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Accreditation No: LAB 149

Awarded to

**Soil and Water Testing Laboratory,
opposite Gulshan-e-Iqbal Park,
G.T Road, Gujranwala-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 **02-07-2018** 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 **01-07-2024**.

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

16-12-2021

Date

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Director General

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Testing Laboratory.

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

Permanent laboratory premises

Materials/Product s 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.Nitrogen Fertilizer (Single or Mixed element, solid/liquid Fertilizer)	Chemical/Fertilizer Testing	Inorganic/organic nitrogen estimation (Ammonical, nitrate and uric)	Official methods of Analysis of AOAC International, 18 th Edition, 2005, Current Revision 4 th , 2011. Method No. 2.4.05 (Modified Comprehensive Nitrogen Method 978,02,920.03,892.01)
2.Phosphate Fertilizer (Single or Mixed element, solid/liquid Fertilizer)	Chemical/Fertilizer Testing	Citrate soluble phosphorus estimation	Pakistan standard for Single Super Phosphate (2 nd edition) PS: 67-1996. PSQCA. Karachi
3.Potassium Fertilizer (Single or Mixed element, solid/liquid Fertilizer)	Chemical/Fertilizer Testing	Water soluble potassium estimation	Testing Methods for Fertilizer (2013). Incorporated Administrative Agency. Food and Agriculture Material Inspection Center, Japan
4. Zinc Fertilizer (Single or Mixed element, solid/liquid Fertilizer)	Chemical/Fertilizer Testing	Water and acid soluble zinc estimation	Official Methods of Analysis of AOAC International, 18 th Edition, 2005, Current Revision, 4,2011. Method No. 2.6.01 (AOAC Official Method 965.09), Fertilizer, Chapter2, Subchapter 6,pages 29-30
5. Boron Fertilizer (Single or Mixed element, solid/liquid Fertilizer)	Chemical/Fertilizer Testing	Water soluble boron estimation	Official Methods of Analysis of AOAC International, 18 th Edition, 2005, Current Revision, 4,2011. Method No. 2.6.01 (AOAC Official Method 982.01), Fertilizer, Chapter2, Subchapter 6,pages 28

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06. Micronutrients in Fertilizer (Single or Mixed Element, Solid/Liquid Fertilizer)	Chemical/Fertilizer Testing	Acid Soluble fraction estimation of Zn, Fe, Cu and Mn.	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
07. Organic Matter (Solid/Liquid Fertilizer)	Chemical/Fertilizer Testing	Organic matter contents	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
08. Humic Acid Fertilizer (Single or Mixed element, solid/liquid Fertilizer)	Chemical/Fertilizer Testing	Humic Acid content by Gravimetric Method	i) F.J.Stevenson, J. Environ. Quality, 1972, 1, 333. ii) A.K.Fataftah, PhD Thesis, Northeastern University, Boston, 1997 iii) T.L. Senn and A.R Kingman, A Review of Human and Humic Acid Research,
09. Amino Acid content in Fertilizer (Single or Mixed element, solid/liquid Fertilizer)	Chemical/Fertilizer Testing	Determination of Amino Acids on the basis of Nitrogen contents	1. FAO nutritional studies No. 24(1970) amino acid content of food and biological data on proteins FAO Rome. 2. Pellet, L P and Young, V R (1980). Nutritional evaluation of protein foods UN Unvi Publ. 3. Theymoli Balasubramanian and Sadasivam, S (1987) Plant Foods Hum Nutr 37 41.
10. Sulphur in Fertilizer (Single or Mixed element, solid/liquid Fertilizer)	Chemical/Fertilizer Testing	Sulphur in fertilizer by Gravimetric Method	1. Diagnosis and Improvement of Saline and Alkali soils, USDA, Handbook No. 60 pp146 2. AOAC-2.6.28, Method 980.02, 17 th edition, Determination of Sulphur in Fertilizer 3. Pakistan Standard Specification for Potassium Sulphate fertilizer grade, 2 nd Revision, PSQCA, Karachi, PS:1501-2011 (R) ICS: 65.080

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<p>11. Chloride in Fertilizer (Single or Mixed element, solid/liquid Fertilizer)</p>	<p>Chemical/Fertilizer Testing</p>	<p>Chloride in fertilizer by Titration method</p>	<p>1. Diagnosis and Improvement of Saline and Alkali soils, USDA, Handbook No. 60 pp146 2. AOAC-2.6.09, 17th edition, Method No. 928.02 Determination of chloride in Fertilizer 3. Pakistan Standard Specification for Potassium Sulphate fertilizer grade, 2nd Revision, PSQCA, Karachi, PS:1501-2011 (R) ICS: 65.080</p>
<p>12. Water Soluble Mg in Fertilizer (Single or Mixed element, solid/liquid Fertilizer)</p>	<p>Chemical/Fertilizer Testing</p>	<p>Water Soluble Magnesium Estimation</p>	<p>Testing Methods for Fertilizers (2016). Incorporated Administrative Agency. Food and Agricultural Materials Inspection Center. Japan. Page 229-230</p>

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