

	ACCREDITATION DOCUMENT	F-06/02 Issue Date: 18/08/20 Rev. No: 09 LAB 133
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Accreditation No: LAB 133

Awarded to

**Soil & Water Testing Laboratory for Research.
Data Ganj Baksh Road, Murree Road,
Rawalpindi. 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 **14-03-2018** 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 **13-03-2024**.

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

14-09-2021

Date

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Director General

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Testing Laboratory.

Accreditation Scope of **Soil & Water Testing Laboratory for Research.**
Data Ganj Baksh Road, Murree Road,
Rawalpindi. Pakistan

Permanent laboratory premises

Products/Material 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 in solid and liquid	Chemical Testing (fertilizer)	Inorganic/organic nitrogen estimation (ammonical, nitrate and ureic)	i. Official Methods of Analysis of AOAC International, 20 th Edition, 2016. Method No. 2.4.05 (AOAC Official Method 978.02), Fertilizers Chapter 2 Page 14-15. ii. SWTL-RWP/SOP-Macro/L3/01
Phosphorus in solid and liquid	Chemical Testing (fertilizer)	Citrate soluble phosphorus estimation	Pakistan standard for Single Super Phosphate (2 nd edition) PS: 67-1996. PSQCA. Karachi ii. SWTL-RWP/SOP-Macro/L3/01
Potassium in solid and liquid	Chemical Testing (fertilizer)	Water soluble potassium estimation	Richards. L. A. 1954. Diagnosis and improvement of saline and alkali soils. USDA, Agric., Handbook 60, Washington, D.C. ii. SWTL-RWP/SOP-Macro/L3/01
Zinc in Zinc Sulphate and mixed fertilizer	Chemical Testing (fertilizer)	Water & Acid soluble zinc estimation	Official Methods of Analysis of AOAC International. 20 th Edition, 2016. Method No. 2.6.01 (AOAC Official Method 965.09), Fertilizers Chapter 2, Subchapter 6, Page 29-30

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			ii SWTL-RWP/SOP-Micro/L3/02
Copper (Cu) in solid/liquid/ mixed fertilizer	Chemical Testing (fertilizer)	Water & Acid soluble Cu estimation	Official Methods of Analysis of AOAC International. 20 th Edition, 2016. Method No. 2.6.01 (AOAC Official Method 965.09), Fertilizers Chapter 2, Subchapter 6, Page 29-30. 6ii SWTL-RWP/SOP-Micro/L3/02
Ferrous (Fe) in solid/liquid/ mixed fertilizer	Chemical Testing (fertilizer)	Water & Acid soluble Fe estimation	Official Methods of Analysis of AOAC International, 20 th Edition, 2016. Method No. 2.6.01 (AOAC Official Method 965.09), Fertilizers Chapter 2, Subchapter 6, Page 29-30 ii SWTL-RWP/SOP-Micro/L3/02
Manganese (Mn) in solid/liquid/ mixed fertilizer	Chemical Testing (fertilizer)	Water & Acid soluble Mn estimation	Official Methods of Analysis of AOAC International, 20 th Edition, 2016. Method No. 2.6.01 (AOAC Official Method 965.09), Fertilizers Chapter 2, Subchapter 6, Page 29-30 ii SWTL-RWP/SOP-Micro/L3/02
Boron (B) in solid/liquid/ mixed fertilizer	Chemical Testing (fertilizer)	Water & Acid soluble B estimation	Official Methods of Analysis of AOAC International, 20 th Edition, 2016. Method No. 2.6.04 (AOAC Official Method 982.01), Fertilizers Chapter 2, Subchapter 6, Page 28. ii SWTL-RWP/SOP-Micro/L3/02
Chelated (Zn, Cu, Fe & Mn) in solid/liquid fertilizer	Chemical Testing (fertilizer)	Chelated Fraction estimation of Zn , Fe, Cu and Mn. Where applicable	M. S. A. Khan, M. A. Qazi, S.M. Mian, M. Akram, Comparison of Three Analytical Methods for Separation of Mineral and Chelated Fraction from an Adulterated Zn-EDTA Fertilizer, Journal of Chemical Society of Pakistan, 35, 2 (2013).

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			2. Official Methods of Analysis of AOAC International, 20th Edition, 2016. Method No. 2.6.16 (AOAC Official Method 980.01), Fertilizers Chapter 2, Page 35 ii SWTL-RWP/SOP-Micro/L3/02
Waste Compost (Organic Carbon)	Chemical Testing (fertilizer)	Organic matter	Official Methods of Analysis of AOAC International, 20 th Edition, 2016. Method No. 2.7.08 (AOAC Official Method 967.05), Fertilizers Chapter 2, Subchapter 6 Page 54 2 Instrument required Muffle furnace Oven
Organic Matter	Chemical Testing (fertilizer)	Cation exchange capacity	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 6 Page 56
Amino acid	Chemical Testing (fertilizer)	Total amino-acid (protein base)	Official Methods of Analysis of AOAC International, 20th Edition, 2016,. Method No. 2.4.10 (AOAC Official Method 892.01), Fertilizers Chapter 2 Page 15. ii. FAO nutritional studies no 24(1970). iii. Pellet, L P and Young (1980). iv. Theymoli Balasubramanian, Sadasivam (1987). www.eplantsceinece.com
Humic Acid	Chemical Testing (fertilizer)	Humic Acid in Liquid and solid	Richard T. Lamar. 2009. Critical Comparison of Humic Acid Test Methods. Communications in Soil Science and Plant Analysis, 40: 2309–2322, 2009.

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			F.J. Stevenson, J. Environ. Quality, 1972, 1, 333.
Chlorides	Chemical Testing (fertilizer)	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 / SOPs Micronutrients (PRFTL/SOP-MICRO/L3/003) 29.1 to 29.6
Sulphur	Chemical Testing (fertilizer)	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, 20th Edition, 2016 AOAC Official Method 980.02 Method No. 2.6.28 Page 39. iii. Pakistan Standard Specification for SOP Fertilizer Grade PS:1501- 2011 ® ICS:65.080 Pakistan Standards and Quality Control Authority, Karachi / SOPs Micronutrients (PRFTL/SOP-MICRO/L3/003) 28.1 to 28.6

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