



**MINISTRY OF HEALTH  
DEPARTMENT OF LABORATORY SERVICES  
NATIONAL PUBLIC HEALTH LABORATORY**

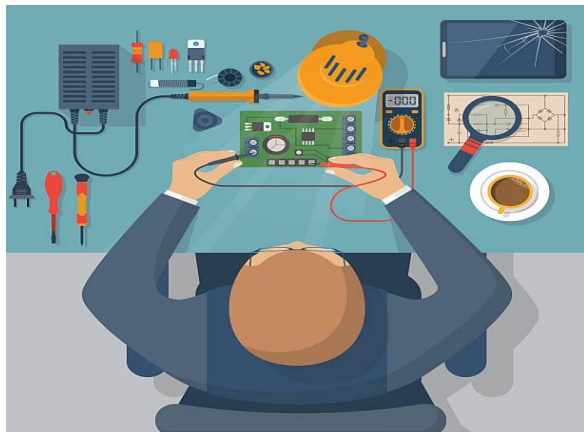
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**CLIENT HANDBOOK**

**NATIONAL PUBLIC HEALTH LABORATORIES  
ISO 17025:2017 accredited testing and calibration laboratories client handbook**



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Physical location of both laboratories is at: Kenyatta National Hospital grounds off Ngong road, NPHLS/NASCOP complex in Nairobi, Kenya.

**Operating Hours**

The facilities open from **8.00 AM** to **5.00 PM** from Monday to Friday except on public holidays.



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### Foreword

Welcome to Food Safety and Nutrition Reference Laboratory and Centre of Excellence for calibration

### Dear Valued client

Thank you for selecting Food Safety and Nutrition Reference Laboratory (FSNRL) and Centre of Excellence for equipment calibration (COE) as a provider for your food testing and equipment calibration, certification and training.

**Food Safety and Nutrition Reference Laboratory** is an ISO 17025:2017 accredited laboratory that offers a variety of standard and specialized testing services. We provide high-quality service, and our staff strives to exceed your expectations. We are dedicated to excellence in science and compliance to offer a better choice for food testing laboratory and calibration services. The laboratory's qualified technical personnel are available to respond to your technical needs.

**The NPHL Center of Excellence (COE)** for Equipment Calibration, Certification and Training is an ISO 17025:2017 accredited laboratory. It specializes in the calibration of auxiliary laboratory equipment, certification of bio-safety cabinets and training on equipment maintenance, calibration and certification.

As a laboratory, COE offers sustainable solutions in laboratory equipment management which is key in ensuring quality laboratory results and offers traceability of measures required of ISO accredited institutions.

The services offered by COE and FSNRL are summarized in this handbook.

We look forward to working with you.

Sincerely,

Head, FSNRL & COE.



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### Scope

This handbook describes the food testing services offered by FSNRL. It applies to the clients, staff, students, visitors, institutions and stakeholders in general.

This handbook describes the calibration and training support services that COE offers. The information in the handbook applies to the staff, students, visitors, institutions, Non-Governmental Organizations and collaborators in general.

### 1.0 Introduction

The Food Safety and Nutrition Reference Laboratory comprises several sections that perform tests on foods and any other relevant sample aimed at preventing and controlling diseases that arise from consumption of foods which are contaminated or of unsatisfactory nutritional value. The following is our test menu.

SAMPLE NAME	PARAMETER	COST PER PARAMETER	COST PER SAMPLE (KSHS)	TAT (WORKING DAYS) PER PARAMETER	TAT(WORKING DAYS) PER SAMPLE
Alcoholic beverages	Ethanol	1000	5000	3	10
	Methanol	1000		3	
	Volatile acidity	500		3	
	Total acidity	500		3	
	Copper	700		3	
	Lead	700		3	
	pH	500		2	
	Soluble solids	500		3	
	Specific gravity	500		2	
	Total solid	500		2	
Pasta	Iron	700	4000	3	10
	Total ash	1000		3	
	Acid insoluble ash	1000		3	
	Cooking test: Total solids in gruel	500		2	
	Free fatty acids as oleic acid	700		3	
	Moisture content	700		2	
Milk	Density	500	4000	2	10
	Fats	700		3	
	Non- fat solids	500		3	
	Hydrogen Peroxide	500		2	
	Starch	500		2	
	Sugar	500		2	
	Formalin	500		3	
	Titration Acidity as	500		3	



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SAMPLE NAME	PARAMETER	COST PER PARAMETER	COST PER SAMPLE (KSHS)	TAT (WORKING DAYS) PER PARAMETER	TAT(WORKING DAYS) PER SAMPLE	
	lactic acid					
Salt	Water insoluble matter	700	6500	2	7	
	Chloride content	700		3		
	Acid-insoluble matter	700		3		
	Calcium (as Ca)	700		3		
	Magnesium(as Mg)	700		3		
	Sulphate (as SO4)	1000		3		
	Lead (as Pb)	700		3		
	Potassium iodate	500		2		
	Copper	700		2		
	Moisture	700		2		
Edible fats and oils	Vitamin A	1500	3000	2	7	
	Acid Value	700		2		
	Saponification value	700		3		
	Relative density	500		2		
Maize and Wheat Flour	Moisture content	700	8000	2	10	
	Aflatoxin content	3500		3		
	Iron	700		3		
	Zinc	700		3		
	Total Ash	1000		3		
	Acid insoluble ash	1000		3		
	Fat acidity	1000		3		
Cereals, pulses and nuts	Aflatoxin content	3500	6000	3	10	
	Moisture Content	700		3		
	Physical Examination					
	Broken Kennels	500		3		
	Rotten	500		3		
	Pest damaged	500		3		
	Immature and shriveled	500		3		
	Foreign matter	500		3		
	Filth	500		3		
	Inorganic matter	500		3		
	Discolored grain	500		3		
	Total defective	500		3		
Aflatoxin content	3500	3				
Peanut butter	Acid value	700		3	10	
	Total ash	1000		3		
	Fat (on dry weight basis)	700		3		



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SAMPLE NAME	PARAMETER	COST PER PARAMETER	COST PER SAMPLE (KSHS)	TAT (WORKING DAYS) PER PARAMETER	TAT(WORKING DAYS) PER SAMPLE
Tea leaves and coffee	Moisture content	700	7500	2	10
	Aflatoxin content	3500		3	
	Water soluble ash	1000		3	
	Water insoluble ash	1000		3	
	Caffeine	1500		3	
	Water soluble matter	500		3	
	Total ash	1000		3	
	Acid insoluble ash	1000		3	
Biscuits	Moisture Content	700	2500	2	7
	Acid insoluble ash	1000		3	
	Acidity	500		3	
	Fat acidity	1000		3	
Snacks	Fat	700	2500	3	7
	Crude fibre	500		3	
	Free fatty acids	500		3	
	Acid insoluble ash	1000		3	
	Moisture content	700		3	
Honey	Moisture content	700	5500	2	10
	Total Ash	1000		3	
	Acidity	500		3	
	Relative density	500		2	
	Lead	700		3	
	Copper	700		3	
	Zinc	700		3	
	Invert sugar	700		3	
Sugar	Polarisation	500	3000	2	10
	Moisture content	700		2	
	Colour	500		2	
	Vitamin A	1500		3	
	Water insoluble matter	500		3	
	Lead	700		3	
	Copper	700		3	
Bread	Moisture content	700	2000	2	7
	pH of aqueous extract	500		2	
	Acid insoluble ash	1000		3	
	Crude fibre	700		3	



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SAMPLE	PARAMETER	COST PER PARAMETER	COST PER SAMPLE	TAT PER PARAMETER	TAT PER SAMPLE
Meat	Sodium metabisulfite (Quantitative)	2000	2500	3	10
	Sodium metabisulfite (Qualitative)	1000		3	
	Formalin	1000		3	
Non alcoholic beverages	pH	500	7000	2	10
	Moisture	700		2	
	Lead (Pb)	700		3	
	Copper	700		3	
	Zinc	700		3	
	Iron	700		3	
	Benzoic acid	2000		3	
	Sorbic acid	2000		3	
Water	Copper	700	3500	3	10
	Lead	700		3	
	Zinc	700		3	
	Taste	700		3	
	PH	500		3	
	Odour	500		3	
	Total dissolved solids	500		3	
	Iron	700		3	
	Sodium	700		3	
	Magnesium	700		3	
	Calcium	700		3	
	Sulphates	700		3	
	Chromium	700		3	
	Nitrites	700		3	
	Nitrates	700		3	
	Sulphites	700		3	
Turbidity	700	3			
Water	Total Organic Carbon test	1000		3	



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SAMPLE	PARAMETER	COST PER PARAMETER	COST PER SAMPLE	TAT PER PARAMETER	TAT PER SAMPLE
Breakfast Cereals	Moisture	700	4500	2	10
	Total ash	1000		3	
	Acid insoluble ash	1000		3	
	Fat	700		3	
	Lead	700		3	
	Copper	700		3	
	Crude fibre	700		3	
Tomato Products	Natural tomato soluble solids	700	3000	3	10
	Sodium chloride	700		3	
	pH	500		2	
	Minimum Fill	500		2	
	Lead	700		3	
	Specific gravity	500		3	
Cocoa powder	Moisture content	700	3000	2	10
	Total Ash	1000		3	
	pH	500		2	
	Crude Fibre	700		3	
	Lead	700		3	
Cakes	Moisture	700	4500	2	10
	Acid insoluble ash	1000		3	
	Acidity of extracted fat	1000		3	
	Fruit content	1000		3	
	Lead	700		2	
	Copper	700		2	





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**NPHL EQUIPMENT CALIBRATION SERVICES**

NPHL COE is an ISO/IEC 17025:2017 accredited laboratory on 5 measurement parameters. (volume, mass, time, speed and temperature)

As a calibration provider, NPHL COE does not operate equipment or conduct activities that result in the generation of a physical product. The services provided by NPHL COE are all associated with some aspect of quality management and are intended to augment the client's internal quality efforts. Activities conclude with the delivery of services that have been verified to meet internal performance standards, regulatory and customer requirements.

**Test menu/ calibration profile for NPHL COE**

<b>Parameter</b>	<b>Equipment</b>	<b>Turn-Around Time</b>	<b>Cost in Ksh</b>
Small volume	Pipette	10 days	1000
	Multichannel pipette	14 days	4000
Time	Timers/Stop Watches	10 days	1000
Temperature Thermometers	LIG Dial Gauge Digital Thermometer	10 days	1500
Mass	Analytical balances, top pan balances	On site calibration	4000
Rotation speed	Centrifuges Rotators Roller Mixers	On site calibration	4000
Temperature Conditioned Chambers	Refrigerators Freezers Incubators Hot air ovens Water baths	On site calibration	4000
	Autoclaves	On site calibration	6000



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Airflow measurements	Biosafety cabinets Clean benches Safety hoods	On site certification	
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## 2.0 Quality Management System

This manual has been established to ensure compliance and conformance to ISO/IEC 17025:2017.

FSNRL and COE embrace and implement a quality management system. Both Laboratories participate in external quality assurance programs.

## 3.0 Mission

To provide efficient, accessible, responsive and quality testing services that protects and promotes the health of the nation.

To provide quality calibration services that are cost effective and traceable to international standards and requirements.

To provide career growth opportunities for our valued employees through aggressive training programs.

## 4.0 Vision

To be a leading center of excellence in provision of food testing services.

To be a leading center of excellence in equipment management and calibration.

## 5.0 FSNRL and COE Core values

- **Teamwork** - Uphold teamwork in partnership with stakeholders including private public partnership both in planning and implementation of equipment management strategies.
- **Excellence** - Strive for excellence through training and mentorship programs.
- **Professionalism** - Maintain strictly high moral standards in professionalism and loyalty to its mission while discharging our mandate in a completely accountable and transparent environment.

## 6.0 Test requests

Samples from public health officers must be accompanied by a duly filled **MED 240** sampling form. Clients other than PHOs are required to fill the FSNRL sample analysis request form when submitting their samples.



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### 7.0 Advisory Services

The laboratory will advise on the choices of the tests it will offer through the specific contents of this handbook, through brochures, emails and verbally.

### 8.0 Client responsibility

8.1 Safety precautions should be taken when handling all samples especially aflatoxin samples. Avoid physical contact or inhalation of with samples suspected to be contaminated with aflatoxin. Use gloves and masks while handling the samples.

8.2 Take precautions to protect the lot being sampled, the samples, the sampling instrument and the container for samples from extraneous contamination.

8.3 For liquid samples, the containers shall be of such size that sufficient head space to allow for expansion of the liquid is left after pouring in the samples.

### 9.0 Sample collection

The sample should preferably be in the original manufacturer's container and should have the manufacturer's seal. Some sample collection criteria are listed in the table below:

Type of Sample	Type of packaging	Minimum amount required for testing	Transport conditions (room temperature cool box)
Alcohol	Glass bottle	250ml	Room temperature
Non alcoholic beverages	Glass/plastic bottle	250ml	Room temperature
Milk and milk products	Air tight container	500ml	Fresh milk – cooler box Ultra heat treated milk – room temperature
Edible salt (household survey)	Air tight container	50grams	Room temperature
Edible salt (Market survey)	Air tight container	500 grams	Room temperature
Cereals, pulses, maize and wheat flour	Dry khaki paper	1 kilogram	Room temperature
Peanut butter	Clean dry air tight container	250 grams	Room temperature
Water	Glass/plastic bottle	1 liter	Room temperature

### 10.0 Sample rejection criteria

10.1 The following criteria are used for rejection of samples;

10.2 Where quantity of sample is insufficient for analysis,

10.3 Where the sample and the **MED 240** sampling form (applicable to public health officers only) are inconsistent and there is no clarification.

10.4 Where the sample is not within the scope of FSNRL.



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10.5 Where the integrity of sample is affected. For example, damaged/broken/inappropriate packaging.

### 11.0 Sample Requisition

The requisition should contain as much information to help the analyst testing the samples and should include at least the following information:

1. The sample name
2. Sample reference number (Sample unique identifier)
3. Address
4. Client organization
5. County and Sub county
6. Date and time of sample collection
7. Type of package
8. Quantity
9. Requesting client
10. Reason for sampling
11. Test requested

### 12.0 NPHL COE request for calibration services.

The following guidelines should be followed when requesting NPHL COE for equipment calibration services:

- The request for calibration form or equipment tracking log can be downloaded from the COE website :<http://coe.nphl.go.ke/> under the topic “request for calibration services”.
- All required documentation and materials for packaging assembled prior to the procedure.
- The equipment tracking log / request for calibration form should contain:
  - Facility name
  - Equipment type (for pipettes indicate volume).
  - Equipment manufacturer and model.
  - Equipment serial number/ inventory number
  - Facility Laboratory manager name and contacts (number and email address).
  - Equipment calibration range

### 13.0 COE Facility Enrollment to calibration system

13.1 Before any client or site requests for calibration of laboratory equipment, the client will be provided with guidelines on the requirements for calibration of the stated equipment i.e. how to fill in request forms, how to follow calibration schedules, decontamination of calibration items, among others by the designated NPHL-COE personnel.



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#### **14.0 Calibration frequency**

14.1 All equipment shall be calibrated yearly or as per client's request.

#### **15.0 Transport and Delivery of calibration items.**

- 15.1 All calibration items delivered to the NPHL-COE shall be packaged in such a way as to prevent damage and loss during transportation. All equipment sent to NPHL-COE for calibration shall be delivered well packaged and labeled with the Facility and code of the hub where applicable.
- 15.2 All equipment sent to NPHL-COE for calibration shall be delivered with request forms and tracking logs to minimize losses and misplacements.
- 15.3 After calibration at the NPHL-COE, calibration items shall be dispatched and delivered to the respective Facility as per the client's recommendation.
- 15.4 The calibrated items shall be packaged appropriately to prevent damage.
- 15.5 To monitor effectiveness of delivery of calibrated equipment, tracking log forms shall be accompanied with them.

These shall be signed at the facilities to confirm receipt of the items upon delivery.

#### **16.0 COE Rejection Criteria**

- 16.1. Damaged equipment. This is applicable for both at the COE and field equipment
- 16.2 Missing information on request forms for items sent to NPHL-COE
- 16.3. Nonfunctional equipment.
- 16.4 Missing accessories for the equipment eg batteries or sensor probes

#### **17.0 FSNRL Resolution of Complaints and Feedback**

- 17.1 FSNRL welcomes all complaints that relate to all its laboratory activities.
- 17.2 The laboratory manages the clients' complaints and resolves them appropriately.
- 17.3 The laboratory has a customer satisfaction survey form and a complaint register at the reception of the laboratory. The customer survey form is also sent electronically via email.
- 17.4 The laboratory evaluates and resolves the complaints promptly.
- 17.5 The feedback to the clients is done through phone calls, email and physical meetings.
- 17.6 The customer is requested to write their contacts on the complaints register at the reception.



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17.7 The manager discusses the problem with the client to arrive at equitable resolutions.

17.8 The laboratory effectively monitors complaints to prevent the reoccurrence of the same.

### **18.0 COE Complaints, Queries and Clarifications**

18.1 Clients are advised to write an email to the COE from Monday to Friday between, 8am-5pm to log in the queries and complaints. For any clarification, the same communication channels have to be used. Before any query is made, the client shall provide the request form batch number or equipment serial numbers for any equipment worked on by the NPHL-COE whether in the laboratory or for field calibrations.

18.2 Alternatively, the customer survey form has a comments box thus it can be utilized for queries and clarifications.

18.3 Complaints and feedback can also be given via NPHL-COE website [coe.nphls.go.ke](http://coe.nphls.go.ke) or COE staff emails.

18.4 All complaints, queries and clarifications regarding the calibrated equipment shall be raised not more than 7days from the date the equipment is received at the facility.

### **19.0 Protection of client information**

The FSNRL/COE ensures that confidentiality and impartiality of all the services it offers to it clients.