

	ACCREDITATION DOCUMENT	F-06/02 Issue Date: 18/08/2020 Rev. No: 09 LAB 019
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Accreditation No: LAB. 019

Awarded to

**Pakistan Council of Scientific & Industrial Research (PCSIR)
Laboratories Complex, Jamrud Road
Peshawar-Pakistan.**

**Chemical Testing Laboratory (Water, Fats/Oil, Honey and Herbal), Microbiology
Testing Laboratory & Calibration Laboratory.**

The scope of accreditation is in accordance with the standard specifications outlined in the following page(s) of this document. The accredited scope shall be visible and legible in areas such as customer service, sample-receiving section etc and shall not mislead its users.

The accreditation was first time granted on **27.11.2014** by Pakistan National Accreditation Council.

The laboratory complies with the requirements of **ISO/IEC 17025:2017**.

The accreditation requires regular surveillance, and is valid until **26.11.2026**

The decision of accreditation made by Pakistan National Accreditation Council implies that the organization has been found to fulfill the requirements for accreditation within the scope.

The organization however, itself is responsible for the results of performed measurements/tests.

PAKISTAN NATIONAL ACCREDITATION COUNCIL

07-06-2024
Date

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Director General



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TESTING LABORATORY: -

*Accreditation Scope of **Chemical Testing Laboratory (water, Fats/Oil, Honey and Herbal)**, of
 PCSIR Laboratories Complex Peshawar*

With in Laboratory Premises

Materials/ Products Tested	Testing field (e.g. Environmental Testing or Mechanical Testing) Testing Field	Types of test/ Properties Measured	Reference to Standardized Method (e.g. ISO 14577-1:2003)/ Internal Method Reference
Water	Chemical Testing Laboratory Water, (FTC)	1. pH	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 24 th Edition, 2023, Method No. 4500- H ⁺ . B
		2. Sodium (Na)	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 24 th Edition, 2023, Method No. 3500 – Na.
		3. Potassium (K)	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 24 th Edition, 2023 ,Method No. 3500-K.
		4. Total Hardness as CaCO ₃	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 24 th Edition, 2023, Method No. 2340.C.
		5. Calcium Hardness as CaCO ₃	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 24 th Edition, 2023, Method No. 3500-Ca.B
		6. Total Alkalinity as CaCO ₃	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 24 th Edition, 2023, Method No. 2320. B
		7. Chloride (Cl)	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 24 th Edition, 2023, Method No. 4500 Cl. B.
		8. Total Dissolved Solids	Hanna, USA (HI 2300 EC/TDS/NaCl Bench Meter)
		9. Electrical Conductivity	Hanna, USA (HI 2300 EC/TDS/NaCl Bench Meter)

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		10. Sulphate as SO ₄	Standard Methods for the Examination of Water and Waste water APHA/AWWA 24 th Edition, 2023
		11. Magnesium as CaCO ₃	Standard Methods for the Examination of Water and Waste water APHA/AWWA 24 th Edition, 2023
		12. Carbonates	Association of Official Analytical Chemists (AOAC) 19 th Edition, 2017
		13. Bicarbonates	Association of Official Analytical Chemists (AOAC) 19 th Edition, 2017
Waste Water	Chemical Testing Laboratory Waste Water (FTC)	i). COD	HACH DR / 900 Data logging Colorimeter Hand Book HACH 8000 USEPA Approved Method.
Fats/Oil	Chemical Testing Laboratory Oil (FTC)	Determination of Moisture Content	AOAC 22nd Edition, 2023. Official Method No 926.12
		Determination of Refractive Index	AOAC 22nd Edition, 2023. Official Method No 921.08
		Determination of Free Fatty Acid	AOAC 22nd Edition, 2023. Official Method No 940.28
		Determination of Peroxide Value	AOAC 22nd Edition, 2023. Official Method No 965.33
		Determination of Specification Value	AOAC 22nd Edition, 2023. Official Method No 920.160
Honey (Food)	Chemical Testing Laboratory Honey (FTC)	i). Moisture	AOAC 2023, 969.38, Chap-44, P-26, (44.4.04)
		ii). Ash	AOAC 2023, 920.181, Chap-44, P-26, (44.4.05) Pearson's Chemical Analysis of Foods, 8th Edition 1981.
		iii). Total Sugars	AOAC 2023, 962.19, Chap-44, P-28, (44.4.20)
		iv). Reducing Sugars	Lane and Eynon Titration, Pearson's Chemical Analysis of Foods by 8th Edition 1981.
		v). Non Reducing Sugars	Ranganna S, 2012: Handbook of Analysis and Quality Control for Fruit and Vegetable Products, 2 nd Edition. Tata McGraw-Hill, New Delhi, India, 1112.
		vi). Free Acidity	AOAC 2023, 962.19, Chap-44, P-36, (44.4.20)
		vii). Hydroxy methyl furfural Content (HMF)	AOAC 2023, 980.23, Chap-44, P-34, (44.4.15)

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		viii). Diastase Activity (Goothe)	Polska norma PN-88/A-77626 Miód pszczeli, Wyd. Normal, Alfa, Warszawa 1988.
		ix). Water Insoluble Solid Contents	IHC, 2009. Harmonised Methods of the International Honey Commission
Herbal Raw Materials	Chemical Testing Laboratory Herbal (MBC)	i). Moisture/Water Content	AOAC 21 st Edition, 2019
		ii). Total Ash	AOAC 21 st Edition, 2019
		iii). Ash Acid Insoluble	AOAC 21 st Edition, 2019
Tobacco and Tobacco product	-do-	i). Ash Content ii). Moisture Content iii). Acid Insoluble Ash	AOAC 21 st Edition, 2019
Herbal raw materials and finished products	-do-	i). Volatile Oil Content	EuP, 10 th Edition, 2019
Plant materials (Powder and liquid form)	-do-	i). Melting Point ii). Density of Liquid	USP, Vol. 6, 2018 EuP, 10 th Edition, 2019

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TESTING LABORATORY:-

Accreditation Scope of *Microbiology Testing Laboratory* of PCSIR Laboratories Complex, Peshawar – Pakistan

Permanent Laboratory Premises X

Materials/ Products Tested	Testing field (e.g. Environmental Testing or Mechanical Testing) Testing Field	Types of test/ Properties measured	Reference to Standardized Method (e.g. ISO 14577-1:2003)/ Internal Method Reference
Water	Microbiology Testing Laboratory	1.Total plate count	Standard methods for the examination of water and waste water American Public Health Association, American Water Work Associations and Water Environmental Federation. 24 th edition (2023). (APHA 9215 B,C)
		2.Total Coliform and fecal Coliform	Standard methods for the examination of water and waste water American Public Health Association, American Water Work Associations and Water Environmental Federation. 24 th edition (2023).
Juice	Microbiology Testing Laboratory	3.Detection of E.coli 4.Enumeration of E.coli	Standard Methods for the Examination of water and waste water 24 th Edition, 2023, APHA, AWWA, WEF..
		1. Total Plate Count	ISO 4833: Third Edition 2003-02-01. Microbiology of Food and Animal Feeding stuff-Horizontal methods For the enumeration of Microorganisms-Colony-count technique at 30 °C.
		2. Total Coliform	Third edition: 2006-08-15. ISO 4831. Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Most probable number technique.
		3. Fecal Coliform 4. Detection of E.coli	Manual of Food Quality Control Microbiological Analysis, Revision-1, Food and Agricultural Organization of the United Nation, Rome, 1992. Reference number ISO 7251:2005(E). Third edition 2005-02-01. Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive <i>Escherichia coli</i> — Most probable number technique.

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Materials/ Products Tested	Testing field (e.g. Environmental Testing or Mechanical Testing) Testing Field	Types of test/ Properties measured	Reference to Standardized Method (e.g. ISO 14577-1:2003)/ Internal Method Reference	
Milk	Microbiology Testing Laboratory	5. Enumeration of E.coli	Reference number ISO 7251:2005(E). Third edition 2005-02-01. Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive <i>Escherichia coli</i> — Most probable number technique. ISO 4833: Third Edition 2003-02-01. Microbiology of Food and Animal Feeding stuff- Horizontal methods For the enumeration of Microorganisms-Colony-count technique at 30 °C.	
		1. Total Plate Count		
		2. Total Coliforms		Third edition: 2006-08-15. ISO 4831. Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Most probable number technique.
		3. Fecal Coliforms		. Manual of Food Quality Control Microbiological Analysis, Revision-1, Food and Agricultural Organization of the United Nation, Rome, 1992.
		4. Detection of Ecoli		Reference number ISO 7251:2005(E). Third edition 2005-02-01. Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive <i>Escherichia coli</i> — Most probable number technique.
		5. Enumeration of E.coli	Reference number ISO 7251:2005(E). Third edition 2005-02-01. Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive <i>Escherichia coli</i> — Most probable number technique.	
Food	Microbiology Testing Laboratory	1.Total Plate Count	ISO 4833: Third Edition 2003-02-01. Microbiology of Food and Animal Feeding stuff-Horizontal methods For the enumeration of Microorganisms-Colony-count technique at 30 °C.	
		2.Total Coliforms	Third edition: 2006-08-15. ISO 4831. Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Most probable number technique.	
		3.Fecal Coliform	Manual of Food Quality Control Microbiological Analysis, Revision-1, Food	

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Materials/ Products Tested	Testing field (e.g. Environmental Testing or Mechanical Testing) Testing Field	Types of test/ Properties measured	Reference to Standardized Method (e.g. ISO 14577-1:2003)/ Internal Method Reference
		4.Detection of E.coli	and Agricultural Organization of the United Nation, Rome, 1992. Reference number ISO 7251:2005(E). Third edition 2005-02-01. Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive <i>Escherichia coli</i> — Most probable number technique.
		5.Enumeration of E.coli	Reference number ISO 7251:2005(E). Third edition 2005-02-01. Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive <i>Escherichia coli</i> — Most probable number technique.
		6.Detection of Yeast	Microbiology of Food and Animal Feeding Stuff- Horizontal Methods for the Enumeration of Yeast and Mould Method ISO 21527-1-2 First Edition 2008-07-01
		7.Enumeration of Yeast	Microbiology of Food and Animal Feeding Stuff- Horizontal Methods for the Enumeration of Yeast and Mould Method ISO 21527-1-2 First Edition 2008-07-01
		8.Detection of Mould	Microbiology of Food and Animal Feeding Stuff- Horizontal Methods for the Enumeration of Yeast and Mould Method ISO 21527-1-2 First Edition 2008-07-01
		9.Enumeration of Mould	Microbiology of Food and Animal Feeding Stuff- Horizontal Methods for the Enumeration of Yeast and Mould Method ISO 21527-1-2 First Edition 2008-07-01

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CALIBRATION LABORATORY: -

Accreditation Scope of Calibration Laboratory of PCSIR Laboratories Complex, Peshawar - Pakistan

Within and outside Laboratory Premises

Measured quantity	Range	*Expanded Uncertainty (\pm)	Technique, Reference Standard, Equipment
Mass Metrology:			
Mass (F1 and below class)	10 mg ~ 500 mg	0.02 mg	OIMLR III-I,2004(E) Micro Balance XPR2 Sartorius Balance ME-235S Mass Comparator KA 30 – 3/P ASTM Class 1 Masses F1 Class Masses
	1 g ~ 500 g	0.02 mg ~ 0.09 mg	
	1 g ~ 5 kg	0.04 g	
Weighing Machine/ Balance	10 mg ~ 220 g	0.58 mg	OIMLR 76-I,2006(E) ASTM Class 1 Masses F1 Class Masses
	10 mg ~ 6 kg	0.08 g	
Temperature:			
Temperature (Measurement/Source)	-20 °C ~ 300 °C	0.12 °C ~ 2 °C	ASTM, E77-14(2021) ASTM Thermometer Set Controlled Temperature Bath F25 Oil Bath
Volume Metrology:			
Micropipette	i). 20 μ L ~ 100 μ L ii). 100 μ L ~ 1000 μ L iii). Above 1000 μ L	0.25 μ L ~ 1.7 μ L 0.80 μ L ~ 3.6 μ L 3.7 μ L	ISO 8655-6:2022 Sartorius Balance ME-235S
Glassware (Pipette)	i). 1 mL ii). 2 mL iii). 5 mL iv). 10 mL v). 20 mL vi). 25 mL	0.00077 mL 0.058 mL 0.00092 mL 0.0013 mL 0.13 mL 0.12 mL	ASTM E 542-22 Sartorius Balance ME-235S Top loading Balance AEP -6000 G
Glassware (Graduated Cylinder)	i). 10 mL ii). 25 mL iii). 50 mL iv). 100 mL v). 250 mL vi). 500 mL vii). 1000 mL	0.17 mL 0.31 mL 0.59 mL 0.59 mL 0.59 mL 1.5 mL 2.9 mL	ASTM E 542-22 Top loading Balance AEP -6000 G

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Glassware (Volumetric Flasks)	i) 25 mL ii) 50 mL iii) 100 mL iv. 250 mL v) 500 mL vi) 1000 mL vii) 2000 mL	0.12 mL 0.12 mL 0.12 mL 0.12 mL 0.12 mL 0.12 mL 0.12 mL	ASTM E 542-22 Top loading Balance AEP -6000 G
Glassware (Burettes)	i) 25 mL ii) 50 mL iii) 100 mL	0.13 mL 0.14 mL 0.17 mL	ASTM E 542-22 Top loading Balance AEP -6000 G
Glassware (Beakers)	i) 50 mL ii) 100 mL iii) 250 mL iv) 500 mL v) 1000 mL	0.58 mL 1.2 mL 1.5 mL 2.9 mL 5.9 mL	ASTM E 542-22 Top loading Balance AEP -6000 G
Pressure Metrology:			
Hydraulic Pressure	15 psi ~ 1000 psi	0.1 psi ~ 1 psi	User manual for Dead Weight Tester ASHCROFT 1305D
	1000 psi ~ 5000 psi	1 psi ~ 2 psi	
	5000 psi ~ 10000 psi	2 psi ~ 3 psi	
Electrical Metrology:			
AC Voltage @ 50 Hz ~ 5 kHz (Measurement/Source)	200 mV ~ 1000 V	1 μ V ~ 100 μ V	Euramet cg-15 version 3.0 (02/2015) Multimeter 8508A Inmel 7000 Inmel 33
DC Voltage (Measurement/Source)	200 mV ~ 1000 V	0.1 μ V ~ 1 mV	Euramet cg-15 version 3.0 (02/2015) Multimeter 8508A Inmel 7000
AC Current @ 20 Hz ~ 1 kHz (Measurement/Source)	0.2 mA ~ 20 A	1 μ A ~ 0.1 mA	Euramet cg-15 version 3.0 (02/2015) Multimeter 8508A Inmel 7000 Inmel 33
DC Current (Measurement/Source)	0.2 mA ~ 20 A	0.01 μ A ~ 10 μ A	Euramet cg-15 version 3.0 (02/2015) Multimeter 8508A Inmel 7000
Electrical Resistance (Measurement/Source)	1 Ω ~ 1 G Ω	0.1 Ω ~ 0.001 G Ω	Euramet cg-15 version 3.0 (02/2015) Multimeter 8508A Inmel 7000
Dimension Metrology:			
Length	1 mm ~ 200 mm	0.01 mm	DIN – 862 Gauge Block Set (Grade 0) Gauge Block Set (Grade 1)
*capabilities are to be expressed as uncertainties (\pm) for a confidence probability of not less than 95%.			

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* **Expanded Uncertainty:** Expanded Uncertainty is the measurement uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k = 2$. This measurement uncertainty is a value for which the laboratory has been accredited using the procedure that was the subject of assessment. In certificates issued under its accreditation scope an accredited laboratory is not permitted to quote an uncertainty that is smaller than the published uncertainty for respective ranges as given above.

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