

Proposed by P. Vijarnsorn, 1970
Revised by :
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

LANG SUAN SERIES

Field Symbol: Lan

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

Setting: Lang Suan soils derived from sandstone or equivalent rocks and occurred on denudation surface. Relief is on nearly level to undulating. Slope ranges from 3 to 12 percent. Elevation is approximately 20 to 60 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am') or Tropical Rain Forest (Koppen 'Af'). 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 excessively drained with rapid, permeability is estimated to be rapid and surface runoff is rapid, due to sloping. Water level below 1 meter throughout the year.

Vegetation and Land Use: Originally, the areas are Tropical Evergreen Forest and Dry Evergreen Forest. Parts have been cleared for coconut growing and for some upland crops such as water melon and para rubber and oil palm. When abandoned, mostly revert to low shrubs and tall grasses.

Characteristic Profile Features: Lang Suan series is a member of the isohyperthermic, coated Typic Quartzipsamments (soil taxonomy, 2003). They are very deep sandy soils and are characterized by a dark brown, grayish brown or brown loamy sand surface or A horizon overlying a reddish yellow or strong brown loamy sand C horizon. Very strongly acid to strongly acid, reaction range from 4.5 to 5.5.

Typifying Pedon: Lang Suan loamy sand, 1.2 km from Ban Nai to Don Sak road (right hand side about 900 m), Ban Tha Kub, Tambon Pak Paek, Amphoe Don Sak Changwat Surat Thani, 60 m above mean sea level, 2 to 5 percent slopes (sheet number 4927 III, coordinate 753112).

Profile Code Number: research net work, described by W. Sirichuaychoo and S. Udomsri, 15 July 1996 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
Ap 0-10	Dark grayish brown (10YR4/2) loamy sand; weak fine subangular blocky structure; very friable, nonsticky and nonplastic; common fine and medium roots; slightly acid (field pH 6.5); abrupt smooth boundary.
C1 10-23	Yellowish brown (10YR5/6) loamy sand; weak fine subangular blocky structure; very friable, nonsticky and nonplastic; common fine and medium roots; moderately acid (field pH 6.0); gradual smooth boundary.
C2 23-40/50	Yellowish brown to light yellowish brown (10YR5-6/4) loamy sand; weak fine subangular blocky structure; very friable, nonsticky and nonplastic; common fine roots; moderately acid (field pH 6.0); gradual smooth boundary.
C3 40/50-84	Yellowish brown (10YR5/6) loamy sand; weak fine subangular blocky structure; very friable, nonsticky and nonplastic; few fine roots; strongly acid (field pH 5.5); gradual smooth boundary.
C4 84-100	Yellowish brown (10YR5/6) loamy sand; weak fine subangular blocky structure; very friable, nonsticky and nonplastic; strongly acid (field pH 5.5); clear smooth boundary.
C5 100-135	Dark brown to brown (7.5YR4/4) loamy sand; weak fine subangular blocky structure; very friable, nonsticky and nonplastic; strongly acid (field pH 5.5); gradual smooth boundary.

C6 135-160 Strong brown (7.5YR5/6) loamy sand; weak fine subangular blocky structure; very friable, nonsticky and nonplastic; strongly acid (field pH 5.5); gradual, smooth boundary.

Type Location:

Name of district, Amphoe Lang Suan, Changwat Chumphon.

Range of Profile Features:

The surface or A horizon loamy sandy, ranges from 8 to 15 cm in thickness and has 10YR or 7.5YR hues, values 4 to 5 and chromas 2 to 3. Texture of sandy loam may occur. Very strongly acid to moderately acid, reaction values range from 5.0 to 6.0.

The C horizon loamy sand, has 7.5YR or 5YR hues, values 5 to 7 and chromas 6 to 8. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.0.

Similar Soil Series:

Bacho series (Bc): isohyperthermic, coated Typic Quartzipsamments, formed on beach ridges or dune sand.

Sattahip series (Sh): isohyperthermic, coated Typic Quartzipsamments, derived from granite.

Principal Association Soils:

Lang Suan series are associated with Kho Hong, Na Thawi and Tha Sae series.

Kho Hong series (Kh): coarse-loamy, kaolinitic, isohyperthermic Typic Kandiodults, 10YR or 7.5YR hues.

Na Thawi series (Nat): coarse-loamy, kaolinitic, isohyperthermic Typic Kandiodults, 5YR hues.

Tha Sae series (Te): fine-loamy, kaolinitic, isohyperthermic Typic Kandiodults, 10YR or 7.5YR hues.

ANALYSIS RESULTS
(oven dry basis)

Profile code No.: Research Net Work
Soil series: Lang Suan series (Lan)

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						
401060	0-10	Ap	81.2	12.8	6.0	0.6	3.2	28.6	34.7	14.1	ls	ls	5.1	4.7		3.9	30	
401061	10-23	C1	80.2	16.8	3.0	0.3	2.7	29.9	34.6	12.7	ls	ls	4.2	3.8		0.9	14	
401062	23-40/50	C2	80.4	16.1	3.5	0.2	3.4	32.3	34.2	10.3	ls	ls	4.0	3.7		0.5	18	
401063	40/50-84	C3	79.6	15.9	4.5	0.2	2.5	15.8	38.8	22.3	ls	ls	4.2	3.8		0.3	12	
401064	80-100	C4	80.8	15.2	4.0	0.5	2.8	19.1	43.5	14.9	ls	ls	4.5	3.9		0.1	9	
401065	100-135	C5	78.3	17.2	4.5	0.9	3.6	18.2	40.2	15.4	ls	ls	4.5	3.8		0.1	10	
401066	135-160	C6	79.7	15.8	4.5	1.2	3.0	22.4	38.9	14.2	ls	ls	4.7	3.9		0.2	12	

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)				
0-10		0.59		0.70	0.40	0.10	0.20	1.40	1.20	2.60	1.6	26.7	88	54	3	1.58	0.001	
10-23		0.27		0.20	0.10	0.10	0.20	0.60	1.40	2.00	0.9	30.0	67	30	1.5	0.86	0.001	
23-40/50		0.12		0.20	0.10	0.10	0.20	0.60	1.10	1.70	0.8	22.9	75	35	1.5	0.90	0.001	
40/50-84		0.09		0.20	0.10	0.10	0.20	0.60	1.20	1.80	0.8	17.8	75	33	1.7	1.07	0.001	
80-100		0.04		0.20	<.05	0.10	0.20	0.50	0.70	1.20	0.5	12.5	100	42	1.2	0.71	0.001	
100-135		0.05		0.40	0.10	0.10	0.20	0.80	0.90	1.70	0.9	20.0	89	47	2.1	1.25	0.001	
135-160		0.03		0.20	<.05	0.10	0.20	0.50	0.70	1.20	1.1	24.4	45	42	1.8	1.34	0.001	

Surveyor: W. Sirichuaychoo

Reported by: W. Sirichuaychoo

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