

Proposed by F. J. Dent , 1966
Revised by :
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

LAMPHU LA SERIES

Field Symbol: LI

Distribution: Occupies a small extent in Peninsular Thailand and some areas in Southeast Coast of Thailand.

Setting: Lamphu La soils are formed from alluvium and occurred on the alluvial plain (alluvial terrace). The elevation ranges from 20 to 60 m above mean sea level. Relief is gently undulating to undulating. Slope ranges from 2 to 12 percent. The climate is Tropical Monsoon (Koppen 'Am'). Average annual air temperature is from 26 °C to 28°C. Average annual precipitation is from 1,500 to 3,000 mm.

Drainage, Permeability and Surface Runoff: Drainage is well drained, permeability is estimated to be moderate and surface runoff is rapid. Ground water level is below 1 meter throughout the year.

Vegetation and Land Use: Originally under Tropical Evergreen Forest. Now largely planted in para rubber, oil palm and variety of fruit crops. Abandoned areas revert to thick secondary vegetation.

Characteristic Profile Features: Lamphu La series is a member of the fine, mixed, semiactive, isohyperthermic Typic Palehumults (soil taxonomy, 2003). They are very deep soils and are characterized by a dark brown or dark yellowish brown clay loam surface or A horizon overlying a strong brown clay argillic B horizon. Very strongly strongly acid, reaction values range from 4.5 to 5.5.

Typifying Pedon: Lamphu La clay loam - para rubber plantation, 2 km from Petchakasem road (12th km), Moo Ban Thieng Som Poi, Tambon Lamo, Amphoe Muang Changwat Trang, 35 m above mean sea level, 2 to 3 percent slopes (sheet name Changwat Trang, sheet number 4933 IV, coordinate 375813).

Profile Code Number: S-65/58, described by Chanin Pintip, 24 May 1973 (moist colors unless otherwise stated).

| Horizon Depth (cm) | Description |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A 0-11 | Yellowish brown (10YR5/4) clay loam; moderate fine and medium subangular blocky structure; firm, sticky and plastic; common fine and medium tubular pores, common medium interstitial pores; few fine and medium roots; moderately acid (field pH 6.0); clear smooth boundary. |
| Bt1 11-28 | Yellowish brown (10YR5/6) clay loam; moderate medium and fine subangular blocky structure; firm, sticky and plastic; common thin cutan on ped faces and in pores; few fine and medium tubular pores, few medium interstitial pores; few fine and medium roots; moderately acid (field pH 6.0); clear smooth boundary. |
| Bt2 28-42 | Yellowish brown (10YR5/8) clay; moderate medium and fine subangular blocky structure; firm, sticky and plastic; common moderately thick cutan on ped faces and in pores; common fine and medium tubular pores; very few very fine and fine roots; strongly acid (field pH 5.5); clear smooth boundary. |
| Bt3 42-100 | Strong brown (7.5YR5/6) clay; moderate medium and fine subangular blocky structure; firm, sticky, plastic; continuous moderately thick cutan on ped faces and in pores; common fine and medium tubular pores; very few very fine and fine roots; strongly acid (field pH 5.5). |

Type Location:

Name of village, Ban Lamphu La, Amphoe Muang, Changwat Trang.

Range of Profile Features:

The surface or A horizon loam or clay loam, ranges between 10 to 20 cm in thickness and has 10YR hues, values 3 to 5 and chromas 2 to 4. Structure is moderate fine and medium subangular blocky. Granular structure may occur in the uppermost layer. Very strongly acid to strongly acid, reaction values range from 5.0 to 5.5.

The argillic B horizon clay, has 7.5YR hue, values 5 or 6 and chromas 6 to 8. Structure is moderate medium and coarse blocky. Texture may be clay loam and gravels of quartz and ironstone nodules may occur in the deeper subsoil (below 80 cm). Very strongly acid to strongly acid, reaction values range from 5.0 to 5.5.

Remark: Normally in agriculture area, low organic carbon content (Typic Paleudults).

Similar Soil Series:

Rueso series (Ro): fine-silty, mixed, semiactive, isohyperthermic Typic Palehumults.

Pak Chan series (Pac): very-fine, kaolinitic isohyperthermic Typic Palehumults.

Krabi series (Kbi): fine, kaolinitic isohyperthermic Typic Kandudults.

Principal Associated Soils:

These include Rueso and Krabi series.

ANALYSIS RESULTS

(oven dry basis)

Profile code No.: S-65/58

Soil series: Lamphu La series (LI)

| 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 | | | | |
| Pd-833 | 0-11 | A | 11.0 | 68.0 | 21.0 | | | | | | | sil | cl | 4.8 | 4.0 | 0.9 | 6.2 | 210 |
| Pd-834 | 11-28 | Bt1 | 8.0 | 59.5 | 32.5 | | | | | | | sicl | cl | 4.9 | 4.0 | 0.5 | 1.1 | 137 |
| Pd-835 | 28-42 | Bt2 | 7.5 | 52.0 | 40.5 | | | | | | | sicl | c | 5.1 | 3.9 | 0.5 | 0.6 | 99 |
| Pd-836 | 42-100 | Bt3 | 5.5 | 40.0 | 54.5 | | | | | | | sic-c | c | 5.5 | 4.4 | 0.5 | 3.7 | 123 |

| Depth (cm) | Air dried to oven dried | C % | N % | Exchange capacity and cations (cmol ₍₊₎ kg ⁻¹) | | | | | | | | | | Base satur ⁿ (%) | | ECEC cmol ₍₊₎ kg ⁻¹ (B+D) | Al KCl extr. cmol ₍₊₎ 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) | | | | |
| | | | | 0-11 | 6.0 | 3.23 | | 1.40 | 1.20 | 0.40 | 0.10 | 3.10 | 19.10 | 22.20 | 11.5 | | | |
| 11-28 | 4.5 | 2.65 | | 0.60 | 0.50 | 0.30 | 0.10 | 1.50 | 18.30 | 19.80 | 12.0 | 36.9 | 13 | 8 | | | 0.05 | |
| 28-42 | 2.2 | 1.23 | | 0.30 | 0.40 | 0.10 | 0.10 | 0.90 | 17.60 | 18.50 | 11.3 | 27.9 | 8 | 5 | | | 0.02 | |
| 42-100 | 2.3 | 1.84 | | 0.30 | 0.36 | 0.20 | 0.20 | 1.06 | 18.40 | 19.46 | 14.5 | 26.6 | 7 | 5 | | | 0.02 | |

Surveyor: C. Pintip

Date: May 24, 1973

Reported by: W. Sirichuaychoo

Date: Nov. 24, 1998