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Accreditation No: LAB 152

Awarded to

**Soil and Water Testing Laboratory for Research, Jhang Road,
opposite Rescue 1122, AARI, Faisalabad-38000, 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 **01-07-2021**.

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

01-03-2021
Date

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Director General

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Testing Laboratory.

**Soil and Water Testing Laboratory for Research, Jhang Road,
opposite Rescue 1122, AARI, Faisalabad-38000, 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
1. Ammonical Nitrogen in Fertilizer (Solid/ Liquid /Mixed liquid /Mixed Solid)	Chemical analysis	Ammonical Nitrogen in Fertilizer	SWTLF/SOP/036; Based on Official Methods of Analysis of AOAC International, 20 th Edition, 2016, Current Revision 4 th 2016. Method No. 2.4.10 (AOAC Official Method 892.01), Fertilizers Chapter 2 Subchapter 6, Page 15-16
2. Nitrate Nitrogen in Fertilizer (Solid /Liquid /Mixed liquid /Mixed Solid)		Nitrate Nitrogen in Fertilizer	SWTLF/SOP/036; Based on Official Methods of Analysis of AOAC International, 20 th Edition, 2016, Current Revision 4 th 2016. Method No. 2.4.10 (AOAC Official Method 892.01), Fertilizers Chapter 2 Subchapter 6, Page 15-16
3. Total Nitrogen in Fertilizer (Solid / Liquid)		Total Nitrogen in Fertilizer	SWTLF/SOP/036; Based on Official Methods of Analysis of AOAC International, 20 th Edition, 2016, Current Revision 4 th 2016. Method No.. 2.4.05 (AOAC Official Method 955.04), Fertilizers Chapter 2 Subchapter 6, Page 13-14
4. Uric Nitrogen in Fertilizer (Solid /Liquid /Mixed liquid /Mixed Solid)		Uric Nitrogen in Fertilizer	SWTLF/SOP/036; Based on Official Methods of Analysis of AOAC International, 20 th Edition, 2016, Current Revision 4 th 2016. Method No.. 2.4.05 (AOAC Official Method 955.04), Fertilizers Chapter 2 Subchapter 6, Page 13-14
5. Available Phosphorus in Fertilizer (Solid /Liquid /Mixed liquid /Mixed Solid)		Citrate soluble Phosphorus in Fertilizer	SWTLF/SOP/037; Based on Pakistan Standard for Single super Phosphate (2 nd Edition) PS:67-1996. Pakistan Standard & Quality Control Authority, Karachi.

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6.Total Phosphorus in Fertilizer (Solid /Liquid)		Total Phosphorus in Fertilizer	SWTLF/SOP/037; Based on Pakistan Standard for Single super Phosphate (2 nd Edition) PS:67-1996.Pakistan Standard & Quality Control Authority, Karachi.
7.Available Potassium in Fertilizer (Solid /Liquid /Mixed liquid /Mixed Solid)	Chemical analysis	Available Potassium in Fertilizer	SWTLF/SOP/038; Based on Standard Operating and Service Manual of Flamephotometer PFP7, Section 3, P 11-13.
8.Total Potassium in Fertilizer (Solid /Liquid)		Total Potassium in Fertilizer	SWTLF/SOP/038; Based on Standard Operating and Service Manual of Flamephotometer PFP7, Section 3, P 11-13.
9.Zinc in Fertilizer (Solid /Liquid /Mixed liquid /Mixed Solid)		Zinc in Fertilizer	SWTLF/SOP/039; Based on Official Methods of Analysis of AOAC International, 20 th Edition, 2016, Current Revision, 4, 2011. Method No. 2.6.31 (AOAC Official Method 975.02), Fertilizers, Chapter2, Subchapter 6, Page 40
10.Boron in Fertilizer (Solid /Liquid /Mixed liquid /Mixed Solid)		Boron in Fertilizer	SWTLF/SOP/041; Based on Official Methods of Analysis of AOAC International, 20 th Edition, 2016, Current Revision, 3, 2006. Method No. 2.6.04 (AOAC Official Method 982.01), Fertilizers Chapter 2, Subchapter 6, Page 31.
11.Humic Acid in Fertilizer(Solid /Liquid)		Humic acid in Fertilizer	SWTLF/SOP/047; Based on F J. Stevenson, J. Environ. Quality, 1972, Vol 1, page 333
12.Chelated micronutrients (Zinc, Iron, Copper, Manganese) in Fertilizer (Solid / Liquid)		Chelated micronutrients (Zinc, Iron, Copper, Manganese) in Fertilizer	SWTLF/SOP/040, Official Methods of Analysis of AOAC International, 20th Edition, 2016, Current Revision, 4th, 2016. Method No. 2.6.01 (AOAC Official Method 965.09), Fertilizers Chapter 2, Subchapter 6, Page 29-30
13. Organic matter / Waste compost (Solid /Liquid /Mixed liquid /Mixed Solid)		Organic matter/C:N/CEC in Fertilizer	SWTLF/SOP/045; Based on Official methods of Analysis of AOAC International, 20 th Ed., 2016, Method No. 2.7.08 (AOAC Official Method 967.05), fertilizer, Chapter 2, Subchapter 7, page 54
14. Iron in Fertilizer (Solid /Liquid /Mixed liquid /Mixed Solid)		Iron in Fertilizer	SWTLF/SOP/043; Based on Official Methods of Analysis of AOAC International, 20 th Edition, 2016, Current Revision, 4, 2016. Method No. 2.6.15 (AOAC Official Method 980.01), Fertilizers, Chapter2, Subchapter 6, Page 35.

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15. Copper in Fertilizer (Solid /Liquid /Mixed liquid /Mixed Solid)		Copper in Fertilizer	SWTLF/SOP/042; Based on Official Methods of Analysis of AOAC International, 20 th Edition, 2016, Current Revision, 4, 2016. Method No. 2.6.11 (AOAC Official Method 975.01), Fertilizers, Chapter2, Subchapter 6, Page 33
16. Manganese in Fertilizer (Solid /Liquid /Mixed liquid /Mixed Solid)	Chemical analysis	Manganese in Fertilizer	SWTLF/SOP/044; Based on Official Methods of Analysis of AOAC International, 20 th Edition, 2016, Current Revision, 4, 2016. Method No. 2.6.25 (AOAC Official Method 972.03), Fertilizers, Chapter2, Subchapter 6, Page 38.
17. Sulphur in fertilizer (Solid /Liquid /Mixed liquid /Mixed Solid)		Sulphur in Fertilizer	SWTLF/SOP/048, based on Pakistan Standard specifications For Potassium Sulphate Fertilizer Grade (2nd Revision)PS:1501-2011 (R ICS:65.080) page 10-11, PSQCA. Karachi.
18. Amino acid in fertilizer (Solid /Liquid)		Amino Acid in Fertilizer	SWTLF/SOP/046, based on FAO nutritional studies No. 24(1970) amino acid content of food and biological data on proteins FAO Rome
19. Bio Organic Phosphorus (BOP) (Solid)		Organic matter & Total Phosphorus in Fertilizer	SWTLF/SOP/037; Based on Pakistan Standard for Single super Phosphate (2 nd Edition) PS:67-1996. Pakistan Standard & Quality Control Authority, Karachi. (Total Phosphorus) and SWTLF/SOP/045; Based on Official methods of Analysis of AOAC International, 20 th Ed., 2016, Method No. 2.7.08 (AOAC Official Method 967.05), fertilizer, Chapter 2, Subchapter 7, page 54 (Organic matter contents).
20. Chloride in fertilizers (Solid /Liquid)		Chloride in Fertilizer	SWTLF/SOP/049, based on Pakistan Standard specifications For Potassium Sulphate Fertilizer Grade ,(2nd Revision) PS:1501-2011 (RICS:65.080) page: 7-8, PSQCA. Karachi
	Chemical analysis		

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