

	ACCREDITATION DOCUMENT	F-06/02 Issue Date: 18/08/2020 Rev. No: 09 LAB 146
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Accreditation No: LAB 146

Awarded to

SOIL AND WATER TESTING LABORATORY, GULBURG ROAD, MODAL TOWN-A, BAHAWALPUR, 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 **29-06-2018** 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 **28-06-2024**.

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

29-06-2021

Date

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Director General



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Testing Laboratory.

Accreditation Scope of Soil and Water Testing Laboratory for Research
Bahawalpur, Pakistan.

Permanent laboratory premises

Materials/Products tested	Testing field (e.g. environmental testing or mechanical testing)	Types of test/ Properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/ Internal method reference
Nitrogen Fertilizer	Chemical testing	Ammonical Nitrogen (Single/ Mixture/ Solid / Liquid)	i. Tandon HLS (Ed.) 2009. Methods of Analysis of Soils, Plants, Waters, Fertilizer and Organic Manures Fertilizer Development Organization, New Delhi Pp 161-162 ii. Official methods of Analysis of AOAC International, 20th Edition, 2016, Method No.2.4.10 (AOAC Official Method 892.01), Fertilizer Chapter 2 Page 15. (SWTBWL/SOP/L3/01)
Nitrogen Fertilizer	Chemical testing	Nitrate Nitrogen (Single/ Mixture/ Solid / Liquid)	i. Tandon HLS (Ed.) 2009. Methods of Analysis of Soils, Plants, Waters, Fertilizer and Organic Manures Fertilizer Development Organization, New Delhi Pp 161-162 ii. Official methods of Analysis of AOAC International, 20th Edition, 2016, . Method No.2.4.10 (AOAC Official Method 892.01), Fertilizer Chapter 2 Page 15. (SWTBWL/SOP/L3/01)
Nitrogen Fertilizer	Chemical testing	Total Nitrogen (Single/ Mixture/ Solid / Liquid)	i. Tandon HLS (Ed.) 2009. Methods of Analysis of Soils, Plants, Waters, Fertilizer and Organic Manures Fertilizer Development Organization, New Delhi Pp 161-162 ii. Official methods of Analysis of AOAC International, 20th Edition, 2016, . Method No.2.4.10 (AOAC Official Method 892.01), Fertilizer Chapter 2 Page 15. (SWTBWL/SOP/L3/01)

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Nitrogen Fertilizer	Chemical testing	Ureic Nitrogen (Single/ Mixture/ Solid / Liquid)	<p>i. Tandon HLS (Ed.) 2009. Methods of Analysis of Soils, Plants, Waters, Fertilizer and Organic Manures Fertilizer Development Organization, New Delhi Pp 161-162</p> <p>ii. Official methods of Analysis of AOAC International, 20th Edition, 2016, . Method No.2.4.10 (AOAC Official Method 892.01), Fertilizer Chapter 2 Page 15/ (SWTBWL/SOP/L3/01)</p>
Phosphate Fertilizer	Chemical testing	Citrate Soluble Phosphorus Estimation (Single/ Mixture/ Solid / Liquid)	<p>Pakistan standard for Single Super phosphate (2nd edition) PS: 67-1996. PSQCA. Karachi. (SWTBWL/SOP/L3/02)</p>
Potassium fertilizer	Chemical testing	Water Soluble Potassium (Single/ Mixture/ Solid / Liquid)	<p>Pakistan Standard Specification for potassium Sulphate PS: 1501/2011 (2nd Revision) ICS: 65.080 PSQCA Karachi. Flamephotometer (SWTBWL/SOP/L3/03)</p>
Zinc Fertilizer	Chemical testing	Water Soluble Zinc (Single/ Mixture/ Solid / Liquid)	<p>Official Method of Analysis of AOAC International, 20th Edition, 2016 Method No.2.6.01 (AOAC Official Method 965.09), Fertilizer Chapter 2, Subchapter 6, Page 29-30. (Atomic Absorption Spectrophotometry) (SWTBWL/SOP/L3/05)</p>
Zinc Fertilizer	Chemical testing	Acid Soluble Zinc (Single/ Mixture/ Solid / Liquid)	<p>Official Method of Analysis of AOAC International, 20th Edition, 2016 Method No.2.6.01 (AOAC Official Method 965.09), Fertilizer Chapter 2, Subchapter 6, Page 29-30. (Atomic Absorption Spectrophotometry) (SWTBWL/SOP/L3/06)</p>
Iron Fertilizer	Chemical testing	Acid Soluble Iron (Single/ Mixture/ Solid / Liquid)	<p>Official Method of Analysis of AOAC International, 20th Edition, 2016 Method No.2.6.01 (AOAC Official Method 965.09), Fertilizer Chapter 2, Subchapter 6, Page 29-30. (Atomic Absorption Spectrophotometry) (SWTBWL/SOP/L3/06)</p>
Copper Fertilizer	Chemical testing	Acid Soluble Copper (Single/ Mixture/ Solid / Liquid)	<p>Official Method of Analysis of AOAC International, 20th Edition, 2016 Method No.2.6.01 (AOAC Official Method 965.09), Fertilizer Chapter 2, Subchapter 6, Page 29-30. (Atomic Absorption Spectrophotometry)</p>

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			(SWTBWL/SOP/L3/06)
Manganese Fertilizer	Chemical testing	Acid Soluble Manganese (Single/ Mixture/ Solid / Liquid)	Official Method of Analysis of AOAC International, 20 th Edition, 2016 Method No.2.6.01 (AOAC Official Method 965.09), Fertilizer Chapter 2, Subchapter 6, Page 29-30/(Atomic Absorption Spectrophotometry) (SWTBWL/SOP/L3/06)
Boron Fertilizer	Chemical testing	Water Soluble Boron (Single/ Mixture/ Solid / Liquid)	Official Methods of Analysis of AOAC International, 20 th Edition, 2016, Method No 2.6.04 (AOAC Official method 982.01), Fertilizer Chapter 2, Subchapter 6, Page 31. (SWT BWL/SOP/L3/04)
Chelated Zinc	Chemical testing	Chelated Zinc (Single/ Mixture/ Solid / Liquid)	1. Vogel's Textbook of Quantitative Chemical Analysis, 6 th Edition, J Mendham, R c Denney, J D Barnes, M J K Thomas 2. Official Methods of Analysis of AOAC International, 20 th Edition, 2016, Method No 2.6.01 (AOAC Official method 965.09), Fertilizer Chapter 2, Subchapter 6, Page 29-30. (SWT BWL/SOP/L3/10)
Organic Matter	Chemical testing	Organic Matter (Single/ Mixture/ Solid)	i. AOAC International, 20 th Edition, 2016, Method No 2.7.08 (AOAC Official method 967.05), Fertilizer Chapter 2, Subchapter 7, Page 54 ii. Tandon HLS (Ed.) 2009. Methods of Analysis of Soils, Plants, Waters, Fertilizer and Organic Manures Fertilizer Development Organization, New Delhi Pp 161-162.
Humic Acid	Chemical testing	Humic Acid (Solid / Liquid)	ISO 19822:2018 https://www.iso.org/standard/66271.html . (SWTBWL/SOP/L3/08)
Organic Matter	Chemical testing	Cation exchange capacity (Single/ Mixture/ Solid)	Official Methods of Analysis of AOAC International, 20 th Edition, 2016, Method No. 2.7.13 (AOAC Official Method 973.09), Fertilizers Chapter 2, Subchapter 7 Page 56. (SWTBWL/SOP/L3/09)
Sulphur	Chemical testing	Sulphur (Single/ Mixture/ Solid / Liquid)	i.Diagnosis and Improvement of Saline and Alkali Soils, USDA, Handbook Book No. 60 pp 146 ii.Official Method of Analysis of AOAC International, 20 th Edition, 2016 AOAC Official Method 980.02 Method No. 2.6.28 Page 39 iii.Pakistan Standard Specification for SOP

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			Fertilizer Grade PS:1501-2011 ® ICS:65.080 Pakistan Standards and Quality Control Authority, Karachi. (SWTBWL/SOP/L3/12)
Chloride	Chemical testing	Total Chlorides (Single/ Mixture/ Solid / Liquid)	i.Diagnosis and Improvement of Saline and Alkali Soils, USDA, Handbook Book No. 60 pp 146 ii.Official Method of Analysis of AOAC International, 20th Edition, 2016 AOAC Official Method 928.02 Method No. 2.6.09 page 33 iii.Pakistan Standard Specification for SOP Fertilizer Grade PS:1501-2011 ® ICS:65.080 Pakistan Standards and Quality Control Authority, Karachi (SWTBWL/SOP/L3/13)

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Date

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Director