

Proposed by: C. Changprai-1971
 Revised by: 1. P. Hemsrichart, 1988
 B. Boonsompopphan,
 2. A. Suchinai,
 S. Sukchan, 2004

CHAN THUEK SERIES

Field Symbol: Cu

Distribution: Occupies small extent in the southern part of Central Highlands and in North.

Setting: Chan Thuk series is residual and colluvial and/or transported soils formed from granitic rock and occur on erosion or local wash surfaces. Relief is undulating which range of slope is 2 to 5 percent. Elevation is 280 to 320 m above sea level. The climate is Tropical Savanna (Köppen 'Aw'). Average annual precipitation varies from 1,100 to 1,300 mm. Mean annual air temperature is from 26 to 28°C.

Drainage, Permeability and Runoff: Somewhat excessively drained. Permeability is rapid and runoff is medium to rapid.

Vegetation and Land Use: Low open dipterocarp forest; and poor natural pasture; and some parts are cleared for upland crops such as corn, cassava and sorghum.

Characteristic Profile Features: The Chan Thuk series is a member of the loamy siliceous, isohyperthermic Typic Ustipsamments. They are deep soils and are characterized by a very dark grayish brown or very dark brown loamy sand A horizon overlying a pale brown, light brown or pinkish gray loamy sand over gravelly loamy sandy C horizon. Reaction is medium acid to strongly acid throughout the profile.

Typifying Pedon: Profile code no. is NE-S-20/38. (moist colors unless otherwise stated)

Location: Tambon Chan Thuk, Amphoe Pak Chong Changwat Nakhon Ratchasima.

Sheet Name: -

Sheet No.: 5255 II

Coordinate: 67 10/2908

Elevation: 280-320 m

Relief: gently undulating

Slope: 2-5%

Physiography: erosion surface

Parent material: residuum and colluvium and/or short transported materials from granitic rocks

Drainage: somewhat excessively drained

Permeability: moderate to rapid

Runoff: medium to rapid

Ground water depth: >2.0 m

Flooding depth: -

Duration: -

Frequency: -

Annual rainfall: 1,100-1,300 mm

Mean temp: 26-28 °C

Climate type: Tropical Savannah

Natural vegetation and/or land use: low open dipterocarp forest and poor natural pasture; some parts are cleared for upland crops, some spots are used for road-building materials

Described by: C. Changprai

Date: 1971

Revised by:

Horizon	Depth (cm)	Description
A	0-12	Very dark grayish brown (10YR 2/2) loamy sand; weak fine granular at upper most and single grain in lower part of the horizon; loose, nonsticky, nonplastic; many medium interstitial pores and few fine and medium tubular pores; many fine and few medium roots; 5-10 percent medium quartz grain (Ø 2-5 mm); medium acid (field pH 6.0); clear, smooth boundary.
AC	12-23	Dark grayish brown (10YR 4/2) loamy sand; single grain; very friable, nonsticky, nonplastic; many fine and few medium roots; many fine, medium and large interstitial pores; 10-15 percent subangular quartz fragment (Ø 2-5 mm); medium acid (field pH6.0); gradual, smooth boundary.

C1	23-55	Pale brown (10YR 6/3) loamy sand; very weak coarse subangular blocky breaking into single grain; friable, nonsticky and nonplastic; many fine, medium and large interstitial pores; common fine roots; 15-20 percent subangular and subrounded quartz fragments (\emptyset 2-5 mm); strongly acid (field pH 5.5); gradual, smooth boundary.
C2	55-100+	Very pale brown (10YR 7/3) loamy sand; single grain; friable, nonsticky and nonplastic; many fine, medium and interstitial pores; few medium roots; 20-30 percent subangular and subrounded quartz fragments (\emptyset 2-5 mm); strongly acid (field pH 5.5).

Type Location: The pedon were first described Tambon Chantuk Amphoe Pakchong Changwat Nakhon Ratchasima

Range of Profile Features:

The thickness of an A horizon varies from 10 to 25 cm and has 10YR or 7.5YR hues, values of 2 to 4 and chromas of 2 or 1. Structure is single grain and/or weak fine blocky. The pH values vary from 6.0 to 7.0.

The C horizon has 7.5YR or 10YR hues, values of 5 to 7 and chromas of 3 to 4. Structure is single grain and/or weak coarse blocky. The pH values vary from 5.5 to 6.5.

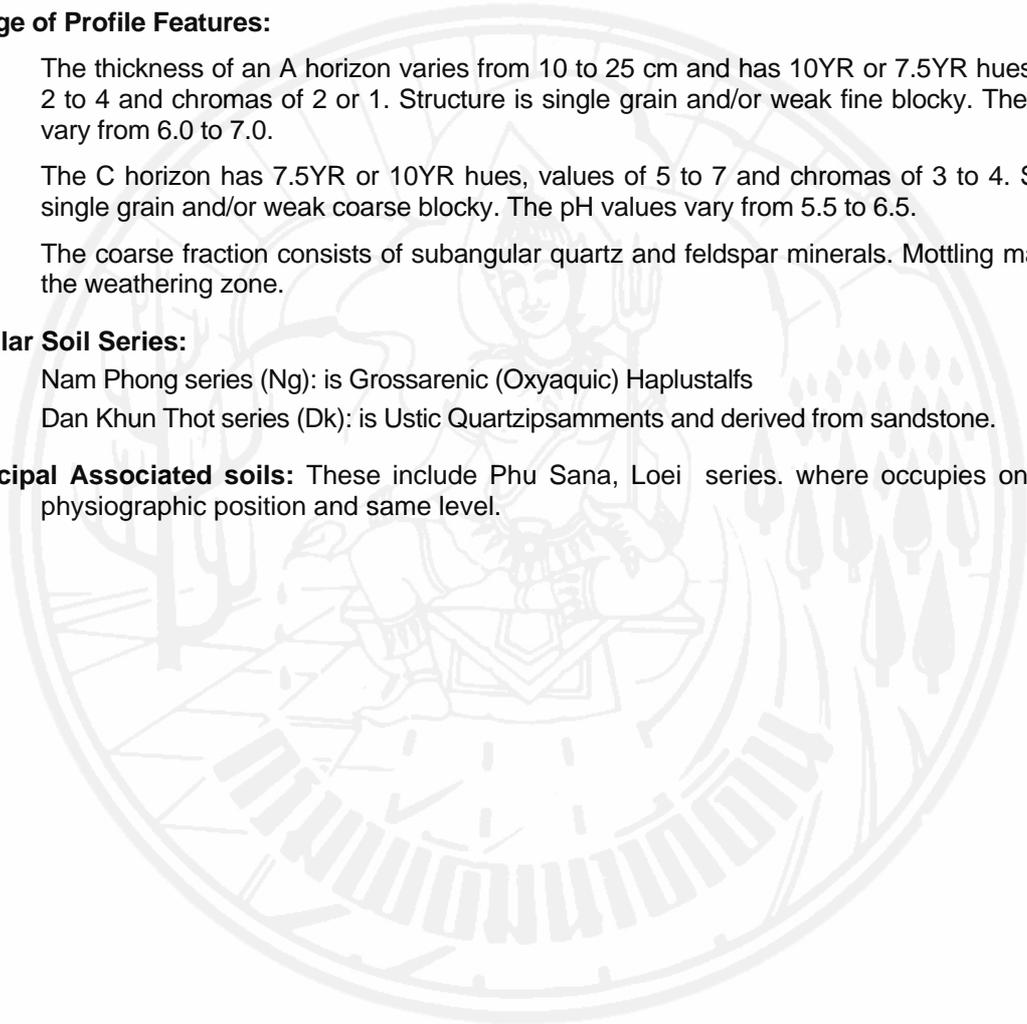
The coarse fraction consists of subangular quartz and feldspar minerals. Mottling may occur in the weathering zone.

Similar Soil Series:

Nam Phong series (Ng): is Grossarenic (Oxyaquic) Haplustalfs

Dan Khun Thot series (Dk): is Ustic Quartzipsamments and derived from sandstone.

Principal Associated soils: These include Phu Sana, Loei series. where occupies on the same physiographic position and same level.



ANALYSIS RESULTS

Profile code no.:NE-S-20/38

(oven dry basis)

Soil series : Chan Thuk (Cu)

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	1:1			
			sand	silt	clay	vc	c	m	f	vf	result	estim ¹	water	KCl			
	0-12	A	87.0	6.0	7.0						ls	ls	6.5	5.4	0.9	7.0	66
	12-23	AC	87.0	8.0	5.0						ls	ls	5.8	4.5	0.8	2.8	30
	23-55	C1	85.0	8.0	7.0						ls	ls	6.1	4.5	0.9	2.4	24
	55-100+	C2	85.0	9.0	6.0						ls	ls	6.2	4.8	0.8	1.6	21

Depth (cm)	Air dried to oven dried	C %	N %	Exchange capacity and cations (cmol ₍₊₎ kg ⁻¹)										Base satur ¹ (%)		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	0.6	0.57		2.70	0.60	0.10	0.10	3.50	2.00	5.50	3.60	51.4	97	64			0.03	
12-23	0.8	0.22		0.90	0.20	0.10	0.10	1.30	0.80	2.10	2.50	50.0	52	62			0.02	
23-55	1.0	0.13		0.40	0.30	0.10	0.10	0.90	0.60	1.50	1.70	24.3	53	60			0.02	
55-100+	0.5	0.02		0.30	0.20	0.05	0.10	0.65	0.20	0.85	1.00	16.7	65	76			0.01	