



## SUMMARY REPORT

PTS-0163



Soil Chemical Properties' Proficiency Testing Programme

Thai Soil Laboratory Network (TSLAN)

Organized by Office of Science for Land Development

Land Development Department

Report No : S6334-01

Date: April 22, 2021

Participant (EN) : The Center for Scientific and Technological Equipment, Walailak University

(TH) : ศูนย์เครื่องมือวิทยาศาสตร์และเทคโนโลยี มหาวิทยาลัยวลัยลักษณ์

Participant ID : S6334

Parameters	No. of reported results	Consensus Value <sup>1</sup> ( $X_{pt}$ )	Standard Deviation for Proficiency Assessment <sup>2</sup> ( $\sigma_{pt}$ )	Participant result	z-score <sup>3</sup>
pH <sub>w</sub>	34	4.93	0.39	5.01	0.21
Electrical Conductivity (dS m <sup>-1</sup> at 25 °C)	26	0.017	0.005	0.014	-0.60
Organic Matter (%) Walkley & Black Method	34	0.3	0.1	0.3	-0.27
Available Phosphorus (mg kg <sup>-1</sup> ) Bray II Method	32	9.0	2.1	7.4	-0.77
Exchangeable Potassium (mg kg <sup>-1</sup> ) NH <sub>4</sub> OAc Method	32	10.6	3.1	7.5	-0.99

## Remark:

1. Consensus Value ( $X_{pt}$ ) is the robust averages from the participant results after excluded the outlier(s) calculated according to algorithm A (ISO 13528: 2015)

2. Standard Deviations for Proficiency Assessment ( $\sigma_{pt}$ ) is the robust standard deviation of the data set calculated according to algorithm A (ISO 13528: 2015)

3. Laboratory whose | z-score | ≤ 2.0 means "satisfactory", 2.0 < | z-score | < 3.0 means "questionable" and | z-score | ≥ 3.0 means "unsatisfactory"

Reported by:

(Ms. Busarin Swanglap)  
Program Coordinator  
Soil Analysis Technique  
Development and  
Standardization Group

Approved by:

(Mr. Jirawut Wiangwongngam)  
Director  
Soil Analysis Technique  
Development and  
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Authorized by:

(Ms. Sumitra Watana)  
Director  
Office of Science for  
Land Development  
Land Development Department



## SUMMARY REPORT

PTS-0163



Soil Chemical Properties' Proficiency Testing Programme

Thai Soil Laboratory Network (TSLAN)

Organized by Office of Science for Land Development

Land Development Department

Report No : S6334-02

Date: April 22, 2021

Participant (EN) : The Center for Scientific and Technological Equipment, Walailak University

(TH) : ศูนย์เครื่องมือวิทยาศาสตร์และเทคโนโลยี มหาวิทยาลัยวลัยลักษณ์

Participant ID : S6334

Parameters	No. of reported results	Consensus Value <sup>1</sup> ( $X_{pt}$ )	Standard Deviation for Proficiency Assessment <sup>2</sup> ( $\sigma_{pt}$ )	Participant result	z-score <sup>3</sup>
pH <sub>w</sub>	34	7.50	0.34	8.12	1.82
Electrical Conductivity (dS m <sup>-1</sup> at 25 °C)	26	0.214	0.061	0.161	-0.87
Organic Matter (%) Walkley & Black Method	34	4.9	0.3	5.0	0.11
Available Phosphorus (mg kg <sup>-1</sup> ) Bray II Method	32	68.0	18.3	55.7	-0.67
Exchangeable Potassium (mg kg <sup>-1</sup> ) NH <sub>4</sub> OAc Method	32	457	66	498	0.63

## Remark:

1. Consensus Value ( $X_{pt}$ ) is the robust averages from the participant results after excluded the outlier(s) calculated according to algorithm A (ISO 13528: 2015)

2. Standard Deviations for Proficiency Assessment ( $\sigma_{pt}$ ) is the robust standard deviation of the data set calculated according to algorithm A (ISO 13528: 2015)

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## SUMMARY REPORT

PTS-0163



Soil Chemical Properties' Proficiency Testing Programme

Thai Soil Laboratory Network (TSLAN)

Organized by Office of Science for Land Development

Land Development Department

Report No : S6334-03

Date: April 22, 2021

Participant (EN) : The Center for Scientific and Technological Equipment, Walailak University

(TH) : ศูนย์เครื่องมือวิทยาศาสตร์และเทคโนโลยี มหาวิทยาลัยวลัยลักษณ์

Participant ID : S6334

Parameters	No. of reported results	Consensus Value <sup>1</sup> ( $X_{pt}$ )	Standard Deviation for Proficiency Assessment <sup>2</sup> ( $\sigma_{pt}$ )	Participant result	z-score <sup>3</sup>
pH <sub>w</sub>	34	4.91	0.25	5.13	0.89
Electrical Conductivity (dS m <sup>-1</sup> at 25 °C)	26	1.589	0.109	1.570	-0.17
Organic Matter (%) Walkley & Black Method	34	0.5	0.1	0.5	-0.22
Available Phosphorus (mg kg <sup>-1</sup> ) Bray II Method	32	9.1	2.5	9.1	-0.01
Exchangeable Potassium (mg kg <sup>-1</sup> ) NH <sub>4</sub> OAc Method	32	26.5	5.9	30.8	0.73

## Remark:

1. Consensus Value ( $X_{pt}$ ) is the robust averages from the participant results after excluded the outlier(s) calculated according to algorithm A (ISO 13528: 2015)

2. Standard Deviations for Proficiency Assessment ( $\sigma_{pt}$ ) is the robust standard deviation of the data set calculated according to algorithm A (ISO 13528: 2015)

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## SUMMARY REPORT

PTS-0163

Soil Chemical Properties' Proficiency Testing Programme

Thai Soil Laboratory Network (TSLAN)

Organized by Office of Science for Land Development

Land Development Department



Report No : S6334-04

Date: April 22, 2021

Participant (EN) : The Center for Scientific and Technological Equipment, Walailak University

(TH) : ศูนย์เครื่องมือวิทยาศาสตร์และเทคโนโลยี มหาวิทยาลัยวลัยลักษณ์

Participant ID : S6334

Parameters	No. of reported results	Consensus Value <sup>1</sup> ( $X_{pt}$ )	Standard Deviation for Proficiency Assessment <sup>2</sup> ( $\sigma_{pt}$ )	Participant result	z-score <sup>3</sup>
pH <sub>w</sub>	34	4.65	0.16	4.84	1.17
Electrical Conductivity (dS m <sup>-1</sup> at 25 °C)	26	1.007	0.109	0.991	-0.14
Organic Matter (%) Walkley & Black Method	34	3.9	0.3	4.0	0.23
Available Phosphorus (mg kg <sup>-1</sup> ) Bray II Method	32	10.0	2.2	9.0	-0.47
Exchangeable Potassium (mg kg <sup>-1</sup> ) NH <sub>4</sub> OAc Method	32	265	30	276	0.37

### Remark:

1. Consensus Value ( $X_{pt}$ ) is the robust averages from the participant results after excluded the outlier(s) calculated according to algorithm A (ISO 13528: 2015)

2. Standard Deviations for Proficiency Assessment ( $\sigma_{pt}$ ) is the robust standard deviation of the data set calculated according to algorithm A (ISO 13528: 2015)

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