

Proposed by:
 F.R. Moormann et al., 1963
 Revised by:
 1. N. Chorphaka, 1987
 2. A. Potichan, 2004

LAMPANG SERIES

Field Symbol: Lp

Distribution: Occupies moderate extent in the north of Thailand.

Setting: Lampang soils are formed from old alluvium and occur on the low terrace and valley flats. Relief is level to nearly level with the slopes range from 1 to 2 percent. Elevation above sea level is from 160 m up to 300 m. The climate is Tropical Savanna (Koppen 'Aw'). Average annual precipitation is from 1,100 to 1,800 mm. Mean annual air temperature is around 27 °C.

Drainage, Permeability and Runoff: Poorly drained. Permeability is moderate over slow. Runoff is slow. They are flooded by impounded rain water. Ground water table falls below 2 m during the peak of the dry season.

Vegetation and Land Use: Used for transplanting rice in the wet season and for some upland crops in the dry season under irrigation.

Characteristic Profile Features: Lampang series is a member of the fine-silty, mixed, semiactive, isohyperthermic Typic (Aeric) Endoaqualfs. They are very deep soils and characterized by a pinkish gray, grayish brown or pale brown silt loam, loam or silty clay loam A (Apg) horizon overlying a pinkish gray or light gray silty clay loam or clay loam grading to clay argillic B horizon. They are mottled throughout the profile with common to many strong brown, yellowish brown and/or reddish yellow mottles. Reaction is moderately acid to strong acid over strong acid to very strongly acid.

Typifying Pedon: Profile code no. is N-39/5, (moist colors unless otherwise stated).

Location: About 500 m south-east of Ban Nong Ha, Amphoe Muang Changwat Phrae.

Sheet Name: Changwat Phrae

Sheet No.: 5045 III

Coordinate: 300180

Elevation: 171 m (MSL)

Relief: nearly level

Slope: 1-2 %

Physiography: low terrace

Parent material: old alluvium

Drainage: poorly drained

Permeability: moderate over slow

Runoff: slow

Ground water depth: >2 m

Flooding depth: 20-30 cm

Duration: 3-4 month

Frequency: every year

Annual rainfall: 1,095.5 mm

Mean temp.: 26.2 °C

Climate type: Tropical Savannah (Aw)

Natural vegetation or land use: transplanting rice in wet season and upland crops in dry season

Described by: Staff of soil correlator and Ritkachon

Date: 5 May, 1972

Revised by: Aniruth Potichan

Date: 24 May, 2004

Horizon	Depth (cm)	Description
Apg	0-12	Pinkish gray (7.5YR6/2) silt loam; common fine distinct strong brown (7.5YR5/6) mottles along old root channels; weak coarse subangular blocky structure; firm, sticky and plastic; many fine roots; strongly acid (field pH 5.5); clear and smooth boundary.
ABg	12-24	Pinkish gray (7.5YR7/2) silt loam,; common fine distinct strong brown (7.5YR5/6) mottles along old root channels; weak coarse subangular blocky structure; firm, sticky and plastic; many fine roots; strongly acid (field pH 5.5); clear and smooth boundary.
Btg1	24-71	Pinkish gray (7.5YR7/2) silt loam; many fine to medium and common coarse distinct strong brown (7.5YR5/6) and yellowish red (5YR5/8) mottles; moderate medium and coarse subangular blocky structure; firm, sticky and

		plastic; continuous thick clay coatings in pores; in places patchy moderately thick clay coating on ped faces; few fine roots; very strongly acid (field pH 4.5); gradual and smooth boundary.
Btg2	71-90	Pinkish gray (7.5YR7/2) silt loam; fine to medium distinct strong brown (7.5YR5/6) and few medium prominent red (2.5YR4/8) mottles; moderate medium and coarse subangular blocky structure; firm, sticky and plastic; continuous thick clay coatings in pores, patchy moderately thick clay coatings on ped faces; very strongly acid (field pH 4.5); gradual and smooth boundary.
Btg3	90-120+	Pinkish gray (7.5YR7/2) silty clay loam; common fine distinct yellowish red (5YR5/8) mottles; moderate medium and coarse subangular blocky structure; friable, sticky and plastic; continuous thin clay coatings in pores; very strongly acid (field pH 4.5).

Type Location:

The Lampang series was named for Changwat Lampang in which of this series were first described. At the beginning of establishment, the concept of Lampang series was very broad. Therefore, the present concept has been adjusted to narrower ranges of properties.

Range of Profile Features:

The thickness of an A horizon varies from 10 to 25 cm and has 10YR or 7.5YR hues, values of 5 to 7 and chromas of 2 or less. Structure is weak to moderate fine to coarse blocky. Field pH values vary from 5.5 to 6.5.

The argillic B horizon has 7.5YR or 10YR hues, values of 6 to 7 and chromas of 2 or less. Structure is weak to moderate and medium to coarse blocky. In places these soils may contain plinthite, some ironstone nodules or soft and/or slightly hard iron-manganese nodules in lower B horizon. Field pH values are from 4.5 to 5.5.

Similar Soil Series:

Roi Et series (Re): contain less silt fraction and is the Aeric Kandiaquults.

Mae Sai series (Ms): has browner color and higher pH values in the subsoil (7.0 to 8.0).

Hin Kong series (Hk): has a similar profile but browner color in the top of subsoil and in the Typic Paleaquults.

Si Thep series (Sri): lower base saturation and is in the Plinthic Paleaquults.

Principal Associated Soils:

These include Chiang Rai, Roi Et, Phan series.

ANALYSIS RESULTS
(oven dry basis)

Profile code no.: N-39/5
Soil series: Lampung (Lp)

Lab No.	Depth (cm)	Horizon	Particle size distribution analysis (% by weight)							Texture		pH		CaCO ₃ %	P, mg kg ⁻¹ Bray 2	K, mg kg ⁻¹ NH ₄ OAc	
			USDA grading			Sand-fraction grading				Lab	Field	1:1	1:1				
			sand	silt	clay	vc	c	m	f	vf	result	estim ⁿ	water				KCl
Pc-602	0-12	Apg	26.0	62.0	12.0						sil	sil	5.1	4.2	0.3	6.2	47
Pc-603	12-24	ABg	24.5	63.0	12.5						sil	sil	5.5	4.4	-	3.4	21
Pc-604	24-71	Btg1	20.5	58.5	21.0						sil	sil	5.4	3.8	-	1.7	27
Pc-605	71-90	Btg2	17.0	57.0	26.0						sil	sil	5.5	3.8	-	2.3	27
Pc-606	90-120+	Btg3	14.5	54.5	31.0						sicl	sicl	5.5	3.9	0.3	1.6	38

Depth (cm)	Air dried to oven dried	C %	N %	Exchange capacity and cations (cmol _(c) kg ⁻¹)									Base satur ⁿ (%)		ECEC cmol _(c) kg ⁻¹ (B+D)	Al KCl extr. cmol _(c) kg ⁻¹ (D)	Electrical conduct ^y (ECx10 ⁶) dS m ⁻¹
				Ca	Mg	K	Na	SUM cations (B)	Extr. acidity (A)	SUM (B+A)	CEC NH ₄ OAc (C)	CEC 100g Clay	B/Cx100	(Bx100)/(B+A)			
0-12	1.6	1.20		2.30	0.60	0.10	0.20	3.20	4.10	7.30	6.0	50.0	53	44			0.08
12-24	1.0	0.68		2.10	0.60	0.10	0.10	2.90	4.50	7.40	6.5	52.0	45	39			0.05
24-71	2.6	0.11		0.80	0.90	0.10	0.10	1.90	5.30	7.20	6.9	32.9	28	26			0.03
71-90	3.5	0.39		1.30	1.40	0.10	0.10	2.90	5.00	7.90	6.8	26.2	43	37			0.03
90-120+	3.3	0.83		2.20	2.30	0.10	0.10	4.70	5.20	9.90	8.6	27.7	55	47			0.03

Surveyor: Staff of correlator and Ritkachon

Date: 5 May, 1972