

Proposed By C. Changprai and staffs, 1973
Revised by :
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

BUENG CHANANG SERIES

Field Symbol: Bng

Distribution: Occupies some areas in Southeast Coast of Thailand.

Setting: Bueng Chanang soils derived from marl deposits on marl terrain. Relief is nearly level to undulating. Slope ranges from 2 to 12 percent. Elevation ranges from 80 to 120 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am). Average annual precipitation is from 1,500 to 3,400 mm. Average annual air temperature is 27°C.

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

Vegetation and Land Use: Original vegetation is tropical evergreen forest. Parts are cleared for cultivation such as cotton, papaya and cassava.

Characteristic Profile Features: The Bueng Chanang series is a member of the fine, mixed, superactive, isohyperthermic Fluventic Eutrudepts (soil taxonomy, 2003). They are shallow to a layer of secondary lime concretion or marl layer and are characterized by a dark reddish brown or dark brown clay surface or A horizon overlying a reddish brown or yellowish red clay cambic B horizon over a whitish secondary lime concretion or marl layer. Reaction is neutral to moderately alkaline at the surface, reaction values range from 7.0 to 8.0 and strongly alkaline, reaction values range from 8.0-8.5 in the subsoil.

Typifying Pedon: Bueng Chanang clay - cotton field, from nearby Ban Plaeng, Amphoe Pong Nam Ron, Changwat Chanthaburi, 100 m above mean sea level, 2 to 5 percent slopes (sheet number 5450 II).

Profile Code Number: SE-17/21, described by S. Kitiyarak and C. Chaengprai, 16 January 1973 (moist colors unless otherwise stated).

Horizon	Depth (cm)	Description
A	0-10	Dark brown (7.5YR3/2) clay; strong fine and medium granular structure at upper most of the layer and strong coarse subangular blocky breaking to strong fine and medium subangular blocky structure; very hard, sticky and plastic; many fine, common medium and coarse interstitial pores, few fine and medium tubular pores; common very fine, few fine and medium roots; moderately alkaline (field pH 8.0); clear smooth boundary.
Bw	10-36	Reddish brown (5YR4/4) clay; moderate coarse subangular blocky breaking to strong fine subangular blocky structure; slightly hard, sticky and plastic; many fine and common medium interstitial, few fine and medium tubular pores; distinct pressure faces; common fine, few medium and coarse roots; moderately alkaline (field pH 8.0); clear smooth boundary.
Ck	36-70 ⁺	Yellowish red (5YR4/6) clay with about 80 percent secondary lime concretion; moderately alkaline (field pH 8.0).

Type Location:

Name of village, Ban Bueng Chanang, Amphoe Pong Nam Ron, Changwat Chantaburi.

Range of Profile Features:

The surface or A horizon clay or silty clay is from 10 to 25 cm in thickness and has 7.5YR or 5YR hues, values 3 to 4 and chromas 2 to 4. Structure is moderate and strong granular and blocky. Moderately acid to moderately alkaline, reaction values range from 6.0 to 8.0.

The subsurface or cambic B horizon clay or silty clay has 5YR hues, values 4 or 5 and chromas 3 to 6 and 2.5YR hues, chromas 3 or 4 and chromas 3 to 6. Structure is moderate and strong subangular blocky. Neutral to strongly alkaline, reaction values range from 7.0 to 8.5.

The C horizon consists mainly of secondary lime concretions or marl layer and usually occurs within 50 cm of the surface.

Similar Soil Series:

Tha Khli series (Tk): loamy-skeletal, carbonatic, isohyperthermic Entic Haplustolls, ustic soil moisture regime, darker color in the subsoil.

Lam Narai series (Ln): fine, smectitic, isohyperthermic Vertic Haplustolls, ustic soil moisture regime, derived from basalt in association with limestone.

Principal Associated Soils:

These include O Lam Chiak, Pong Nam Ron, Tha Mai series and Slope Complex.

O Lam Chiak series (Oc): very-fine, mixed, active, isohyperthermic Typic Hapludalfs, moderately deep to multicolored of weathered and bed rock of shale or phyllite

Pong Nam Ron series (Pon): fine-loamy, mixed, active, isohyperthermic, shallow Typic Hapludolls, shallow to weathered basalt and bed rock between 50 to 100 cm from the soil surface.

Tha Mai series (Ti): fine, kaolinitic, isohyperthermic Typic Hapludox, very deep soils with red colored.

ANALYSIS RESULTS

Profile code No.: SE-17/21

(oven dry basis)

Soil series: Bueng Chanang series (Bng)

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					
Pd-1874	0-10	Ap	10.5	38.5	51.0						c	c	6.8	6.1	4.5	10.4	468
Pd-1875	10-36	Bw	11.0	31.5	57.5						c	c	7.0	6.1	4.2	3.9	278
Pd-1876	36-70+	Ck	16.5	25.5	58.0						c	vgc	7.8	6.6	24.7	5.2	184

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	3.8	4.91		42.90	3.20	1.50	0.40	48.00	8.60	56.60	53.2	104.3	90	85			1.42
10-36	6.1	3.51		42.00	1.40	0.90	0.40	44.70	3.70	48.40	46.9	81.6	95	92			1.79
36-70+	6.8	1.51		56.30	0.80	0.60	0.40	58.10	5.10	63.20	37.2	64.1	100	92			1.06

Surveyor: C. Chaengprai

Reported by: W Sirichuaychoo

Date: Jan. 16, 1973

Date: Nov. 20, 1998