

Proposed by P. Vijarnsorn, 1974
Revised by :
P. Vijarnsorn and staffs, 1988
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CHALONG SERIES

Field Symbol: Chl

Distribution: Occupies moderate extent in Peninsular Thailand and in Southeast Coastal of Thailand.

Setting: Chalong soils are formed from granite on granitic terrain (denudation surface). Relief is nearly level to undulating with slope ranges from 1 to 12 percent. Elevation ranges from 10 to 40 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am') or Tropical Rain Forest (Koppen 'Af'). Average annual precipitation is from 1,500 to 3,000 mm. Average annual air temperature is 26 °C to 28°C.

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

Vegetation and Land Use: Mainly used for para rubber, oil palm, coconut, coffee, pine apple and fruit trees.

Characteristic Profile Features: Chalong series is a member of the fine-loamy, kaolinitic, isohyperthermic Typic Kandiodults. They are very deep soils and are characterized by strong brown, yellowish brown or brownish yellow sandy loam surface or A horizon overlying strong brown or brownish yellow to reddish yellow sandy clay loam kandic B horizon. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.5 throughout the profile.

Typifying Pedon: Chalong sandy loam – coconut, oil palm and para rubber plantation, Ban Na Bon, Amphoe Muang, Changwat Phuket, 10 m above mean sea level, 1 to 2 percent slopes (sheet name Changwat Phuket sheet number 4634 I).

Profile Code Number: S-63/26, described by C. Pintip, 5 December 1974 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
Ap 0-10	Dark brown to brown (10YR4/3) sandy loam; weak fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; very few very fine interstitial pores; few very fine roots; strongly acid (field pH 5.5); gradual smooth boundary.
BA 10-37	Dark grayish brown (10YR4/4) sandy clay loam; weak fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; very few very fine interstitial pores; very few very fine and medium roots; some pieces of charcoal; strongly acid (field pH 5.5); clear smooth boundary.
Bt1 37-58	Yellowish brown (10YR5/6) sandy clay loam; moderate medium and coarse subangular blocky structure; firm, sticky and slightly plastic; few thin cutan on ped faces; common fine interstitial pores; very few very fine roots; some pieces of charcoal; very strongly acid (field pH 5.0); gradual smooth boundary.
Bt2 58-92	Strong brown (7.5YR5/8) sandy clay loam; moderate medium and coarse subangular blocky structure; firm, sticky and slightly plastic; few thin cutan on ped faces; common very fine interstitial and few fine tubular pores; very few very fine roots; krotovinas activities; very strongly acid (field pH 5.0); gradual smooth boundary.
Bt3 92-140	Strong brown to yellowish brown (7.5-10YR5/8) sandy clay loam; moderate medium and coarse subangular blocky structure; firm, sticky and plastic; few thin cutan on ped faces; few very fine interstitial pores; very strongly acid (field pH 5.0).
Bt4 140-160	Strong brown (7.5YR5/8) slightly gravelly clay loam; very strongly acid (field pH 5.0).
Bt5 160-200	Strong brown (7.5YR5-6/8) red (2.5YR4/8, plinthite) and yellow (10YR7/6) slightly gravelly clay loam.

Remarks: 140-200 cm described and corrected by auger and gravels composed of quartz.

Type Location:

Name of village, Ban Chalong, Amphoe Muang, Changwat Phuket.

Range of Profile Features:

The surface or A horizon sandy loam texture (sandy clay loam may occurred) is 10 to 20 cm in thickness and has 10 YR or 7.5YR hues, values of 5 or 6 and chromas of 6 or 8. Structure is fine subangular blocky structure. Very strongly acid to strongly acid, reaction values range from 5.0 to 5.5.

The subsurface of kandic B horizon sandy clay loam texture (sandy clay may occurred in deeper subsoil) has 10 YR or 7.5 YR hues, values 5 or 6 and chromas 6 or 8. Structure is weak fine and medium subangular blocky structure. Very strongly acid, reaction values range from 4.5 to 5.0.

Similar Soil Series:

Tha Sae series (Te): fine-loamy, kaolinitic, isohyperthermic Typic Kandiodults, sandstone derived soils.

Khlong Nok Krathung series (Knk): fine-loamy, kaolinitic, isohyperthermic Typic Kandiodults, brownish colored (10YR or 7.5YR 4-6/3-4).

Khuan Kalong series (Kkl): fine-loamy, kaolinitic, isohyperthermic Typic Kandiodults, coarse sand increased with depth and mixed colors within 150 cm from the soil surface.

Principal Associated soils:

Chalong series is associated with Thung Wa, Khlong Nok Krathung, Phangnga and Phuket series.

Thung Wa series: coarse-loamy, siliceous, subactive, isohyperthermic Typic Paleodults.

Phangnga series: fine, kaolinitic, isohyperthermic Typic Kandiodults, brown colors.

Phuket series: fine, kaolinitic, isohyperthermic Typic Kandiodults, red colors.

ANALYSIS RESULTS

Profile code No.: S-63/26

(oven dry basis)

Soil series: Chalong series (Chl)

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					
Pf-162	0-10	Ap	77.0	7.0	16.0						sl	sl	4.5	3.9	0.0	3.3	15
Pf-163	10-37	BA	69.5	8.5	22.0						scl	scl	4.8	4.1	0.0	3.2	9
Pf-164	37-58	Bt1	63.5	14.5	22.0						scl	scl	4.8	4.0	0.0	1.9	9
Pf-165	58-92	Bt2	48.5	16.0	35.5						scl	scl	4.8	4.0	0.0	1.6	9
Pf-166	92-140	Bt3	50.0	11.5	38.5						sc	scl	4.7	5.5	0.0	1.7	9

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	2.9	0.91	0.04	0.40	0.10	0.05	0.20	0.75	7.50	8.25	3.8	23.8	20	9			0.04	
10-37	1.2	1.10	0.04	0.30	0.10	0.02	0.20	0.62	10.50	11.12	4.8	21.8	13	6			0.02	
37-58	1.5	0.52	0.02	0.50	0.10	0.03	0.20	0.83	7.50	8.33	3.7	16.8	22	10			0.02	
58-92	1.6	0.36	0.02	0.50	0.10	0.02	0.20	0.82	6.80	7.62	3.6	10.1	23	11			0.02	
92-140	1.7	2.36	0.02	0.30	0.10	0.03	0.20	0.63	7.70	8.33	3.9	10.1	16	8			0.02	

Surveyor: C. Pintip

Date: Dec. 5, 1974

Reported by: W. Sirichuychoo

Date: Nov. 4, 1998