

Proposed by P. Vijarnsorn, 1969
Revised by :
P. Vijarnsorn and staffs, 1988
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BAN THON SERIES

Field Symbol: Bh

Distribution: Occupies large extent along coastal zone in Peninsular Thailand and in Southeast Coast of Thailand.

Setting: Ban Thon soils are formed from on old beach or dune on lower part of old beach ridges or dune sand. They occurred on nearly level to gently undulating relief of old beach ridges and dune sand. Slope ranges from 1 to 5 percent. The climate is Tropical Monsoon (Koppen 'Am'). Average annual air temperature is from 26 °C to 28 °C. Average annual precipitation is from 1,500 to 3,000 mm.

Drainage, Permeability and Surface Runoff: Drainage is well drained over moderately well drained to somewhat poorly drained. Internal drainage is impeded by the spodic horizon. The ground water level fluctuates but is generally below 2 m during dry season, permeability is estimated to be rapid over slow and surface runoff is medium to slow.

Vegetation and Land Use: Many areas have a cover composed of *Melaleuca Leucadendron* and similar species with many bare patches. Parts are used for coconut, cashew nut and settlement.

Characteristic Profile Features: Ban Thon series is a member of the sandy, siliceous, superactive, isohyperthermic, ortstein Typic Haplorthods. They are moderately deep soils to cemented spodic materials and are characterized by a black or very dark gray loamy sand surface or A horizon overlying a light gray or white loamy sand or sand E horizon. The spodic or Bh horizon has a reddish brown, dark brown, dark yellowish brown or brown sandy loam or loamy sand texture between 50 to 100 cm from the soil surface. Under the spodic horizon is a yellowish brown or light gray with brownish yellow or strong brown mottled loamy sand or sand C horizon (spodic horizon meet within 200 cm from the soil surface). Very strongly acid to moderately acid, reaction values range from 5.0 to 6.0.

Typifying Pedon: Ban Thon loamy sand – cashew nut, from Amphoe Muang, Changwat Narathiwat, 1 to 2 percent slopes (sheet number 4725 II, coordinate: 872869).

Profile Code Number: S-64/27, described by Udom Pulsawath and staffs, 22 February 1979 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
A 0-18	Dark gray (10YR4/1) loamy sand; single grain; loose; nonsticky and nonplastic; plentiful fine roots, few medium and coarse roots; extremely acid (field pH 4.0); diffuse smooth boundary.
E1 18-51	Gray to light gray (10YR6-7/1) sand; single grain; loose; nonsticky and nonplastic; many fine interstitial pores; common fine roots; strongly acid (field pH 5.5); diffuse smooth boundary.
E2 51-76/80	White (10YR8/1) sand; single grain; loose; nonsticky and nonplastic; many fine interstitial pores; few fine roots; slightly acid (field pH 6.5); clear smooth boundary.
Bh1 76/80-106	Black (10YR2/1) and dark brown (7.5YR3/4) loamy sand; massive; firm, nonsticky and nonplastic; common fine interstitial pores; very few fine roots; very strongly acid (field pH 4.5); diffuse smooth boundary.
Bh2 106-136	Very dark gray (10YR3/1) and dark brown (7.5YR3-4/4) loamy sand; massive; friable, nonsticky and nonplastic; common fine interstitial pores; no roots; very strongly acid (field pH 4.5).

Type Location:

Name of village, Ban Thon, Amphoe Muang, Changwat Narathiwat.

Range of Profile Features:

The surface or A horizon sand or loamy sand with ranges from 10 to 30 cm in thickness and has colors 10YR or 7.5YR hues, values 3 or 4 and chromas 1 or 2. Structure is weak blocky breaking to single grain or single grain. Very strongly acid to moderately acid, reaction values range from 4.5 to 6.0.

The E horizon sand or loamy sand is variable in color, but normally has colors 10YR hues, values 6 to 8 and chromas 2 or less. Very strongly acid to moderately acid, reaction values range from 4.5 to 6.0.

The spodic or Bh horizon loamy sand or sandy loam meet within 200 cm, normally occurred between 50 to 100 cm from the soil surface. Colors range from 10YR, 7.5YR, 5YR hues, values 2 to 4 and chromas 2 to 4. Structure is massive or weak blocky breaking to single grain. Very strongly acid to moderately acid, reaction values range from 4.5 to 6.0.

The lower of spodic or C horizon loamy sand or sand is light gray with brownish yellow or strong brown mottled. Very strongly acid to moderately acid, reaction values range from 5.0-6.0.

Similar Soil Series:

Rayong series (Ry): isohyperthermic, uncoated Typic Quartzipsamments, strongly leached quartz sands, white or grayish color, no spodic horizon within 2 meter of the soil surface.

Bacho series (Bc): isohyperthermic, coated Typic Quartzipsamments, no spodic horizon within 2 meter of the soil surface, brown colors.

Principal Associated Soils:

These include Bacho and Rayong series. Bacho soils have not spodic horizon and brown colors. Rayong soils have no spodic horizon and white gray colors.

ANALYSIS RESULTS

Profile code No.: S-64/27

(oven dry basis)

Soil series: Ban Thon series (Bh)

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					
2-6161-	0-18	A	96.9	2.1	1.0	0.1	0.8	18.5	59.0	18.5	s	ls-s	4.5	3.4		4.8	20
2-6162-	18-51	E1	96.8	2.7	0.5	0.0	0.2	15.8	62.5	18.3	s	s	5.1	3.8		0.9	8
2-6163-	51-76/80	E2	96.8	2.2	1.0	0.3	0.4	15.7	57.8	22.6	s	s	5.5	4.8		0.7	5
2-6164-	76/80-106	Bh1	95.3	3.7	1.0	0.0	0.2	13.7	73.1	8.3	s	ls	4.8	4.2		38.8	8
2-6165-	106-136	Bh2	96.9	1.1	2.0	0.2	0.2	13.3	73.2	10.0	s	ls	4.7	4.3		18.8	65

Depth (cm)	Air dried to oven dried	C %	N %	Exchange capacity and cations (cmol ₍₊₎ kg ⁻¹)								Base satur ⁿ (%)		ECEC (B+D) cmol ₍₊₎ kg ⁻¹	Al KCl extr. (D) cmol ₍₊₎ kg ⁻¹	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)
0-18	0.2	2.05		0.80	0.30	0.04	0.30	1.44	6.30	7.74	3.9	390.0	37	19		0.03	
18-51	0.1	0.12		0.20	0.05	0.02	0.20	0.47	0.30	0.77	0.2	40.0	100	61		0.07	
51-76/80	0.1	0.10		0.10	0.03	0.01	0.20	0.34	0.10	0.44	0.2	20.0	100	77		0.00	
76/80-106	1.9	1.48		0.20	0.03	0.01	0.20	0.44	15.20	15.64	5.6	560.0	8	3		0.01	
106-136	5.0	1.08		0.20	0.05	0.02	0.30	0.57	9.50	10.07	3.2	160.0	18	6		0.03	

Surveyor: Udom Pulsawath & staff

Reported by: W. Sirichuaychoo

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