

Proposed by C.Changprai and staffs,
1973

Revised by :
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

NONG BON SERIES

Field Symbol: Nb

Distribution: Occupies small to moderate extent in the areas of Southeast Coast Thailand.

Setting: Nong Bon soils are formed from basalt and occurred on basaltic terrain. Relief is nearly level to undulating. Slope ranges from 1 to 12 percent. Elevation ranges from 20 to 40 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am'). Average annual precipitation is from 2,000 to 3,400 mm. Average annual air temperature is 27°C.

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

Vegetation and Land Use: Natural vegetation is a Tropical Evergreen Forest. Parts have been cleared for upland crop cultivation such as pineapple, cotton, papaya, corn and fruit trees.

Characteristic Profile Features: The Nong Bon series is a member of the fine, kaolinitic, isohyperthermic Typic Kandiodults (soil taxonomy, 2003). They are very deep soils and are characterized by a dark brown or dark grayish brown silty clay or clay surface or A horizon overlying a brown or dark brown clay or silt clay kandic B horizon. Reaction is moderately acid to neutral, reaction values range from 6.0 to 7.0 at the surface layer and very strongly acid to moderately acid, reaction values range from 5.0 to 6.0 in the subsoil.

Typifying Pedon: The Nong Bon clay loam - Tropical Evergreen Forest, from an area near Ban Siwi, King Amphoe Buao Rai, Changwat Chanthaburi, 30 m above mean sea level, 2 to 5 percent slopes. (sheet number 5448 I)

Profile Code Number: SE-18/14, described by C. Chaengprai and S. Kitiyarak, 28 May 1973 (moist colors unless otherwise stated).

Horizon	Depth (cm)	Description
A	0-15	Brown to dark brown (7.5YR4/4) clay loam; moderate fine and medium subangular blocky structure and fine granular structure at the upper most of the horizon; friable, slightly sticky and slightly plastic; many fine interstitial pores, common fine and medium tubular pores; many fine, common medium and few coarse roots; moderately acid (field pH 6.0); gradual smooth boundary.
Bw	15-65	Brown to dark brown (7.5YR4/4) clay loam; weak coarse subangular blocky structure; friable, sticky and slightly plastic; many fine interstitial and common fine tubular pores; few fine and medium roots; strongly acid (field pH 5.5); diffuse smooth boundary.
Bt1	65-120	Reddish brown to dark brown (5-7.5YR4/4) clay; weak coarse subangular blocky structure; friable, sticky and slightly plastic; thin patchy clay coating on ped faces; many fine interstitial and common fine tubular pores; few fine and medium roots; very strongly acid (field pH 5.5); diffuse smooth boundary.
Bt2	120-150	Reddish brown to dark brown (5-7.5YR4/4) clay; weak coarse subangular blocky structure; friable, sticky and slightly plastic; thin patchy clay coating on ped faces; many fine interstitial and common fine tubular pores; few fine and medium roots; very strongly acid (field pH 5.0).

Type Location:

Name of subdistrict, Tambon Nong Bon, Amphoe Bo Rai, Changwat Trat.

Range of Profile Features:

The surface or A horizon clay loam or clay is from 10 to 20 cm in thickness and has 7.5YR or 10YR hues, values 3 to 5 and chromas 2 to 4. Structure is moderate fine and medium blocky and granular. Textures of silty clay loam may occur. Moderately acid to neutral, reaction values range from 6.0 to 7.0.

The kandic B horizon has 7.5YR hues, values 4 or 5 and chromas 4 or 3. Structure is weak medium and coarse blocky. Very strongly acid to moderately acid, reaction values range from 5.0 to 6.0.

Similar Soil Series:

Tha Mai series (Ti): fine, kaolinitic, isohyperthermic Typic Hapludox, redder color in the subsoil.

Chok Chai series (Ci): very-fine, kaolinitic, isohyperthermic Rhodic Kandistox, redder color in the subsoil and has an ustic moisture regime.

Principal Associated Soils:

These include Tha Mai series.

ANALYSIS RESULTS

(oven dry basis)

Profile code No.: SE-18/14

Soil series: Nong Bon series (Nb)

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	KCl			
Pd-1950	0-15	A	19.5	64.5	16.0						sil	cl	4.4	4.0	1.6	84.4	129
Pd-1951	15-65	Bw	17.5	48.0	34.5						sicl	cl	5.1	4.8	2.0	91.2	38
Pd-1952	65-100	Bt1	13.0	34.5	52.5						c	c	5.8	5.0	0.8	89.4	27
Pd-1953	100-150	Bt2	10.0	24.0	66.0						c	c	5.6	4.9	1.3	69.2	24

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)				
				Ca	Mg	K	Na	cations (B)	acidity (A)	(B+A)	NH ₄ OAc (C)	100g Clay	B/Cx100	(Bx100)/(B+A)				
0-15	1.5	5.11		1.10	1.10	0.30	0.10	2.60	34.00	36.60	17.8	111.3	15	7			1.48	
15-65	4.8	2.34		0.20	0.20	0.10	0.30	0.80	27.20	28.00	9.4	27.2	9	3			0.07	
65-100	1.8	0.81		0.30	0.20	0.10	0.40	1.00	21.00	22.00	7.5	14.3	13	5			0.03	
100-150	2.3	0.36		0.20	0.20	0.04	0.30	0.74	19.30	20.04	6.5	9.8	11	4			0.03	

Surveyor: C. Caengprai & S. Kitiyarak

Reported by: W. Sirichuaychoo

Date: May 28, 1973

Date: Nov. 6, 1998