

Proposed by S. Charoenpong, 1973
Revised by :
P. Vijarnsorn and staffs, 1988.
W. Sirichuaychoo, 2004

LA-NGU SERIES

Field Symbol: Lgu

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

Setting: La-ngu soils are formed from relatively old alluvium on low alluvial plain or higher of coastal plain with limestone monadnocks standing near by. Relief is level. Slope is less than 1 percent. Elevation is approximately 8 to 15 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am') or Tropical Rain Forest (Koppen 'Af'). Average annual precipitation is above 2,000 mm. Average annual air temperature is from 26 °C to 28°C.

Drainage, permeability and surface runoff: Drainage is poorly drained, permeability is estimated to be slow and surface runoff is slow. Ground water level is within 1 meter for most parts of the year except 2 to 3 months during dry season. Irrigation or rain water is usually flooded almost throughout the season of paddy growing which is about 3 to 4 months a year.

Vegetation and Land Use: Mostly used for paddy rice, where abandoned, grasses and *Melaleuca leucadendron* are occupied.

Characteristic Profile Features: The La-ngu series is a member of the fine, mixed, isohyperthermic Typic Tropaqualfs. They are very deep soils and are characterized by a dark gray or dark grayish brown clay loam surface or A horizon overlying a gray or light gray clay argillic B horizon. Mottles of brownish and yellowish occur throughout the soil profile. Secondary lime concretion and soft manganese or iron oxides concretion are found in common within subsoil. Moderately acid to slightly acid, reaction values range from 6.0 to 6.5 in the surface and slightly alkaline to moderately alkaline, reaction values range from 7.5 to 8.0 in subsoil.

Typifying Pedon: La-ngu clay loam - paddy field, North of Ban Chai Khlong about 200 m, Ban Chai Khlong, Tambon Phaya Kha, Amphoe Muang, Changwat Phatthalung, 10 m above mean sea level, less than 2 percent slopes, 10 to 30 cm flooding depth, 1.25 m ground water depth (sheet name Changwat Phatthalung, sheet number 5024 III, coordinate 218435).

Profile Code Number: S-66/66, described by K. Busayamanont and staffs, 15 June 1978 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
Apg 0-9	Gray (10YR5/1) clay loam; many fine distinct dark brown to brown (7.5YR4/4) along roots channels and common fine distinct yellowish brown (10YR5/8) mottles; weak fine subangular blocky structure; friable, sticky and plastic; many fine and medium roots; neutral (field pH 7.0); clear, wavy boundary.
Btg1 9-25	Light gray to gray (10YR6/1) clay; many fine distinct yellowish brown (10YR5/6) and common fine distinct dark yellowish brown (10YR4/6) mottles; moderate medium subangular blocky structure; friable, sticky and plastic; patchy thin clay coating on ped faces; many fine and few medium roots; moderately alkaline (field pH 8.0); gradual smooth boundary.
Btg2 25-87	Light gray to gray (10YR6-7/1) clay; many medium distinct brownish yellow to yellowish brown (10YR5-6/8) mottles; moderate medium and coarse subangular blocky structure; friable, very sticky and very plastic; continuous thick clay coating on ped faces and in pores; few fine roots; moderately alkaline (field pH 8.0); gradual smooth boundary.
Btg3 87-130	Light gray (10YR7/1) clay; many medium distinct strong brown (7.5YR5/6-8) mottles; moderate medium and coarse subangular blocky structure; friable, very sticky and very plastic; continuous thick clay coating on ped faces and in pores; few fine roots; few fine iron and manganese concretion; moderately alkaline (field pH 8.0).

Type Location:

Name of district, Amphoe La-ngu, Changwat Satun.

Range of Profile Features:

The surface or A horizon silty clay loam or clay loam, is 10-15 cm in thickness and has 10YR hues, values 4 to 6 and chromas 1 or 2. Structure is moderate fine and medium subangular blocky. Strongly acid to slightly acid, reaction values range from 5.5 to 6.5.

The argillic B horizon silty clay to clay, has 10YR or 2.5Y hues, values 6 or 7 and chromas 0 to 2. Structure is weak medium and coarse prismatic or blocky. Mottles of brownish and yellowish are present in common. Reddish mottles may be found but a few. Neutral to moderately alkaline, reaction values range from 7.0 to 8.0.

Similar Soil Series:

Bang Nara series (Ba): fine, kaolinitic, isohyperthermic Typic Paleaquults, base saturation is less than 35 percent.

Principal Associated Soils:

These include Thung Kai series.

Thung Kai series (Tuk): clayey-skeletal, mixed, active, nonacid, isohyperthermic Aeric Endoaquepts.

ANALYSIS RESULTS

(oven dry basis)

Profile code No.: S-66/66

Soil series: La-ngu series (Lgu)

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 water	1:1 KCl			
			sand	silt	clay	vc	c	m	f	vf	result	estim ⁿ					
RA-12315	0-9	Apg	18.3	56.5	25.2	1.9	3.4	5.1	4.5	3.4	sil	cl	4.7	4.0		20.4	68
RA-12316	9-25	Btg1	11.1	49.3	39.6	0.6	2.6	3.2	2.7	2.0	sicl	c	6.3	5.3		4.6	41
RA-12317	25-87	Btg2	14.8	35.3	49.9	0.9	2.6	3.5	4.2	3.6	c	c	6.9	5.9		3.0	33
RA-12318	87-130	Btg3	11.0	27.8	61.2	0.3	1.0	2.3	3.4	4.0	c	c	6.8	5.6		2.5	56

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)	AI 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)				
0-9	1.4	1.72		5.20	0.50	0.10	0.30	6.10	5.20	11.30	7.4	29.4	82	54			0.49	
9-25	1.7	0.86		7.40	0.70	0.10	0.40	8.60	2.40	11.00	8.5	21.5	100	78			0.25	
25-87	2.2	0.26		8.80	1.00	0.10	0.40	10.30	1.70	12.00	10.5	21.0	98	86			0.21	
87-130	3.3	0.12		14.20	1.90	0.10	0.60	16.80	2.80	19.60	16.7	27.3	100	86			0.39	

Surveyor: K. Busayamanont & staff

Date: June 15, 1978

Reported by: W. Sirichuaychoo

Date: Nov. 5, 1998