

Proposed by P. Hemsrichart, 1974
Revised by :
W. Sirichuaychoo and staffs, 1988
W. Sirichuaychoo, 2004

KAN TANG SERIES

Field Symbol: Kat

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

Setting: Kan Tang soils are formed from fine grain clastic rocks namely shale or phyllite, and occurred on denudation surface. Elevation ranges from 5 to 15 m above mean sea level. Relief is nearly level to gently undulating with 1 to 5 percent slopes. The climate is Tropical Monsoon (Koppen 'Am'). Average annual precipitation is from 1,800 to 3,000 mm. Average annual air temperature is from 26 °C to 28°C.

Drainage, Permeability and Surface Runoff: Drainage is somewhat poorly drained, permeability is slow and surface runoff is medium.

Vegetation and Land Use: shrub, grass land, para rubber and oil palms.

Characteristic Profile Feature: Kan Tang series is a member of the clayey-skeletal, kaolinitic, isohyperthermic Typic (Aquic) Plinthudults (soil taxonomy, 2003). They are shallow soil to ironstones and are characterized by brown sandy loam surface or A horizon. Strongly acid to moderately acid, reaction values range 5.5 to 6.0. The upper argillic B horizon is brown very gravelly clay loam and lower argillic B horizon very gravelly clay with gray and many red mottles (plinthite) that formed a continuous phase or more than half of the matrix and strong brown mottles. Very strongly acid to strongly acid, reaction values range 5.0-5.5.

Typifying Pedon: Kan Tang sandy loam-shrub, Chalung La-ngu left hand site road at km11, Tambon Thaphae, Amphoe Muang Changwat Satun, less than 2 percent slopes (sheet number 4922 I SE).

Profile Code Number: S-67/102, described by Pramoth Hemsrichart and staffs, 4 March 1974 (moist colors unless otherwise stated).

Horizon	Depth (cm)	Description
Ag1	0-12/15	Dark grayish brown (10YR4/2) fine sandy loam; rusty strong brown (7.5YR5/6) mottles along roots zone; weak fine and medium subangular blocky structure; very friable, slightly sticky and slightly plastic; many very fine interstitial and common very fine tubular pores; abundant very fine roots; very strongly acid (field pH 5.0); clear wavy boundary.
Ag2	12/15-25	Grayish brown (10YR5/2) slightly gravelly sandy loam; common fine distinct yellowish brown (10YR5/6) mottles; weak fine and medium subangular blocky structure; very friable, slightly sticky and slightly plastic; no cutan; many very fine and few medium roots; very strongly acid (field pH 5.0); clear smooth boundary.
Btcgv	25-60	Yellowish brown (10YR5/8) very gravelly clay loam; common medium prominent red (2.5YR4/6) mottles; moderate fine and medium subangular blocky structure; friable, sticky and slightly plastic; common patchy thin cutan on ped faces; common very fine tubular pores; very few very fine roots; gravels composed of ironstone more than 35% by volume of the soil matrix; very strongly acid (field pH 4.5); clear smooth boundary.
Btgv	60-150	Light gray to white (10YR7-8/1) clay; medium distinct yellowish brown (10YR5/8) and many coarse prominent red (2.5YR4/8) mottled; moderate to strong medium angular blocky structure; extremely hard, firm, sticky and plastic; moderately thick discontinuous cutan on ped faces; few tubular pores; no roots; plinthite more than 50% by volume of the soil matrix; very strongly acid (field pH 4.5).

Type Location:

Name of district, Amphoe Kan Tang, Changwat Trang.

Ranges of Profile Features:

The surface or A horizon sandy loam ranges from 10 to 20 cm in thickness which 10YR or 7.5YR in hues, values 4 to 5 and chromas 1 to 2. Very strongly to strongly acid, reaction values range from 4.5 to 5.5.

The upper argillic B horizon very gravelly clay has 10YR or 7.5YR hues, values 6 to 7 and chromas 3 to 4. Common red and brown mottles. Very strongly to strongly acid, reaction values range from 4.5 to 5.5.

The lower argillic B horizon very gravelly clay which in 50 cm of the surface, has 10YR or 7.5YR in hues, values 6 to 7 and chromas 1 to 2, over clay of argillic B or BC horizon, has 10YR or 7.5YR in hues, values 6 to 7 and chromas 1 to 2, many red mottles (plinthite) more than half of the matrix or formed a continuous phase and brown mottles. Very strongly to strongly acid, reaction values range from 4.5 to 5.5.

Similar Soil Series:

Phayom Ngam series (Pym): fine-loamy, kaolinitic, isohyperthermic Kandic Plinthaquults, moderately deep soils to ironstones, and poorly drained.

Klaeng series (Kl): very-fine, kaolinitic, isohyperthermic Typic Plinthaquults, poorly drained and not skeletal soils.

Principal Associated Soils:

Kan Tang series is associated with Yan Ta Khao, Phayom Ngam, Tha Sae and Khao Khat series.

Yan Ta Khao series (Yk): loamy-skeletal, mixed, semiactive, isohyperthermic Typic (Aeric) Plinthaquults, lower position.

Tha Sae series (Te): fine-loamy, kaolinitic, isohyperthermic Typic Kandiodults, not skeletal soils and no plinthite.

Khao Khat series (Kkt): clayey-skeletal, isohyperthermic Typic (Kandic) Plinthudults, higher position.

ANALYSIS RESULTS
(oven dry basis)

Profile code No.: S-67/102
Soil series: Kan Tang series (Kat)

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					
Pe-859	0-12/15	Ag1	54.5	45.0	0.5						sl	sl	4.6	3.9	0.9	2.2	29
Pe-860	12/15-25	Ag2	55.5	42.5	2.0						sl	slig.sl	5.3	4.0	0.6	1.9	29
Pe-861	25-60	Btcgv	27.5	41.5	31.0						cl	vgcl	5.3	3.8	1.2	1.3	38
Pe-862	60-150	BtgV	8.5	51.0	40.5						sic	c	5.2	3.9	1.2	1.3	41

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)			
				0-12/15	0.8	1.19		0.40	0.10	0.10	0.20	0.80	6.30	7.10			
12/15-25	0.7	0.62		0.30	0.10	0.10	0.20	0.70	5.00	5.70	2.3	115.0	30	12			0.04
25-60	2.8	0.61		0.20	0.10	0.10	0.40	0.80	13.40	14.20	9.2	29.7	9	6			0.02
60-150	2.0	0.18		0.20	0.10	0.10	0.40	0.80	13.30	14.10	11.8	29.1	7	6			0.03

Surveyor: P Hemsrichart & staff

Reported by: W. Sirichuaychoo

Date: March 4, 1974

Date: Nov. 19, 1998