

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

TRANG SERIES

Field Symbol: Tng

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

Setting: Trang soils derived from fine grain clastic rocks namely shale, phyllite or equivalent rocks and occurred on denudation surface. Relief is gently undulating to undulating. Slope ranges from 2 to 12 percent. Elevation ranges from 20 to 100 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am'). Average annual precipitation is from 1,800 to 3,000 mm. Average annual temperature is from 26 °C to 28°C.

Drainage, Permeability and Surface Runoff: Drainage is well drained, permeability is moderate and surface runoff is rapid. Groundwater level is below 2 m throughout the year.

Vegetation and Land Use: Originally Tropical Evergreen Forest, now largely cleared and cultivated in para rubber and a variety of fruit crops and coffee. When abandoned reverts to thick secondary shrubs.

Characteristic Profile Features: Trang series is a member of the fine, kaolinitic, isohyperthermic Typic Kandiodults (soil taxonomy, 2003). They are very moderately deep soil to ironstones and are characterized by a reddish brown, brown or yellowish red clay loam surface or A horizon overlying a yellowish red or red clay kandic B horizon. Bands of weathered shale and quartz fragments occur mainly between 50 to 100 cm from the soil surface. Strongly acid to moderately acid, reaction values range from 5.5 to 6.0 over very strongly acid to strongly acid, reaction values range from 4.5 to 5.5.

Typifying Pedon: Trang clay loam - para rubber plantation, Ban Bang Pit Lang, Amphoe Laem Ngob, Changwat Trad, 2 to 5 percent slopes (sheet name Amphoe Laem Ngob, sheet number 5547 I, coordinate: 503605).

Profile Code Number: SE-18/30, described by C. Manotham, 22 February 1975 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
Ap 0-9	Yellowish red (5YR4/6) clay loam; weak fine subangular blocky structure to crumb structure; friable, sticky and plastic, many very fine interstitial and tubular pores; many very fine and fine roots; common fine of charcoal; many fine to medium manganese oxide nodule; moderately acid (field pH 6.0); clear smooth boundary.
BA 9-17	Red (2.5YR4/6) clay; weak to moderate fine subangular blocky structure; friable, sticky and plastic, common very fine interstitial and common fine tubular pores; common medium to large animal holes; common fine roots; few fine pieces of charcoal; few fine to medium manganese and iron oxide nodules; strongly acid (field pH 5.5); gradual smooth boundary.
Bt1 17-44	Red (2.5YR4/6) clay; weak fine and medium subangular blocky structure; friable, sticky and plastic, patchy thin cutan on ped faces and in pores; common very fine to fine interstitial pores; few medium animal holes; few fine roots; few fine pieces of charcoal; few fine manganese and iron oxide nodules; strongly acid (field pH 5.5); gradual smooth boundary.
Bt2 44-96	Red (2.5YR4/6) clay; weak medium and coarse subangular blocky structure; friable to firm, sticky and plastic, patchy thin cutan on ped faces and in pores; many very fine and fine interstitial and tubular pores; few medium animal holes; few large decayed, few fine roots; common fine and medium manganese and iron oxide nodules; very strongly acid (field pH 4.5); gradual smooth boundary.

Btc 96-130 Red (2.5YR4/6) gravelly clay; weak medium and coarse subangular blocky structure; friable to firm, sticky and plastic, patchy thin cutan on ped faces and in pores; common very fine interstitial and few fine tubular pores; few fine roots; common to many fine and medium manganese and iron oxide nodules; gravels composed of ironstones more than 35% by volume of the soil matrix; very strongly acid (field pH 4.5).

Type Location:

Name of province, Changwat Trang.

Range of Profile Features:

The surface or A horizon loam or clay loam, is from 10 to 25 cm in thickness and has 7.5YR and 5YR hues, values 4 or 5 and chromas 4 to 6. Texture of sandy clay loam may occurred. Structure is moderate fine and medium blocky and may be granular in the uppermost layer. Very strongly acid to moderately acid, reaction values range from 5.0 to 6.0.

The kandic B horizon clay, is 5YR and 2.5YR hues in the upper B and 2.5YR in the lower B, values 5 or 6 and chromas 6 or 8. Texture of gravelly clay textures occurred between 50 to 100 cm from the soil surface. Structure is moderate medium, breaking to moderate or strong fine blocky. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.5. The hard ironstone layer was observed at varying depths below 150 cm from the soil surface, overlying bedrock.

Similar Soil Series:

Ao Luek series (Ak): very-fine, kaolinitic, isohyperthermic Rhodic Kandiodox, has a similar profile but has redder colors.

Pak Chong series (Pc): very-fine, kaolinitic, isohyperthermic Rhodic Kandiuostox, redder colors and ustic soil moisture regime.

Principal Associated Soils:

These include Ao Luek, Krabi and Trat series.

ANALYSIS RESULTS

Profile code No.: SE-18/30

(oven dry basis)

Soil series: Trang series (Tng)

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					
Pg-4	0-9	Ap	30.0	46.5	23.5						l	cl	5.0	4.8		3.6	126
Pg-5	9-17	BA	21.0	40.0	39.0						cl	c	4.7	4.3		2.7	36
Pg-6	17-44	BT1	19.5	38.0	42.5						c	c	5.1	4.3		2.7	44
Pg-7	44-96	BT2	20.0	34.5	45.5						c	gc	5.2	4.2		2.3	14
Pg-8	96-130	Btc	17.5	33.5	49.0								5.1	4.2		2.5	27

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)				
0-9	3.3	2.28	0.38	3.40	1.00	0.30	0.40	5.10	12.20	17.30	10.2	43.4	50	29			0.44	
9-17	2.4	1.44	0.23	1.20	0.40	0.10	0.10	1.80	12.30	14.10	8.4	21.5	21	13			0.13	
17-44	1.7	0.78	0.18	0.80	0.30	0.10	0.10	1.30	11.00	12.30	6.8	16.0	19	11			0.06	
44-96	2.9	0.44	0.11	0.60	0.30	0.05	0.05	1.00	10.90	11.90	6.8	14.9	15	8			0.03	
96-130	2.3	0.35	0.09	0.60	0.20	0.06	0.06	0.92	10.70	11.62	5.3	10.8	17	8			0.04	

Surveyor: C. Manotham

Reported by: W. Sirichuaychoo

Date: Feb. 22, 1975

Date: Nov. 6, 1998