Accreditation No: LAB 143

Awarded to

Soil and Water Testing Laboratory for Research, Suelamanpura, Sargodha, 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 **27-06-2027.**

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

24-10-2024
Date

SD
Director General

Testing Laboratory.

Accreditation Scope of

Soil and Water Testing Laboratory for Research, Suelamanpura, Sargodha, Pakistan

Permanent laboratory premises X

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
1.Phosphate fertilizer (Single or Mixed element, solid/liquid, Organic/Inorganic Fertilizer)	Chemical /Fertilizer Testing	Quantitative analysis of Citrate soluble phosphorus from inorganic fertilizers	In-house verified method (SWTL-SGD /SOP-P/L3/002) based on Pakistan standard for Single Super Phosphate (2nd edition) PS: 67-1996. PSQCA. Karachi and SFRI Guide *Technique: Titration*
		Quantitative analysis of Total phosphorus from Bio-Organic fertilizers	In-house verified method (SWTL-SGD/SOP-TP/L3/020) based on Pakistan standard for BOP.PS:5295/2017 (2ndRev.), PSQCA. Karachi and SFRI Guide .*Technique: Titration Method*
2.Potassium Fertilizer (Single or Mixed element, solid/liquid Fertilizer)		Quantitative analysis of Water soluble from fertilizers	In-house validated method (SWTL-SGD /SOPK/L3/003) based on Testing Methods for Fertilizers (2016).Food and Agricultural Materials Inspection Center. Japan. Section: 4.3.3.a and SFRI Guide *Technique: flame photometry*

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3.Nitrogen fertilizers (Single or Mixed element, solid/liquid, inorganic/organic)		Quantitative analysis of Inorganic/ organic nitrogen (ammonical, nitrate and uric) from Nitrogen containing fertilizers	In-house validated method(SWTL-SGD/SOPN/L3/001) based on i. Tandon HLS (Ed.) 2009. Methods of Analysis of Soils, Plants, Waters, Fertilizer and Organic Manures Fertilizer Development and Consultation Organization, New Delhi. Pp 161-162 ii. Official Methods of Analysis of AOAC International, 20th Edition, 2016. Method No. 2.4.10, 2.4.05 (AOAC Official Methods 978.02, 892.01), Fertilizers Chapter 2 Page 14-17. and SFRI Guide *Technique: Kjeldahl Nitrogen distillation*
4. Micronutrient (Single or Mixed element, solid/liquid, Inorganic/ Organic, Chelated)		Quantitative analysis of Water soluble zinc from Fertilizers	In-house validated method (SWTL-SGD/SOP-Zn/L3/004) based Official Methods of Analysis of AOAC International, 20th Edition, 2016. Method No. 2.6.01 (AOAC Official Method 965.09), Fertilizers Chapter 2, Subchapter 6, Page 29-30 and SFRI Guide *Technique: Atomic Absorption*
		Quantitative analysis of Water soluble boron from Fertilizers	In-house verified method (SWTL-SGD/SOP-B/L3/005) based on Official Methods of Analysis of AOAC International, 20th Edition, 2016. Method No. 2.6.04 (AOAC Official Method 982.01), Fertilizers Chapter 2, Subchapter 6, Page 31-32. and SFRI Guide *Technique: Spectrophotometric Method*
		Quantitative analysis of Acid Soluble fraction estimation of Zn, Fe, Cu and Mn, from Multi-micro containing Fertilizers	In-house verified method (SWTL-SGD/SOP-AS/L3/010) based on Official Methods of Analysis of AOAC International, 20th Edition, 2016, Method No. 2.6.01-C(a). (AOAC Official Method 965.09), Fertilizers Chapter 2, Sub Chapter-6. Page 29-30. and SFRI Guide *Technique: Atomic Absorption Spectrophotometric Method*
		Quantitative analysis of Charred / ashed fraction estimation of Zn, Fe, Cu and Mn from Organic Multi micro /Bio Active Fertilizers	In-house verified method (SWTL-SGD/SOPCF/L3/009) based on Official Methods of Analysis of AOAC International, 20th Edition, 2016, Method No: 2.6.01-C(b) (AOAC Official Method 965.09), Fertilizers Chapter 2 Sub Chapter-6. Page 29-30, SFRI Guide and PS: 5336-2021 *Technique: Atomic Absorption*

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		Quantitative analysis of Water Soluble Zn, Cu, Mn and Fe estimation from Inorganic Multi-micro fertilizers	In-house verified method (SWTL-SGD/SOPWS/L3/011) based on Official Methods of Analysis of AOAC International, 20th Edition, 2016, Method No. 2.6.01 (AOAC Official Method 965.09), Fertilizers Chapter 2, Page 29-30 and Method 2.6.25 page 38 (Official AOAC 972.03) and SFRI Guide *Technique: Atomic Absorption*
		Quantitative analysis of Chelated Fraction estimation of Zn, Fe, Cu and Mn from multi-micro Chelated Fertilizers	In-house validated method (SWTL-SGD/SOPchl-Micro/L3/021) based Journal of Chemical Society of Pakistan, 35, 2 (2013). 1.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) and SFRI Guide *Technique: Atomic Absorption*
		Quantitative analysis of Cd, Ni and Pb estimation from fertilizers	In-house verified method (SWTL-SGD/SOPWS/L3/011) based on Official Methods of Analysis of AOAC International, 20th Edition, 2016, Method No. 2.6.01 (AOAC Official Method 965.09), Fertilizers Chapter 2, Page 29-30 and Method 2.6.25 page 38 (Official AOAC 972.03) and Method No: 2.6.01-C(b) *Technique: Atomic Absorption*
5. Organic Matter and Moisture (Solid/Liquid Fertilizer)		Quantitative analysis of Organic matter contents and Moisture from fertilizers	In-house verified method (SWTL-SGD/SOP-O.M/L3/008) based on Official Methods of Analysis of AOAC International,20th Edition, 2016, Method No. 2.7.08 (AOAC Official Method 967.05), Fertilizers Chapter 2, Subchapter 7 Page 54 and 967.03 and SFRI Guide *Technique: Loss on ignition (oven)*
6. CEC/Organic Matter(Solid/Liquid Fertilizer)		Quantitative analysis of Cation exchange capacity of OM/compost	In-house verified method (SWTL-SGD/SOP-CEC/L3/023) based on Official Methods of Analysis of AOAC International, 20th Edition, 2016. Method No. 2.7.13 (AOAC Official Method 973.09), Fertilizers Chapter 2, Subchapter 7, Page 56. *Technique: Titration*
7. Humic acid Fertilizers (Single or Mixed, Solid/Liquid Fertilizer)		Quantitative analysis of Humic acid contents from Humic Acid Fertilizers	In-house verified method (SWTL-SGD/SOP-HA/L3/007) based on ISO:19822:2018 method, https://www.iso.org/standard/66271.html. *Technique: Gravitational (Oven)*
8.Calcium and Magnesium fertilizers (inorganic/organic, single /mixed, liquid/solid		Quantitative analysis of Water Soluble calcium from gypsum fertilizers	In-house verified method (SWTL-SGD/SOP-G/L3/015) based on USDA Handbook 60, US Government Printing Office, Washington, D C. Technique: Titration

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		Quantitative analysis of Water Soluble Calcium from Calcium containing fertilizers	In –house verified method (SWTL-SGD/SOPCa/L3/015) based on Testing Methods forFertilizers (2016). Incorporated Administrative Agency. Food and Agricultural Materials Inspection Center. Japan. 4.5.3.a Technique: Atomic Absorption
		Quantitative analysis of Acid Soluble Ca Mg from Calcium and Magnesium containing fertilizers	In-house verified method (SWTL-SGD/SOP-AS_Ca_Mg/L3/019) based on Official Methods of Analysis of AOAC International, 20th Edition, 2016, Method No. 2.6.01-C(a). (AOAC Official Method 965.09), Fertilizers Chapter 2, Sub Chapter-6. Page 29-30 Technique: Atomic Absorption
		Quantitative analysis of water Soluble Mg from Mg containing fertilizers	In-house verified method (SWTL-SGD/SOP-WS-Mg/L3/023) based on Testing Methods for Fertilizers (2016). Incorporated Administrative Agency. Food and Agricultural Materials Inspection Center Japan.Section 4.6.3.a. Technique: Atomic Absorption Spectrophotometric Method
9. Total Sulphur Determination from fertilizers (Liquid, Solid)		Quantitative analysis of Sulphur from S-containing fertilizers	In-house verified method (SWTL-SGD/SOP-S/L3/018) based on Official Methods of Analysis of AOAC, 20th Edition, 2016. Method No. 2.6.8(AOAC Official Method 980.02), Fertilizers Chapter 2, , Page 39, SFRI guide and PS-5336-21 Method: Gravimetric
10. Chloride Determination from fertilizers (Liquid, Solid)		Quantitative analysis of Total Soluble Chloride from fertilizers	In-house verified method (SWTL-SGD/SOP-Cl/L3/017) based on Pakistan standards specification for Potassium chloride (muriate of potash) fertilizer grade PS: 1517-1981 and SFRI Guide
11. Sodium Determination from fertilizers (Liquid, Solid)		Quantitative analysis of Total Soluble and Acid Sodium from fertilizers	In-house verified method (SWTL-SGD/SOP-AS/L3/010) based on Official Methods of Analysis of AOAC International, 20th Edition, 2016, Method No. 2.6.01-C(a). (AOAC Official Method 965.09), Fertilizers Chapter 2, Sub Chapter-6. Page 29-30. *Technique: FlamePhotometer Method*

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