

NO: SAMM 987

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LABORATORY LOCATION:  
(PERMANENT LABORATORY)

**CHEMISTRY LABORATORY**  
**APPLIED AGRICULTURAL RESOURCES SDN. BHD.**  
 NO. 11, JALAN TEKNOLOGI 3/6  
 TAMAN SAINS SELANGOR 1  
 KOTA DAMANSARA, 47810 PETALING JAYA  
 SELANGOR  
 MALAYSIA

FIELD 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).

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Straight Fertiliser / Compound Fertiliser / Compacted Fertiliser / Fertiliser Mixture / Controlled / Slow Released Fertiliser	Preparation of Sample for Analysis	In-house Method (FTM/PR/01) Clause 5.1 based on MS 417: Part 1: 2017
	Moisture	In-house Method (FTM/PR/02) based on MS 417: Part 2 (Clause 3): 1994 (Oven Method)
	Particle Sizes	In-house Method (FTM/PR/03) based on MS 417: Part 2 (Clause 4): 1994
	Ammonium-Nitrogen (NH <sub>4</sub> <sup>+</sup> N)	In-house Method (FTM/PR/04) based on MS 417: Part 3 (Clause 5): 1994
	Nitrate-Nitrogen (NO <sub>3</sub> <sup>-</sup> N)	In-house Method (FTM/PR/05) based on MS 417: Part 3 (Clause 6): 1994
	Urea-Nitrogen (Urea-N)	In-house Method (FTM/PR/06) based on MS 417: Part 3 (Clause 7): 1994
	Total Nitrogen (Total N)	In-house Method (FTM/PR/07) Clause 8.4.1 – 8.4.12 based on MS 417: Part 3 (Clause 11): 1994
	Total Phosphorus (as P <sub>2</sub> O <sub>5</sub> )	In-house Method (FTM/PR/08) Clause 8.1 – 8.2 based on MS 417: Part 4 (Clause 5): 1994

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Straight Fertiliser / Compound Fertiliser / Compacted Fertiliser / Fertiliser Mixture / Controlled / Slow Released Fertiliser (Continued)	Water Soluble Phosphorus (as Water Soluble P <sub>2</sub> O <sub>5</sub> )	In-house Method (FTM/PR/09) based on MS 417: Part 4 (Clause 6): 1994
	Citric Acid Soluble Phosphorus (as Citric Acid Soluble P <sub>2</sub> O <sub>5</sub> )	In-house Method (FTM/PR/10) based on MS 417: Part 4 (Clause 7): 1994
	Formic Acid Soluble Phosphorus (as Formic Acid Soluble P <sub>2</sub> O <sub>5</sub> )	In-house Method (FTM/PR/11) based on MS 417: Part 4 (Clause 9): 1994
	Total Potassium (as K <sub>2</sub> O)	In-house Method (FTM/PR/12) Clause 8.1 - 8.2 based on MS 417: Part 5: 1994
	Total Magnesium (as MgO)	In-house Method (FTM/PR/13) Clause 8.1 - 8.3 based on MS 417: Part 6: 1994
	Total Boron (as B <sub>2</sub> O <sub>3</sub> )	In-house Method (FTM/PR/15) based on MS 417: Part 7: 2001 (Azomethine Method)
	Sulphate (as S)	In-house Method (FTM/PR/16) based on MS 417: Part 8 (Clause 13): 1997 (Amd 1, 2001)
	Total Copper (as Cu)	In-house Method (FTM/PR/17) based on AOAC: 2012 (975.01) (Atomic Absorption Spectrometric Method)
	Total Zinc (as Zn)	In-house Method (FTM/PR/18) based on AOAC: 2012 (975.02) (Atomic Absorption Spectrometric Method)
	Total Iron (as Fe)	In-house Method (FTM/PR/19) based on AOAC: 2012 (980.01) (Atomic Absorption Spectrometric Method)
	Total Calcium (as CaO)	In-house Method (FTM/PR/21) Clause 8.1 based on MS 417: Part 8 (Clause 11): 1997
pH	In-house Method (FTM/PR/22) based on MS 678: Part I to V: 1980	

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**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Straight Fertiliser	Water Soluble Magnesium (as Hot Water Soluble MgO)	In-house Method (FTM/PR/14) based on MS 417: Part 6 (Clause 6): 1994 (Amd 1, 2001)
Organic Fertiliser / Compost / Semi Compost Fiber	Preparation of Sample for Analysis	In-house method (FTM/PR/01) Clause 5.2 based on MS 677: Part I to VII (Clause 1(a)): 1980
	Moisture	In-house Method (FTM/PR/02) based on MS 417: Part 2: 1994 (Oven Method)
	Organic Matter (as Organic Matter) and Organic Carbon (as Organic C)	In-house Method (FTM/PR/20) based on MS 417: Part 8 (Clause 12): 1997 (Amd 1, 2001)
	Total Nitrogen (Total N)	In-house Method (FTM/PR/07) Clause 8.4.15 based on MS 677: Part I to VIII (Clause III): 1980
	Total Phosphorus (as P <sub>2</sub> O <sub>5</sub> )	In-house Method (FTM/PR/08) Clause 8.4 based on MS 417: Part 4 (Clause 11): 1994 (Amd 1, 2001)
	Total Potassium (as K <sub>2</sub> O)	In-house Method (FTM/PR/12) Clause 8.4 based on MS 417: Part 5 (Clause 6): 1994 (Amd 1, 2001)
	Total Magnesium (as MgO)	In-house Method (FTM/PR/13) Clause 8.5 based on MS 417: Part 6 (Clause 7): 1994 (Amd 1, 2001)
	Total Calcium (as CaO)	In-house Method (FTM/PR/21) Clause 8.2 based on MS 677: Part I to VIII (Clause VI): 1980
	pH	In-house Method (FTM/PR/22) based on MS 678: Part I to V (Clause I): 1980

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- |                              |                                   |
|------------------------------|-----------------------------------|
| 1. ChM. Goh Mean See         | <b>IKM No.: M/4255/7123/15</b>    |
| 2. ChM. Petronella G Ah Tung | <b>IKM No.: M/3595/4399/03/13</b> |