

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

**Awarded to**

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

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 **25-05-2024**.

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**

**14-03-2024**  
Date

**SD**  
Director General

	<b>ACCREDITATION DOCUMENT</b>	<b>F-06/02</b> <b>Issue Date: 18/08/2020</b> <b>Rev. No: 09</b> <b>LAB 019</b>
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**Testing Laboratory:-**

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

**Permanent 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
<b>Water</b>	<b>Chemical Testing Laboratory Water,(FTC)</b>	1. pH	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 23 <sup>rd</sup> Edition, 2017, Method No. 4500- H <sup>+</sup> . B
		2. Sodium (Na)	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 23 <sup>rd</sup> Edition, 2017,Method No. 3500 – Na.
		3. Potassium (K)	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 23 <sup>rd</sup> Edition, 2017,Method No. 3500-K.
		4. Total Hardness as CaCO <sub>3</sub>	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 23 <sup>rd</sup> Edition, 2017, Method No. 2340.C.
		5. Calcium Hardness as CaCO <sub>3</sub>	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 23 <sup>rd</sup> Edition, 2017, Method No. 3500-Ca.B
		6. Total Alkalinity as CaCO <sub>3</sub>	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 23 <sup>rd</sup> Edition, 2017, Method No. 2320. B
		7. Chloride (Cl)	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 23 <sup>rd</sup> Edition, 2017,Method No. 4500 Cl. B.
		8. Total Dissolved Solids	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 23 <sup>rd</sup> Edition, 2017, Method No. 2540. C.
		9. Electrical Conductivity	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 23 <sup>rd</sup> Edition, 2017, Method No. 2510. B.
		10. Sulphate as SO <sub>4</sub>	Standard Methods for the Examination of Water and Waste water APHA/AWWA 23 <sup>rd</sup> Edition, 2017

**14-03-2024**

Date

**Sd**

Director

	<b>ACCREDITATION DOCUMENT</b>	<b>F-06/02</b> <b>Issue Date: 18/08/2020</b> <b>Rev. No: 09</b> <b>LAB 019</b>
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		11. Magnesium as $\text{CaCO}_3$	Standard Methods for the Examination of Water and Waste water APHA/AWWA 23 <sup>rd</sup> Edition, 2017
		12. Carbonates	Standard Methods for the Examination of Water and Waste water APHA/AWWA 23 <sup>rd</sup> Edition, 2017
		13. Bicarbonates	Standard Methods for the Examination of Water and Waste water APHA/AWWA 23 <sup>rd</sup> Edition, 2017
<b>Waste Water</b>	<b>Chemical Testing Laboratory Waste Water (FTC)</b>	i). COD	HACH 8000 USEPA Approved Method.
<b>Fats/Oil</b>	<b>Chemical Testing Laboratory, (FTC)</b>	Determination of Moisture Content	AOAC 29 <sup>th</sup> Edition 2019, Official Method No. 981.11
		Determination of Refractive Index	AOAC 29 <sup>th</sup> Edition 2019, Official Method No. 921.08
		Determination of Free Fatty Acid	AOAC 29 <sup>th</sup> Edition 2019, Official Method No. 940.28
		Determination of Peroxide Value	AOAC 29 <sup>th</sup> Edition 2019, Official Method No. 965.33
		Determination of Specification Value	AOAC 29 <sup>th</sup> Edition 2019, Official Method No. 920.160
<b>Honey (Food)</b>	<b>Chemical Testing Laboratory, (FTC)</b>	i). Moisture	AOAC 2019, 969.38 (B), Chap-44, P-26, (44.4.04)
		ii). Ash	AOAC 2019, 920.181, Chap-44, P-26, (44.4.05) Pearson's Chemical Analysis of Foods, 8 <sup>th</sup> Edition 1981.
		iii). Total Sugars	AOAC 2019, 962.19, Chap-44, P-28, (44.4.20)
		iv). Reducing Sugars	

**14-03-2024**  
Date

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Sd  
Director

	<b>ACCREDITATION DOCUMENT</b>	<b>F-06/02</b> <b>Issue Date: 18/08/2020</b> <b>Rev. No: 09</b> <b>LAB 019</b>
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		v). Non Reducing Sugars	Lane and Eynon Titration, Pearson's Chemical Analysis of Foods by 8 <sup>th</sup> Edition 1981.  Ranganna S, 2012: Handbook of Analysis and Quality Control for Fruit and Vegetable Products, 2 <sup>nd</sup> Edition. Tata McGraw-Hill, New Delhi, India, 1112.
		vi). Free Acidity	AOAC 2019, 962.19, Chap-44, P-36, (44.4.20)
		vii). Hydroxy methyl furfural Content (HMF)	AOAC 2019, 980.23, Chap-44, P-34, (44.4.15)
		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
<b>Herbal Raw Materials</b>	<b>Chemical Testing Laboratory, Herbal ,(MBC)</b>	i). Moisture/Water Content	AOAC 21 <sup>st</sup> Edition, 2019
		ii). Total Ash	AOAC 21 <sup>st</sup> Edition, 2019
		iii). Ash Acid Insoluble	AOAC 21 <sup>st</sup> Edition, 2019
<b>Tobacco and Tobacco product</b>	-do-	i). Ash Content ii). Moisture Content iii). Acid Insoluble Ash iv). Nicotine Content	AOAC 21 <sup>st</sup> Edition, 2019
<b>Herbal raw materials and finished products</b>		i). Volatile Oil Content	EuP, 10 <sup>th</sup> Edition, 2019
<b>Plant materials (Powder and liquid form)</b>	-do-	i). Melting Point	USP, Vol. 6, 2018
		ii). Density of Liquid	EuP, 10 <sup>th</sup> Edition, 2019
		iii). Water Soluble Extraction	BP Vol.-V, Appendix XID,V-A 369
		iv). Alcohol Soluble Extraction	BP Vol.-V, Appendix XID,V-A 369

**14-03-2024**  
Date

Sd \_\_\_\_\_  
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	<b>ACCREDITATION DOCUMENT</b>	<b>F-06/02</b> <b>Issue Date: 18/08/2020</b> <b>Rev. No: 09</b> <b>LAB 019</b>
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Testing Laboratory:-

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

**Permanent 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
<b>Water</b>	<b>Microbiology Testing Laboratory</b>	1. Total Plate Count (TPC)	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 23 <sup>rd</sup> Edition, 2017 Method No. 9215 A-B
		2. Total Coliform and Fecal Coliform	Standard Methods for the Examination of water and wastewater, APHA/AWWA/WEF 23 <sup>rd</sup> Edition, 2017 Method No.9221 A-E
<b>Water</b>	<b>Microbiology Testing Laboratory</b>	3. Detection of E. Coli  4. Enumeration of E. Coli	Standard methods for the Examination of water and waste water, APHA/AWWA/WEF 23 <sup>rd</sup> Edition, 2017, Method No.9221 A-F
<b>Juice</b>	<b>Microbiology Testing Laboratory</b>	1. Total Plate Count (TPC) 2. Total Coliform and Fecal Coliform 3. Detection of E. Coli 4. Enumeration of E. Coli	Compendium of method for Microbiological examination of Food 5 <sup>th</sup> Edition, 2015 Edited by Frances Pouch Downes Keith ITO American Public Health Association Washington DC USA.
<b>Milk</b>	<b>Microbiology Testing Laboratory</b>	1. Total Plate Count (TPC) 2. Total Coliform and Fecal Coliform 3. Detection of E. Coli 4. Enumeration of E. Coli	Compendium of method for Microbiological examination of Food 5 <sup>th</sup> Edition, 2015 Edited by Frances Pouch Downes Keith ITO American Public Health Association Washington DC USA.
<b>Milk Powder (Food)</b>	<b>Microbiology Testing Laboratory</b>	1. Total plate count (TPC) 2. Total Coliform 3. Fecal Coliform 4. Detection of E. Coli 5. Enumeration of E. Coli	Compendium of method for Microbiological examination of Food 5 <sup>th</sup> Edition, 2015, Edited by Frances Pouch Downes Keith ITO American Public Health Association Washington DC USA
		6. Detection of Yeast 7. Enumeration of Yeast 8. Detection of Mould 9. Enumeration of Yeast	Manual of Food and Agriculture Organization of the United Nation 1992.

**14-03-2024**

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**Sd**

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	<b>ACCREDITATION DOCUMENT</b>	<b>F-06/02</b> <b>Issue Date: 18/08/2020</b> <b>Rev. No: 09</b> <b>LAB 019</b>
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Calibration Laboratory.

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

**With in and out side Laboratory Premises**

Measured quantity	Range	*Expanded Uncertainty ( ± )	Technique, Reference Standard, Equipment
Mass Metrology:			
Mass	10 mg ~ 500 mg	0.02 mg	OIMLRIII-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	OIMLR76-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). 0.5 µL ~ 10 µL ii).10 µL ~ 100 µL iii). 100 µL ~ 1000 µL	0.13 µL ~ 0.14 µL 0.20 µL ~ 1.7 µL 0.76 µL ~ 3.7 µL	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
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

**14-03-2024**

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	<b>ACCREDITATION DOCUMENT</b>	<b>F-06/02</b> <b>Issue Date: 18/08/2020</b> <b>Rev. No: 09</b> <b>LAB 019</b>
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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
<b>Pressure Metrology:</b>			
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	
<b>Electrical Metrology:</b>			
AC Voltage @ 50 Hz ~ 5 kHz (Measurement/Source)	200 mV ~ 1000 V	1 μV ~ 10 μV	Euramet cg-15 version 3.0 (02/2015) Multimeter 8508A Inmel 7000 Inmel 33
DC Voltage (Measurement/Source)	200 mV ~ 1000 V	0.1 μV ~ 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 μA ~ 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 μA ~ 10 μA	Euramet cg-15 version 3.0 (02/2015) Multimeter 8508A Inmel 7000
Electrical Resistance (Measurement/Source)	1 Ω ~ 1 GΩ	0.1 Ω ~ 0.001 GΩ	Euramet cg-15 version 3.0 (02/2015) Multimeter 8508A Inmel 7000
<b>Dimension Metrology:</b>			
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 (±) for a confidence probability of not less than 95%.			

**\* 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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