reputation, loss of profit, or contravene national regulations.

## How does a proficiency testing scheme operate?

Proficiency Testing (PT) schemes operate by providing participating laboratories with similar samples for concurrent testing. The laboratory analyses the samples, preferably as part of its normal routine, and reports the results to the PT provider. The laboratory is then provided with the report showing how closely their results agree with the accepted values, and where necessary, can then take appropriate actions to improve performance.

All participating laboratories are **coded for confidentiality** purposes.

## Why EAC proficiency testing scheme?

The primary aim of the EAC Proficiency Testing Scheme is to provide a quality assurance tool to laboratories in the region and to compare performance and take remedial

action where necessary to facilitate improvement. Participation in this PT should therefore lead to a higher standard of performance for these types of measurements. This scheme focuses on improving laboratory-testing capabilities with an aim of producing accurate and reliable results that can be respected and trusted within and beyond the borders of the EAC region. This will help the region to become competitive in trade.

## Scheme design

The present rounds comprise of samples of edible salt, wheat and maize flour, edible vegetable oil, sugar, honey, black tea, animal feed, gin, fertilizers, UHT Milk, Skim milk powder (Microbiological), Meat and Fish chunks (Microbiological) and Black Tea (Microbiological) that are provided by the EAC Bureaus of Standards.

### Edible common salt

Analytes: Cl<sup>-</sup> as NaCl, Ca, Mg, iodate as I, SO<sub>4</sub><sup>2-</sup>, moisture, matter insoluble in water.

Provider: Tanzania Bureau of Standards (TBS)

### Wheat flour and maize flour

Analytes: Moisture, crude protein, total ash, acidity of extracted fat, crude fat, crude fibre, Cu, Zn, Fe, aflatoxins, Vitamin A and Gluten.

Provider: Kenya Bureau of Standards (KEBS)

### Edible vegetable oil

Analytes: Peroxide value, acid value, moisture and volatiles, iodine value, refractive Index, relative density, Cu, Ni.

Provider: Uganda National Bureau of Standards (UNBS)

### Sugar

Analytes: Polarization, conductivity ash, moisture, colour, sulphur dioxide, water insoluble matter.

Provider: Rwanda Standards Board (RSB)

### Honey

Analytes: Moisture, hydroxy methyl furfural(HMF), ash content, | water insoluble matter, diastase activity, acidity, relative density, lead, zinc.

Provider: Tanzania Bureau of Standards (TBS)

### Black tea



Analytes: Moisture, water extracts, total ash, water insoluble ash, alkalinity of water soluble ash, acid insoluble ash, crude fibre .

Provider: Burundi Bureau of Standards (BBN)

### Animal feed

Analytes: Moisture, crude protein, total ash, acid insoluble ash, crude fat, crude fibre, calcium, phosphorous .

Provider: Kenya Bureau of Standards (KEBS)

### Fertilizer

Analytes: Moisture, ammoniacal nitrogen, total nitrogen, total phosphorous, water soluble phosphates .

Provider: Tanzania Bureau of Standards (TBS)

### Gin

Analytes: Alcohol content, total solids, total acids, volatile acids, esters, aldehydes and methanol .

Provider: Uganda National Bureau of Standards (UNBS)

### Milk UHT

Milk fat, density at 20°C, protein, total solids, titratable acidity, freezing point depression, pH variation on 5 days incubation; calcium, lactose.

Provider: Kenya Bureau of Standards (KEBS)

### Skim milk powder (Microbiological)

Total Viable Count, Coliforms, Escherichia coli, Coagulase positive Staphylococci, Listeria species, Listeria monocytogenes, Salmonella species.

Provider: Kenya Bureau of Standards (KEBS)

### Meat and Fish chunks (Microbiological)

Total Viable Count, Coliforms, Escherichia coli, Coagulase positive Staphylococci, Listeria species, Listeria monocytogenes, Salmonella species, Vibrio spp, Vibrio parahaemolyticus.

Provider: Kenya Bureau of Standards (KEBS)

### Black Tea (Microbiological)

Total Viable Count, Coliforms, Escherichia coli, Coagulase positive Staphylococci, Yeast, Moulds, Yeast and Moulds, Salmonella species.

Provider: Kenya Bureau of Standards (KEBS)

### Fruit Juice

pH, brix, acidity, vitamin C, Cu, Ar, Pb

Provider: Tanzania Bureau of Standards

## Reporting and assessment

The test results are transformed into performance statistics to aid interpretation and allow comparison. These will involve statistical analysis of results, using robust statistical methods according to ISO 13528. The z-score for each result is tabulated and then summarize for each laboratory