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Accreditation No: LAB 101

Awarded to

**TARA LABORATORIES,
CHUNNIA BYPASS ROAD RAIWIND, 28-KM THOKAR NIAZ
BAIG, LAHORE**

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 **23-02-2016** 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 **21-04-2025**.

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

08-02-2023
Date

SD
Director General

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Testing Laboratory.

ACCREDITATION SCOPE OF TARA LABORATORIES, RAIWIND, LAHORE, 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
Fertilizer	Chemical Testing	Phosphate (P ₂ O ₅)	TARALABS/STM-001 Based on Standard Method of Chemical Analysis. Vol. I. London: Forgotten Books, 2013.
Fertilizer	Chemical Testing	Potash (K ₂ O)	TARALABS/STM-002 Based on Food And Agricultural Materials Inspection Center (FAMIC), Japan, 2013.
Fertilizer	Chemical Testing	Zinc (Zn)	TARALABS/STM-003 Based on International Pharmacopoeia. WHO 2014.
Fertilizer	Chemical Testing	Nitrogen (N)	TARALABS/STM-004 Based On Merck KGaA, 64271, Darmstadt, Germany.
Insecticide	Chemical Testing	Acetamiprid	TARALABS/STM-005 Based on CIPAC UK
Insecticide	Chemical Testing	Carbofuran	TARALABS/STM-009 Based on Chemservice USA
Insecticide	Chemical Testing	Chlorfenapyr	TARALABS/STM-011 Based on CIPAC UK
Herbicide	Chemical Testing	Clodinafop-Propargyl	TARALABS/STM-012 Based on Chemservice USA

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Insecticide	Chemical Testing	Imidacloprid	TARALABS/STM-015 Based on California Department Of Food And Agriculture (Method No. Em12.7)
Insecticide	Chemical Testing	Nitenpyram	TARALABS/STM-019 Based on Chemservice USA
Insecticide	Chemical Testing	Monomehypo	TARALABS/STM-018 Based on Chemservice USA
Insecticide	Chemical Testing	Pyriproxyfen	TARALABS/STM-022 Based on Chemservice USA
Fungicide	Chemical Testing	Dinfenconazole	TARALABS/STM-013 Based on Chemservice USA
Herbicide	Chemical Testing	Metsulfuron Methyl	TARALABS/STM-017 Based on CIPAC UK
Fertilizer	Chemical Testing	Soluble Boron (B)	TARALABS/STM-025 Gaines and Mitchell. 1979, Commun. Soil Sci. Plant Anal. 10:1099-1109.
Fertilizer	Chemical Testing	Sulphate-Sulphur (SO ₄ -S)	TARALABS/STM-029 Based On Method-9038, EPA Publication SW-846, 2014
Insecticide	Chemical Testing	Triazophos	TARALABS/STM-054 Based on RESTEK USA 2014
Insecticide	Chemical Testing	Deltamethrin	TARALABS/STM-061 Based on CIPAC
Herbicide	Chemical Testing	Acetochlor	TARALABS/STM-038 Based on RESTEK USA 2014
Herbicide	Chemical Testing	Atrazine	TARALABS/STM-040 Based on CIPAC

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Herbicide	Chemical Testing	Metribuzin	TARALABS/STM-049 Based on CIPAC
Fungicide	Chemical Testing	Flusilazole	TARALABS/STM-048 Based on CIPAC
Fungicide	Chemical Testing	Metalaxyl	TARALABS/STM-056 Based on RESTEK USA 2014
Fungicide	Chemical Testing	Azoxystrobin	TARALABS/STM-060 Based on Journal of the Brazilian Chemical Society
Fungicide	Chemical Testing	Chlorothalonil	TARALABS/STM-066 Analysis of Chlorothalonil by Liquid Chromatography The Japan Society for Analytical Chemistry Analytical Sciences 2009, Vol. 25
Fertilizer and Pesticides	Chemical Testing	Moisture (Karl-Fischer Titrations)	TARALABS/STM-026 Based on International Fertilizer Industry Association 2014 and Operating Manual
Fertilizer and Pesticides	Physical Testing	Moisture (Free Water by Gravimetric Determinations)	TARALABS/STM-098 International Fertilizer Industry Association 2014
Emulsifiable Concentrate	Physical Testing	Emulsion	TARALABS/STM-030 Based on CIPAC
Wettable Powder and Water Dispersible Granules	Physical Testing	Suspensibility	TARALABS/STM-031 Based on CIPAC
Liquid Pesticide and Fertilizer Formulations	Physical Testing	Density	TARALABS/STM-042 Based on CIPAC
Fertilizer and Pesticides	Chemical Testing	pH	TARALABS/STM-093 USDA Hand Book No. 60, USA
Fertilizer	Chemical Testing	Magnesium (Mg)	TARALABS/STM-097 The International Pharmacopoeia. World Health

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			Organization, 2014
Insecticide	Chemical Testing	Cartap Hydrochloride	TARALABS/STM-010 Based on CIPAC
Insecticide	Chemical Testing	Fipronil	TARALABS/STM-071 Based on CIPAC
Insecticide	Chemical Testing	Dinotefuran	TARALABS/STM-089 Based on CIPAC
Herbicide	Chemical Testing	Carfentrazone Ethyl	TARALABS/STM-085 Analytical Method of Carfentrazone-ethyl By HPLC (Institute for the Control of Agrochemicals, Ministry of Agriculture, Beijing 100026)
Herbicide	Chemical Testing	Florasulam	TARALABS/STM-088 Australian Pesticides and Veterinary Medicines Authority 2007
Herbicide	Chemical Testing	S-Metolachlor	TARALABS/STM-023 Based on CIPAC
Insecticide	Chemical Testing	Flonicamid	TARALABS/STM-096 Based on FAO guidelines. http://www.fao.org/agphome/ documents/Evaluation2015/ FLONICAMID (282)
Fertilizer	Chemical Testing	Nitrate Nitrogen (NO ₃ -N)	TARALABS/STM-121 Olga C. Lastra. (2003) Derivative spectrophotometric determination of nitrate in plant tissue. Journal of AOAC International. 86 (6):1101-5
Soil Conditioner	Chemical Testing	Humic Acid	TARALABS/STM-120 ISO 19822:2018. Fertilizers and soil conditioners – Determination of humic and hydrophobic fulvic acids

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			concentrations in fertilizer materials.
Soil Conditioner	Chemical Testing	Organic Matter	TARALABS/STM-130 Ill.S Tandon, 2005, Method of analysis of Soil, waters, fertilizer & organic manures. 2nd edition, Fertilizer Development and consultation Organization, New Delhi (India)
Insecticide	Chemical Testing	Abamectin	TARALABS/STM-062 Based on Chem Service USA
Herbicide	Chemical Testing	Ametryn	TARALABS/STM-039 S., Jasmin et al (2011) Quantification of triazine herbicides in soil by microwave-assisted extraction and high performance liquid chromatography 178:111-119
Herbicide	Chemical Testing	Bensulfuron-methyl	TARALABS/STM-082 Based on Chem Service USA
Insecticide	Chemical Testing	Betacyfluthrin	TARALABS/STM-099 Based on Chem Service USA
Herbicide	Chemical Testing	Bispyribac Sodium	TARALABS/STM-007 Based on Chem Service USA
Insecticide	Chemical Testing	Chlorantraniliprole	TARALABS/STM-122 Based on Chem Service USA
Herbicide	Chemical Testing	Cyhalofop-butyl	TARALABS/STM-103 Based on Chem Service USA
Insecticide	Chemical Testing	Emamectin Benzoate	TARALABS/STM-068 Based on Chem Service USA
Herbicide	Chemical Testing	Halosulfuron-methyl	TARALABS/STM-072 S. Ishimitsu, "Simultaneous determination of

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			azimsulfuron, flazasulfuron and halosulfuron-methyl in grains, seeds, vegetables and fruits by HPLC," Journal of Health Science, vol. 48, no. 4, pp. 335–340, 2002.
Herbicide	Chemical Testing	Mesosulfuron-methyl	TARALABS/STM-124 Based on Chem Service USA
Herbicide	Chemical Testing	Mesotrione	TARALABS/STM-065 Based on Chem Service USA
Insecticide	Chemical Testing	Spirotetramate	TARALABS/STM-119 Singh et al.: Journal of AOA C International Vol. 96, No. 3, 2013
Insecticide	Chemical Testing	Thiamethoxam	TARALABS/STM-078 Based on Chem Service USA
Herbicide	Chemical Testing	Cloquintocet Mexyl	TARALABS/STM-006 Zhigang Shen; Wentao Zhu; Xinyuan Xu; Zhiqiang Zhou; Donghui Liu (2012). <i>Direct chiral resolution of cloquintocet-mexyl and its application to in vitro degradation combined with clodinafop-propargyl.</i> , 26(9), 0–0.
Insecticide	Chemical Testing	Clothianidin	TARALABS/STM-106 Chen, M.-F.; Huang, J.-W.; Wong, S.-S.; and Li, G.-C. (2005) "Analysis of insecticide Clothianidine and its metabolites in rice by liquid chromatography with a UV detector," Journal of Food and Drug Analysis: Vol. 13: Iss. 3, Article 2.
Fungicide	Chemical Testing	Cymoxnil	TARALABS/STM-055 Paola Fidente; Carmen Di Giovanni; Serenella Seccia; Patrizia Morrica (2005). Determination of cymoxanil in drinking water and soil using high-performance liquid chromatography. , 19(10), 766–770.

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Insecticide	Chemical Testing	Diafenthiuron	TARALABS/STM-070 Stanley, Johnson; Chandrasekaran, Subramanian; Preetha, Gnanadhas; Kuttalam, Sasthakutty; Jasmine, R. Sheeba (2014). Estimation of Diafenthiuron Residues in Cardamom (Elettaria cardamomum (L.) Maton) Using Normal Phase HPLC: Dissipation Pattern and Safe Waiting Period in Green and Cured Cardamom Capsules. Chromatography Research International, 2014(), 1– 8. doi:10.1155/2014/289747
Herbicide	Chemical Testing	Iodosulfuron Methyl	TARALABS/STM-074 Andreja Drolc; Albin Pintar (2011). Measurement uncertainty evaluation and in-house method validation of the herbicide iodosulfuron-methyl-sodium in water samples by using HPLC analysis. , 16(1), 21–29
Fungicide	Chemical Testing	Pyraclostrobin	TARALABS/STM-114 Rao et al Development and validation of a HPLC-UV Method for simultaneous determination of Strobilurin Fungicides residues in tomato fruits followed by Matrix Solid Phase Dispersion; Indian J. Sci. Res. 3(1) : 113-118,2012
Herbicide	Chemical Testing	Pyrazosulfuron Ethyl	TARALABS/STM-037 Yan, Rui; Ju, Fulong; Wang, Haoyu; Sun, Changhua; Zhang, Hanqi; Shao, Mingyuan; Wang, Yuzhi (2014). Determination of sulfonylurea herbicides in soil by ionic liquid-based ultrasonic- assisted extraction high- performance liquid chromatography. Anal. Methods, 6(24), 9561–9566
Fungicide	Chemical Testing	Tebuconazole	TARALABS/STM-115 S. M. Mohd <i>et al.</i> High Temperature High Performance Liquid Chromatography of Triazole,Fungicides on Carbon- Clad Zirconia Stationary Phase: Malaysian Journal of Chemistry,

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			2004, Vol. 6, No. 1, 055 - 066
Insecticide	Chemical Testing	Chlorpyrifos	TARALABS/STM-044 Mauldin, Richard E.; Primus, Thomas M.; Buettgenbach, Theresa A.; Johnston, John J.; and Linz, G. M., "A Simple HPLC Method for the Determination of Chlorpyrifos in Black Oil Sunflower Seeds " (2006). USDA National Wildlife Research Center - Staff Publications. 424
Herbicide	Chemical Testing	Fluoxpyr Meptyl	TARALABS/STM-014 Zhong, Mengmeng; Wang, Tielong; Dong, Bizhang; Hu, Jiye (2015). QuEChERS-based study on residue determination and dissipation of three herbicides in corn fields using HPLC-MS/MS. Toxicological & Environmental Chemistry, 1–10
Insecticide	Chemical Testing	Lambdacyhalothrin	TARALABS/STM-064 Z. Aslam <i>et al</i> Method development, validation and calculation of uncertainty for the determination of lambdacyhalothrin from commercial formulations through reverse-phase liquid chromatographic approach; J Agric. Res., 2021, Vol. 59(3):271-278
Insecticide	Chemical Testing	Lufenuron	TARALABS/STM-073 George E Miliadis; Nicholas G Tsiropoulos; Pipina G Aplada-Sarlis (1999). High-performance liquid chromatographic determination of benzoylurea insecticides residues in grapes and wine using liquid and solid-phase extraction. , 835(1-2), 113–120
Herbicide	Chemical Testing	MCPA Isooctyl	TARALABS/STM-016 Hu, Jiye; Yang, Tao; Yin, Shaoyin; Cao, Di (2012). Dissipation and residue of MCPA (4-chloro-2-ethylphenoxyacetate) in wheat and

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			soil. Environmental Monitoring and Assessment, 184(8), 5017–5024
Insecticide	Chemical Testing	Pymetrozine	TARALABS/STM-076 Xun, Qian; Cuijuan, Guo; Li, Wang; Shaojun, Zhang Analysis of 80% Pymetrozine * Nitenpyram WG by HPLC; Plant diseases and Pests 2018, (9) (1): 38-40
Insecticide	Chemical Testing	Tebufenozide	TARALABS/STM-069 K.M.S. Sundaram; R. Nott (1995). Simultaneous determination of tebufenozide and five of its intact metabolites from forestry matrices by high-performance liquid chromatography. , 708(1), 71–81
Fungicide	Chemical Testing	Thiophenate Methyl	TARALABS/STM-079 Ye, Cunling; Zhou, Qingxiang; Wang, Xinming (2008). Determination of thiophanate-methyl and chlorotoluron in water samples by improved single-drop microextraction coupled with high-performance liquid chromatography. International Journal of Environmental Analytical Chemistry, 88(7), 461–471
Pesticides	Physical Testing	Viscosity	TARALABS/STM-090 CIPAC MT 22
Pesticides	Physical Testing	Wetting time	TARALABS/STM-028 CIPAC MT 53.3
Toxicology Studies	Physical Testing	Acute Dermal Irritation Test	TARALABS/STM-128 OECD (2002), Test no 404: Acute Dermal irritation/Corrosion, OECD Publishing, Paris.
Toxicology Studies	Physical Testing	Acute Eye Irritation Test	TARALABS/STM-125 OECD (2017), Test no 405: Acute Eye irritation/corrosion, OECD Guidelines for testing of

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			chemicals, Section 4, OECD Publishing, Paris
Toxicology Studies	Physical Testing	Acute Dermal Toxicity Test	TARALABS/STM-126 OECD (2017), Test no 402: Acute Dermal toxicity, OECD Guidelines for testing of chemicals, Section 4, OECD Publishing, Paris.
Toxicology Studies	Physical Testing	Acute Oral Toxicity Test	TARALABS/STM-127 OECD (2008), Test no 425: Acute Oral toxicity: UP-and-Down Procedure, Guidelines for testing of chemicals, Section 4, OECD Publishing, Paris.
Toxicology Studies	Physical Testing	Skin Sensitization Test	TARALABS/STM-129 Buehler E.V. (1965). Delayed contact hypersensitivity in the guinea pig. Arch. Dermatol., 91, 171
Toxicology Studies	Physical Testing	Acute Inhalation Toxicity Test	TARALABS/STM-133 OECD (2017), Test no 433: Acute Inhalation toxicity: Fixed Concentration Procedure, Guidelines for testing of chemicals, Section 4, OECD Publishing, Paris
Leaves/Seeds	Chemical Testing	GMO TESTING (CaMV35S Promoter & NOS- terminator	TARALABS/STM-138 Based on ISO-21569 and 21571

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