Issue date: 14 May 2025
Valid Until: -

NO: SAMM 224

LABORATORY LOCATION/ CENTRAL OFFICE:	MARDILab, MARDI Ibu Pejabat Mardi, Persiaran Mardi-Upm, 43400 Serdang, Selangor, Malaysia , 43400, SELANGOR MALAYSIA
ACCREDITED SINCE :	14 MAY 2025
FIELD(S) OF TESTING:	CHEMICAL

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

CENTRAL LOCATION:	MARDILab, MARDI Ibu Pejabat Mardi, Persiaran Mardi-Upm, 43400 Serdang, Selangor, Malaysia , 43400, Selangor
FIELD(S) OF TESTING :	CHEMICAL,

SCOPE OF TESTING : CHEMICAL

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Agricultural Products And	None	Malaysian Standard (1994),
	None	None
	None	None
	None	None
	None	None
	Phosphorus (as %	In-House Method Ref. No.
	None	None
	None	None
	None	None
	None	None
	None	None
	Arsenic (as As)	None
	Moisture	In-house Method UHW02-02-1

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Total Potassium	In-house Method UHW02-06-1
	None	None
	None	None
	Moisture	MS 417: Part 2 :1994 (Oven Drying
	Total Magnesium (as MgO)	MS 417-6:2020, Clause 6.1, Method
	Moisture	MS 417: Part 2 : 1994 (Oven Drying
	Moisture	MS 417: Part 2 :1994 (Oven Drying
	Total Phosphorous (as	In-house Method, Ref. No. F3,
Agricultural Products And Materials	None	107- 06-2-D.
	None	Fibre Tec 2010.
	None	None
	Method of Sample Preparation	In-house Method ID T001-S based on MS 678: Part 1: 1980
	Sample preparation	MS 677: Part I(a):1980
	Ashing and Preparation of Ash Solution	MS 677: Part
	Nitrogen (N)	MS 677: Part
	None	None
	Nitrogen Ammoniacal Nitrogen -	MS 417:Part 3: 1994 Clause 5
	None	None
	None	None
Animal Feed	None	None
	None	None
	None	None
	None	None
	None	None
	None	None
	Salmonella sp	OIE Manual of Diagnostic Tests &
	Crude Fat	MS 1416 : 1997
	Protein Content	AOAC Official Method 2001.11
	Moisture	MS ISO 6496:2003
	Protein (Crude)	AOAC 2001.11
	Crude Ash	ISO 5984:2022
	Crude Protein and Total	ISO 1871:2009
Fertilizer (solid)	None	None
Foliar	None	None
	Total Nitrogen	In-house method, TM GA-FL02001,
	Magnesium (as Mg)	In-house method, TM GA-FL-02003,
Food & Agriculture Products	Nitrogen (Combustion method)	933.13 (41.1.39) 17th. Edition, Year 2012, Volume II, Chapter 41, page 45

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Food & Food Products	None	Keith Ito, 4th Edition America Public Health Association, Washington D.C
	None	D23B/7(c1), D23B/7(c2), D23B/7(c3)
	Aerobic Plate Counts	FDA-BAM Chapter 3 (2001)
Foods & Foods Products	Ash	D23A/M17:AOAC Official Method of Analysis (2012), 19th Edition,
Foods & Foods Products (continued)	None	In-house method D23A/M6TS based on AOAC Official Methods of
	None	b) Autotitrator
	None	D23A/M13TDF AOAC Official Method 985.29 a) Tecator Manual - AN 302
Honey	None	D23A/M21: Analytical Chemistry of
	Chloramphenicol	In-house Method MOH D03-009
	Moisture	In-house Method No: STP/Honey/01-
	Chloramphenicol	5 International Symposium on Hormone and Veterinary Drug
	Chloramphenicol	In-House Method, Ref. No. MOH
	Determination of	JKM F 0927: Malaysian Standard
	Determination of Moisture in	JKM F 0933 based on MS
	None	None
	None	None
	None	based on Romer-™s Elisa Method
	Chloramphenicol	In-house Method, Ref. No. MOH:
	Sulphonamide:	In-house Method, Ref. No. MOH:
	Macrolides: Erythromycin (ERY) Lincomycin (LINCO) Tylosin (TYL)	In-house Method, Ref. No. MOH D03- 026. Based Agilent Tech. on Application Note. Pub. No. 5991 3190N.LCMS/MS.
	Chloramphenicol	In-house Method, Ref. No. MOH D03-
	Acidity	Honey, MAFF Validated Method V19, April 1992
	Fructose, Glucose, Sucrose, Maltose	AOAC 977.20, 2006
	Amphenicols	In-house Method, Ref. No. MOH
Materials	None	4995}, Method 955-04 and
	Total Nitrogen	Based CN on Nitrogen in Fertilizer Application
	None	None
	None	None
	None	None
	None	(HPLC-UV or UHPLC-UV)
	None	None

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	None	None
	None	None
	None	Based on:
	None	None
	None	None
	None	None
	None	None
	None	None
	None	None
	None	None
	None	None
	None	None
	None	based on MS 417: Part 2: 1994 (First
	Vickers Hardness 1 gf to 30 kgf	E384-2017
	(0.1 kgf and 1 kgf load)	None
	ii Lead (Pb)	on BS EN 14084:2003
	None	based on MS 417: Part 3: 2020,
	None	Analysis: The Johan Kjeldahl
	None	based on MS 417: Part 3: 2020,
	N)	Analysis: The Johan Kjeldahl
	None	based on MS 417 Part 7:2020,
	Fertilizers	None
	None	None
	Vickers Hardness 1 gf to 30 kgf	E384-2017
	(0.1 kgf and 1 kgf load)	None
	Volume Resistance or Resistivity	ANSI/ESD STM 11.12-2015
	None	None
	None	Method)
	None	Based on MS 417: Part 2 : 1994
	None	1: Atomic Absorption
	None	Method)
	None	Based
	None	on MS 417-3: 2020, Clause 12,
	None	Based on MS 417-4: 2020, Clause
Oils And Fats	Cholesterol	by Direct Saponification and Capillary & GC and AOAC Official
	Acidity /Acid Value /F.F.A.	AOCS Ca 5a-40 (1993)
	Iodine Value	AOCS Cd Id-92 (1993)
	Fat	In-house method LWI-MOF 022
Seafood	Sodium Chloride	c) AOAC Official Method of Analysis 937.07 (35.1.01),
	None	test kit
	Cadmium (Cd)	AOAC 999.10
	None	on Competitive Enzyme
	Total Volatile Basic Nitrogen	In-house method, CL/FD/009, based
	Zinc	None

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	None	None
	None	None
	Tin e	None
	None	None
	None	None
	None	None
	None	None
	None	None
	Fluoroquinolone and Quinolone:	In-house method, SGS-TM-FOOD-
	Salmonella spp.	None
Soil	Moisture	Analysis, 2012. Loss on Drying (Moisture) in Peat. AOAC Official
	pH	MS 678:Part : 1980 (Ref. No.: S2)
	Conductivity	MS 678:Part VI : 1980 (Ref. No.: S3)
	Exchangeable Cations (Ca, Mg, K, Na)	n-house Method (Ref.No.: S8) based-on MS 678: Part IV:1980 and
	pH	Determination of soil reaction (pH),
	None	EHP Detection Kit Instruction Manual
	Determination of Moisture Content	BS 1377-2: 1990 Clause 3.2
	pH	In-house method TM-CR-03-005
	Particle Density Determination by	BS 1377: Part 2: 1990: clause 8.3
	Mechanical Analysis (Clay, Silt, Fine & Coarse Sand)	In-house method (Ref. No. S1) based on The Bouyoucos Hydrometer method for Particle Size Analysis, Texas A&M University System
	pH	MS 2457 : 2012
	Conductivity (Cond.)	MS 2458 : 2012
	Organic Carbon (Org. C)	MS 2459 : 2012
	Total Nitrogen (N)	MS 678 : Pt. to 1980, Part II
	Phosphorus (Available)	In-house method (Ref. No. S2) based on J. Sci. Fd. Agric. Vol. 21, 275-278 and MS 678: Pt. VI to IX:
	Sample Preparation	In-house Method ITC/TM/S01 based on MS 678: Part 0: 1980
	pH	MS 2457: 2012
	Nitrogen	MS 678: Part II: 1980- (a)
	Organic Carbon	MS 2469: 2012
	Total Phosphorus	In-house Method based on MS 678: Part VIII: 1980

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Available Phosphorus	In-house Method ITC/TM/S08 based on A laboratory manual of methods of Soil Analysis research Branch Agriculture Department Sarawak 1993, clause 19
	Exchangeable Cations (K,Mg,Ca)	In-house Method ITC/TM/S06 based on MS 678: Part IV: 1980
	Cation Exchange Capacity	In-house Method ITC/TM/S07 based on MS 678: Part V: 1980
	Particle Size Analysis	In-house Method ITC/TM/S10 based on ASA-SSSA, Methods of Soil Analysis 1986, Part 1, Chapter 15
	Determination of In-situ Density	BS 1377: Part 9: 1990
	2.5 kg Rammer	BS 1377-2:2022
	Clay, Silt, Fine Sand &	In-house Method, S1, Based on
	Phosphorus (total)	In-house Method, S5, Based on MS 678:Pt. VI to IX:1980, Part VIII
	Phosphorus (total)	In-house Method, S6, Based on MS 678:Pt. VI to IX:1980, Part VIII and QuikChem® Method 12-115-01-1-N
	Cation Exchange Capacity (C.E.C)	MS 678:Pt. to V:1980, Part V
	Cation Exchange Capacity (C.E.C)	In-house Method, S7, Based on MS 678:Pt. to V:1980, Part V and QuikChem® Method 13-107-06-2-D
	Total Exchangeable Bases: Potassium (K)	MS 678:Pt. to V:1980, Part IV (Flame photometry)
	Total Exchangeable Bases: Potassium (K)	In-house Method, S8, Based on MS 678:Pt. to V:1980, Part IV and QuikChem® Method 12-119-03-1-C
	Sodium (Na)	In-house Method, S9, Based on MS 678:Pt. to V:1980, Part IV
	Calcium (Ca)	MS 678:Pt. to V:1980, Part IV (Atomic Absorption Spectrophotometry)
	Magnesium (Mg)	MS 678:Pt. to V:1980, Part IV (Atomic Absorption Spectrophotometry)
	Determination of Particle Size	Part 2: MS 1056 2013 Section 10.2
	Mechanical Analysis (Clay, Silt, Fine & Coarse Sand)	In-house Method, Ref. No. S1, Based on The Bouyoucos Hydrometer Method for Particle Size Analysis,
	Arsenic (As)	None

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Determination of Electrical Conductivity in Soil Sample	In-House Method P702-07 base on MS 2458:2012
	Moisture Content Test - Oven Drying Method	MS 1056: Part 2: 2005
	Liquid Limit Test - Casagrande Method	MS 1056: Part 2: 2005
	Liquid Limit Test - Cone Penetrometer Method	MS 1056: Part 2: 2005
	Plastic Limit Test	MS 1056: Part 2: 2005
	Plasticity Index	MS 1056: Part 2: 2005
	Linear Shrinkage	MS 1056: Part 2: 2005
	Specific Gravity- Small Pyknometer Method	MS 1056: Part 2: 2005
	Particle Size Distribution -" Wet Sieving Method	MS 1056: Part 2: 2005
	Sedimentation -" Hydrometer Method	MS 1056: Part 2: 2005
	Compaction Test	MS 1056: Part 4: 2005 (Clause 4.2, 4.5, 4.6)
	Determination of pH value	BS 1377 : Part 3: 1990, Clause 9
	Determination of chloride content	BS 1377 : Part 3: 1990, Clause 7
	Determination of sulphate content	BS 1377 : Part 3: 1990, Clause 5 (Gravimetric)
	Determination of organic matter content	BS 1377 : Part 3: 1990, Clause 3
	Determination of moisture content	BS 1377 : Part 2: 1990, Clause 3.2
	Determination of particle size distribution	BS 1377 : Part 2: 1990, Clause 9.3
	Determination of In-situ Density and Moisture Content	Soils for Civil Engineering Purposes, BS 1377:1990, Part 9: Clause 2.1-Sand Replacement
	Determination of In-situ Density and Moisture Content	Soils for Civil Engineering Purposes, BS 1377:1990,
	Moisture Content	BS 1377: Part 2: 1990, Clause 3.2.4
	Moisture Content	BS 1377: Part 2: 1990, Clause 3.2
	Particle Size Distribution	BS 1377: Part 4: 1990, Clause 9.5
	Field Density Test: Core Cutter	BS 1377: Part 9: 1990, Clause 2.4
	Determination of Moisture	BS 1377:Part 2:1990 Clause 3.2
	Particle Size Distribution	BS 1377: Part 2: 1990, Clause 9.2 & 9.3
	Moisture Content	BS 1377: Part 2: 1990, Clause 3.2
	California Bearing Ratio (Soaked)	BS 1377: Part 4: 1990, Clause 7
	Dry Density / Moisture Content Relationship (4.5 kg Rammer Method)	BS 1377: Part 4: 1990, Clause 3.6
	Liquid Limit (Casagrande Apparatus Method)	BS 1377: Part 2: 1990, Clause 4.5

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	None	Part 2: BS 1377 1990, Clause 5.3 & 5.4
	Dry Density / Moisture Content	Part 4: MS 1056 2005, Clause 4.5 & 4.6
	Dry Sieving Method	MS 1056 Part 2 : 2005, Clause 10.3 Part 2 : 1990, Clause 9.3 BS 1377
	Determination of Moisture Content	BS 1377: Part 2: 1990 Clause 3.2
	Moisture Content	BS 1377 Part 2: 1990 : Clause 3.2
	Liquid Limit (Cone Penetrometer Method)	BS 1377 Part 2: 1990 : Clause 4.3
	In-situ Density Test by Sand	None
	pH	MS 2457: 2012
	Electrical Conductivity	MS 2458: 2012
	Available Phosphorus	In-house method S07 based on Bray & Kurtz, 1945 & ICP-OES
	Total Nitrogen	MS ISO 13878: 2014
	Total Phosphorus	In-house method S13 based on EPA Method 3050B & ICP-OES
	Determination of Particle Density (Small Pyknometer Method)	BS 1377:1990 Part 2, Clause 8.3
	Determination of Particle Size Distribution (Dry Sieving Method)	BS 1377:1990 Part 2, Clause 9.3
	Determination of Particle Size Distribution (Wet Sieving Method)	BS 1377:1990 Part 2, Clause 9.2
	Determination of Particle Size	None
	Determination of Water Content	BS 1377: Part 2
	Determination of pH value of fine	BS 1377-3: 2018
	Determination of Soil pH	MS 678: Part - V: Part |, Soil pH:
	None	None
	Total Recoverable Elements	USEPA 200.2 Rev. 2 : 8 EMMC
	Chloride	MS 678: Part VI to
	In-situ Density Test	BS 1377: Part 9:1990 Clause 2.1
	Moisture Content	BS EN ISO 17892-1:2014
	Particle Size Distribution -" Wet	BS EN ISO 17892-4:2016
	Arsenic, Mercury, Cadmium,	EPA 3050 B
	Loss on Ignition	BS 1377 part 3: 1990 (Clause 4)
	Carbonate	BS 1377 Part 3: 1990 (Clause 6.3)
	Moisture Content	BS 1377-1: 2016
	In-situ California Bearing Ratio (CBR)	BS 1377 : Part 9 : 1990 Clause 4.3
	Moisture Content	BS 1377-1: 2016
	In-situ California Bearing Ratio (CBR)	BS 1377 : Part 9 : 1990 Clause 4.3
	pH Value	BS 1377-3:1990:9.5
	None	None
	Aluminum (Al)	USEPA 200.2, Revision 2.8, 1994
	Particle Size Distribution (gravel,	In House Method 0588 based on

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Determination of Particle Size Distribution for Soils	BS 1377: Part 2: 1990 Clause 9
	Determination of Moisture Content	BS 1377: Part 2: 1990 Clause 3.2
	Determination of the Liquid Limit (Casagrande apparatus method)	BS 1377: Part 2: 1990 Clause 4.5
	Determination of the Plastic Limit and Plasticity Index	BS 1377: Part 2: 1990 Clause 5
	Determination of dry density/moisture content relationship (Rammer Method)	BS 1377: Part 4: 1990 Clause 3.3, 3.4, 3.5 & 3.6
	Determination of dry density/moisture content relationship (Vibrating Hammer Method)	BS 1377: Part 4: 1990 Clause 3.7
	Determination of soil density test	BS 1377: Part 2: 1990 Clause 7
	Determination of The Moisture	BS 1377: Part 2:1990: Method 3.2
	Determination of In-Situ Density	BS 1377: Part 9: 1990
	Determination of The Moisture	BS 1377: Part 2:1990: Method 3.2
	Toxicity characteristic leaching	USEPA 1311: 1992
	Phosphorus, P Sulphur, S	None
	SVOCs (Refer to Appendix 2 and 3 for	EPA Method 3510C: 1996
	Determination of Moisture Content	BS 1377:2:1990, Clause 3.2 MS 1056:2:2005, Clause 4.2
	Determination of Density	BS 1377:2:1990, Clause 7.2 MS 1056:2:2005, Clause 8.2
	Linear Shrinkage	BS 1377:2:1990, Clause 6.5 MS 1056:2:2005, Clause 7.5
	Determination of Particle Density	BS 1377:2:1990, Clause 8.3 MS 1056:2:2005, Clause 9.3
	Determination of Liquid Limit Using Casagrande Method	BS 1377:2:1990, Clause 4.5 & 4.6 MS 1056:2:2005, Clause 5.5 & 5.6
	Determination of Liquid Limit Using Cone Penetrometer Method	BS 1377:2:1990, Clause 4.3 & 4.4 MS 1056:2:2005, Clause 5.3 & 5.4
	Determination of the Plastic Limit	BS 1377:2:1990, Clause 5
	Maximum dry density / Moisture content relationship	BS 1377: Part 4: 1990
	Shear Strength Test without	None
	The laboratory Vane e	BS 1377: Part 7: 1990: Clause 3
	Field Density Test (Sand Replacement Method)	BS 1377: Part 9:1990 Clause 2.1
	Plastic limit test	Test instruction reference to BS
	Moisture content	BS1377-2, Clause 4.1
Tongkat Ali (eurycoma Longifolia Root)	Eurycomanone	Journal of Pharmaceutical Research, 13(5), 801-807

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