

Proposed by: J.J. Scholten, 1970
Revised by:
1. N. Chorphaka, 1999
2. A. Potichan, 2004

BAN CHONG SERIES

Field Symbol: Bg

Distribution: Occupies moderate extent in the north of Thailand.

Setting: Ban Chong soils are formed from residuum and local colluvium from shale and metamorphic equivalents, also to a lesser extent occurring on old coalescing fans derived from fine particle old alluvium. Relief ranges from undulating to hilly. The climate is Tropical Savanna (Koppen 'Aw'). The average annual precipitation does not exceed 2,000 mm.

Drainage, Permeability and Runoff: Well drained. Runoff is slow to rapid. Permeability is estimated to be moderate.

Vegetation and Land Use: Mixed deciduous forest was originally the natural vegetation covered. However, most areas are presently cleared for upland crops and fruit trees such as corn, beans, tobacco, longan, lychee, mango etc.

Characteristic Profile Features: Ban Chong series is a member of fine, kaolinitic, isohyperthermic Typic (Kandic) Paleustults. They are very deep soils and are characterized by a dark grayish brown, dark brown loam or clay loam overlying a yellowish red to red clay argillic B horizon. Field pH value slightly decreases with depth which ranges from moderately acid (pH6.0) to very strongly acid (pH 4.5).

Typifying Pedon: Profile code no. is N-36/20 (moist colours unless otherwise stated).

Location: Ban San Sai Pu Yi, Tambon Pong Pa, Amphoe Mae Sai, Changwat Chiang Rai.

Sheet Name: Amphoe Mae Sai

Sheet No.: 4949 I

Coordinate: 917496

Elevation: 390 m (MSL)

Relief: gently undulating

Slope: 3 %

Physiography: dissected coalescing fan

Parent material: fine alluvial deposits

Drainage: well drained

Permeability: moderate

Runoff: slow

Ground water depth: >2 m

Flooding depth: -

Duration: -

Frequency: -

Annual rainfall: 1,733.5 mm

Mean temp.: 24 °C

Climate type: Tropical Savannah (Aw)

Natural vegetation or land use: corn, tobacco, peanuts

Described by: Thamrong and J.D. Cowie

Date: 24 January, 1969

Revised by: Aniruth Potichan

Date: 23 May, 2004

Horizon	Depth (cm)	Description
Ap	0-15/17	Dark brown (7.5YR3/2) clay loam, yellowish brown (10YR5/4) with strong brown (7.5YR5/6) patches when dry; moderate medium and fine subangular blocky in the upper part of the horizon and weak coarse subangular blocky structure in the lower part of the horizon; hard, very firm, sticky and plastic; very few fine hard, spherical ironstone nodules; few pieces of charcoal; many very fine and fine roots; moderately acid (field pH 6.0); abrupt and wavy boundary.
Bt1	15/17-65	Reddish brown to dark brown (5YR-7.5YR4/4) clay; moderate medium and fine subangular blocky structure; friable to firm, sticky and plastic; patchy thin cutans on ped faces, continuous thin cutans in few vesicular pores; common fine, hard, spherical ironstone nodules and weathered rock fragments, very few of the rock fragments are stone size; many very fine and fine roots; mainly in the top 14 cm of this horizon; very strongly acid (field pH 5.5); gradual and smooth boundary.

Bt2	65-96	Yellowish red (5YR4/8) clay; moderate medium and fine subangular blocky structure; friable, sticky and slightly plastic; patchy thin and continuous moderately thick cutans in vesicular pores; very few fine gravel of weathered rock fragments, few very fine and fine roots; strongly acid (field pH 5.5); gradual and smooth boundary.
Bw	96-130+	Strong brown (7.5YR5/6) clay; moderate medium and fine subangular blocky structure; firm, sticky and slightly plastic; few subangular and subrounded quartz grains and weathered rock fragments, few very fine black manganese nodules; few fine roots; strongly acid (field pH 5.5).

Type Location:

Ban Chong series was named for Ban Chong village, Pong Pa subdistrict, Mae Sai, district, Chiang Rai province at the site of the typifying pedon formerly was in the area of Ban Chong village.

Range of Profile Features:

Solum thickness always exceeds 1 m and is usually 2 m or more. Very few to few weathered rock fragments of shale, slate, some iron rich rocks and ironstone nodules may be encountered within the control section. The A horizon is about 10 to 20 cm thick and has 10YR to 7.5YR in hues, values 3 or 4 and chromas of 2 through 4 with clay loam or loam and occasionally sandy clay loam textures. Structure is weak to moderate fine and medium subangular blocky and frequently granular in the uppermost layer. The pH value is 5.5 to 6.5.

The argillic B horizon has clay or clay loam to clay textures; hues of 5YR through 2.5YR, values of 4 through 6 and chromas of 6 or 8. Soil structure is moderate to strong fine and medium blocky. The pH value is 4.5 to 5.5.

Similar Soil Series:

Chiang Saen series (Ce): derived from granite and hue 2.5YR or redder.

Loei series (Lo): derived from shale and granite and hue 5YR through 2.5YR.

Chiang Khong series (Cg): derived from intermediate igneous rocks and hue 5YR through 2.5YR.

Principal Associated Soils:

These include Chiang Khan, Li, Muak Lek, Tha Yang, Lat Ya, series on dissected erosion surfaces. On old coalescing fans Ban Chong soils are associated with soils developed from transported materials: Mae Rim, San Pa Tong, Mae Taeng series.

ANALYSIS RESULTS
(oven dry basis)

Profile code no.: NC-36/20

Soil series: Ban Chong (Bg)

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 ⁿ	water			
P-477	0-15/17	Ap	40.1	25.1	34.8						cl	cl	5.1	4.3	4.8	140
P-478	15/17-65	Bt1	33.2	20.4	46.4						c	c	4.9	4.1	2.5	55
P-479	65-96	Bt2	29.0	14.2	56.8						c	c	5.0	4.1	2.9	43
P-480	96-130+	Bw	26.1	21.0	52.9						c	c	5.7	4.1	3.7	49

Depth (cm)	Air dried to oven dried	C %	N %	Exchange capacity and cations (cmol _(c) kg ⁻¹)								Base satur ⁿ (%)		ECEC cmol _(c) kg ⁻¹ (B+D)	Al KCl extr. cmol _(c) 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			
0-15/17	2.3	1.54		2.10	1.70	0.20	0.30	4.30	14.90	19.20	11.6	33.3	37	22		0.03
15/17-65	2.9	0.84		0.90	0.70	0.10	0.20	1.90	14.40	16.30	9.7	20.9	20	12		0.01
65-96	4.1	0.48		0.50	0.70	0.10	0.20	1.50	12.60	14.10	9.7	17.1	15	11		0.01
96-130+	3.0	0.40		0.50	0.70	0.10	0.10	1.40	11.00	12.40	12.0	22.7	12	11		0.01

Surveyor: Thamrong and J.D. Cowie

Date: 24 January, 1969