

Our Ref : ACL/MIS-OTH 220160

Company : **DR AHMAD BUKHARY BIN AHMAD KHAIR**
 School of Biological Sciences
 G08 Building, Universiti Sains Malaysia
 11800 USM Pulau Pinang

Sample description : Received one (1) samples labelled as **Postharvest Soil**
Marking: USM Penang L14-Building, Plant House - Insect Frass Species
Hermetia Illucens

Results of Analysis

Parameter	Unit	Method	Results
pH	-	In House based on APHA 4500 H ⁺ B	9.2
Exchangeable Potassium	mg/L	MS 678: Pt. I to V : 1980	590.0
Exchangeable Calcium	mg/L	MS 678: Pt. I to V : 1980	100.0
Exchangeable Magnesium	mg/L	MS 678: Pt. I to V : 1980	73.0
Cation Exchange Capacity	meq/100g	MS 678: Pt. I to V : 1980	7.0
Total Organic Carbon	%w/w	MS678:Pt I to IV:1980	6.1
Total Organic Matter	%w/w	In House	35.6

Note:

"<" denote "Less Than"



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Our Ref : ACL/MIS-OTH 220160/A

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Hermetia Illucens

Results of Analysis

Parameter	Unit	Method	Results
Total Nitrogen	%w/w	MS 1120 (2004)	0.63
Available Phosphorus	mg/kg	Bray Extraction	76.3

Note:

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Our Ref : ACL/MIS-OTH 220160/B


Company : **DR AHMAD BUKHARY BIN AHMAD KHAIR**
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Sample description : Received one (1) samples labelled as **Postharvest Soil**
Marking: USM Penang L14-Building, Plant House - Insect Frass Species
Hermetia Illucens

Results of Analysis

Parameter	Unit	Method	Results
C/N Ratio	-	In-House	9.7

Note:
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Our Ref : ACL/MIS-OTH 220160/C

Company : **DR AHMAD BUKHARY BIN AHMAD KHAIR**
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11800 USM Pulau Pinang

Sample description : Received one (1) samples labelled as **Postharvest Soil**
Marking: USM Penang L14-Building, Plant House - Insect Frass Species
Hermetia Illucens

Results of Analysis

Parameter	Unit	Method	Results
Soil Conductivity	$\mu\text{S/cm}$	MS 678:Part VI to IX:1980	1,646

Note:

"<" denote "Less Than"



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Our Ref : ACL/MIS-OTH 220332

Company : **DR AHMAD BUKHARY BIN AHMAD KHAIR**
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11800 USM Pulau Pinang

Sample description : Received one (1) samples labelled as **Postharvest Soil Marking:
USM Penang L14-Building, Plant House -Insect Frass Species Hermetia
Illucens**

Results of Analysis

Parameter	Unit	Method	Results
Total Potassium as K	mg/kg	ICP-OES	6,960.0



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Our Ref : ACL/MIS-OTH 220339

Company : **DR AHMAD BUKHARY BIN AHMAD KHAIR**
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11800 USM Pulau Pinang

Sample description : Received one (1) samples labelled as **Postharvest Soil Marking:
USM Penang L14-Building, Plant House -Insect Frass Species Hermetia
Illucens**

Results of Analysis

Parameter	Unit	Method	Results
Total Sulphur as S	mg/kg	ICP-OES	1,820.0



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Our Ref : ACL/MIS-OTH 220294

Company : **DR AHMAD BUKHARY BIN AHMAD KHAIR**
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Sample description : Received one (1) samples labelled as **Postharvest Soil Marking:
 USM Penang L14-Building, Plant House -Insect Frass Species Hermetia
 Illucens**

Results of Analysis

Parameter	Unit	Method	Results
Total Phosphorus	mg/kg	ICP-OES	3505.0
Ammonium	mg/kg	Ion Chromatography	697.4
Nitrate	mg/kg	Ion Chromatography	0.02
Nitrite	mg/kg	Ion Chromatography	0.01

Note:

"ND" denotes "Not Detected"

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Our Ref : ACL/MIS-OTH 220349

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11800 USM Pulau Pinang

Sample description : Received one (1) samples labelled as **Postharvest Soil Marking:
USM Penang L14-Building, Plant House -Insect Frass Species Hermetia
Illucens**

Results of Analysis

Parameter	Unit	Method	Results
Sulphate as SO ₄	% w/w	MS 678 : Part VI to IX:1980	1.3
Sulphide as S ₂ -	mg/kg	APHA 4500-S2-D	< 0.5
Phosphate as PO ₄	mg/kg	Spectrometry	329.3

Note:

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Our Ref : ACL/MIS-OTH 220354

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Sample description : Received one (1) samples labelled as **Postharvest Soil Marking :
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Results of Analysis

Parameter	Unit	Method	Results
Crude Fiber	% w/w	MS 1414 (1997)	4.9



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Our Ref : ACL/MIS-OTH 220368

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Sample description : Received one (1) samples labelled as **Postharvest Soil Marking:
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Illucens**

Results of Analysis

Parameter	Unit	Method	Results
Total Iron as Fe	mg/kg	ICP-OES	5,450.0



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Our Ref : ACL/MIS-OTH 220383

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Sample description : Received one (1) samples labelled as **Postharvest Soil Marking:
USM Penang L14-Building, Plant House -Insect Frass Species Hermetia
Illucens**

Results of Analysis

Parameter	Unit	Method	Results
Organic Nitrogen as N	mg/kg	APHA4500Norg-B, NH3-G	1,870
Ferric Iron	mg/kg	APHA3500Fe,3120	11,000
Iron as Fe ₂ O ₃	%w/w	By Calculation	1.6

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