

Proposed by P. Vijarnsorn, 1981
Revised by:
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

THA KHUN SERIES

Field Symbol: Tkn

Distribution: Occupied a small extent in Peninsular Thailand and some areas in Southeast Coast of Thailand, especially on the recent deposits of the main river.

Setting: Tha Khun soils are formed from alluvium and occurred on alluvial plain (the recent river deposits on the lower of river levee). Relief is level or nearly level. Slope less than 2 percent. The climate is Tropical Monsoon (Koppen 'Am'). Average annual precipitation is from 2,000 to 2,500 mm Average annual air temperature is from 26°C to 28°C.

Drainage. Permeability and Surface Runoff: Drainage is well drained, permeability is rapid and surface runoff is medium.

Vegetation and Land Use: coconut, fruit trees and vegetables.

Characteristic Profile Features: Tha Khun series is a member of the coarse-loamy, mixed, superactive, acid, isohyperthermic Typic Udifluvents (soil taxonomy, 2003). They are very deep soils, which characterized by very dark grayish brown to dark brown sandy loam surface or A horizon overlying stratification of brownish yellow, strong brown loam, sandy loam or loamy sand C horizon. Mica flakes and very strongly acid to strongly acid, reaction values range from 4.5 to 5.5 throughout the profile.

Typifying Pedon: Tha Khun sandy loam - coconut and fruit trees, from Ban Phanang, Tambon Pa We, Amphoe Chaiya, Changwat Surat Thani, 10 m above mean sea level, 1 to 2 percent slopes name Amphoe Chaiya, sheet number 4827 IV, coordinate: 174395).

Profile Code Number: S-61/142, described by Sathaphon Sintagoon, 23 April 1981 (moist colors unless otherwise stated).

Horizon	Depth (cm)	Description
A1	0-9	Very dark grayish brown (10YR3/2) sandy loam; weak fine subangular blocky structure; friable, nonsticky and nonplastic; many medium and one large roots; moderately acid (field pH 6.0); clear smooth boundary.
A2	9-31	Dark yellowish brown (10YR4/4) sandy loam; weak fine and medium subangular blocky structure and single grains;; friable, nonsticky and nonplastic; many fine roots; very strongly acid (field pH 5.0); clear smooth boundary.
C1	31-76	Brownish yellow (10YR6/6) loamy sand; weak fine and medium subangular blocky structure and single grains;; friable, nonsticky and nonplastic; common fine roots; very strongly acid (field pH 5.0); diffuse, smooth boundary.
C2	76-135	Brownish yellow (10YR6/6) loamy sand; weak fine and medium subangular blocky structure and single grains; friable, nonsticky and nonplastic; few fine roots; very strongly acid (field pH 5.0); clear smooth boundary.
C3	135-150	Light gray (10YR7/2) sandy loam; many medium distinct yellowish brown (10YR5/8) mottles; weak fine and medium subangular blocky structure; very strongly acid (field pH 5.0).

Remarks: Mica throughout the profile.

Type Location:

Name of river, Tha Khun river, Amphoe Changwat Surat Thani.

Range of profile Feature:

The surface or A horizon sandy loam or loamy sand ranges 10 to 40 cm in thickness which hues 10YR or 7.5YR values 3 to 5 and chromas 2 to 4. Very strongly acid to strongly acid, reaction values range from 5.0 to 5.5.

The stratification of subsoil C horizon which loam, sandy loam, loamy sand has 10YR to 7.5YR hues, values 4 to 5 and chromas 3 to 6. Very strongly acid to strongly acid, reaction values range from 5.0 to 5.5. Mica flakes throughout the profile.

Similar Soil Series:

Tha Muang series (Tm): coarse-loamy, mixed, active, calcareous, isohyperthermic Typic Ustifluvents, ustic soil moisture regime.

Lam Kaen series (Lam): fine-silty, mixed, semiactive, isohyperthermic Typic Haplohumults, not stratified. Lighter texture of subsoil (more than 20 percent) within 1.5 m from the soil surface.

Principal Associate soils:

Tha Khun series is associated with Rueso, Lam Kaen and Lamphu La series. Tha Khun soils occurred on the lowest of river levee, some years may be flash flooded by river water. Lam Kean, Rueso and Lamphu La soils occurred on higher of river levee.

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

Lamphu La series (LI): fine, mixed, semiactive, isohyperthermic Typic Palehumults.

ANALYSIS RESULTS

(oven dry basis)

Profile code No.: S-61/142

Soil series: Tha Khun series (Tkn)

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					
4-20775	0-9	A1	69.1	23.7	7.2	5.4	12.1	16.0	21.6	14.0	sl	sl	5.2	4.6		40.7	153
4-20776	9-31	A2	70.5	25.5	4.0	7.0	13.9	15.0	21.1	13.5	sl	sl	4.5	4.8		3.1	45
4-20777	31-76	C1	76.4	21.6	2.0	7.2	11.3	13.9	25.2	18.8	ls	ls	5.0	3.8		17.5	33
4-20778	76-135	C2	73.6	23.9	2.5	3.6	11.1	16.1	26.2	16.6	ls	ls	4.3	3.7		35.4	21
4-20779	135-150	C3	71.1	25.4	3.5	3.4	10.9	11.5	20.9	24.4	ls-sl	sl	4.5	3.7		38.3	17

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	1.3	1.32		2.10	1.20	0.30	0.20	3.80	4.30	8.10	4.6	63.9	83	47			0.25	
9-31	1.4	0.45		0.30	0.10	0.10	0.20	0.70	2.80	3.50	2.3	57.5	30	20			0.05	
31-76	0.9	0.13		0.30	0.20	0.10	0.10	0.70	1.60	2.30	1.9	95.0	37	30			0.01	
76-135	0.2	0.21		0.40	0.20	0.10	0.20	0.90	2.30	3.20	1.9	76.0	47	28			0.05	
135-150	0.9	0.21		0.40	0.20	0.10	0.20	0.90	2.30	3.20	1.9	54.3	47	28			0.03	

Surveyor: S. Sinthagoon

Reported by: W. Sirichuaychoo

Date: April 23, 1981

Date: Nov. 4, 1998