

Proposed by: -, 1977
Revised by:
1. N. Chorhaka, 1987
2. P. Wiwatwongwana, 2004

NAM LEN SERIES

Field Symbol: **Nal**

Distribution: Occupies small extent in the Central Highlands, mainly in Changwat Phetchabun.

Setting: Nam Len soils are formed from alluvium on the terrace. Relief is undulating to gently rolling which slopes range from 2 to 8%. Elevation is approximately from 130 to 220 m above sea level. The climate is Tropical Savannah ('Aw'). Average annual precipitation ranges from 1,100 to 1,600 mm. Mean annual air temperature ranges from 26 to 28 °C.

Drainage, Permeability and Runoff: Moderately well drained. Permeability is estimated to be moderate and surface runoff is medium. Ground water table falls below 2.5 m during the dry season.

Vegetation and Land Use: Mainly used for upland crops such as corn, sorghum, bean and chili.

Range of Profile Features: Nam Len series is a member of very fine, smectitic, isohyperthermic Aquertic Paleustalfs. They are very deep soils which characterized by a brown, dark brown or dark grayish brown clay loam to clay A horizon. An argillic B horizon is reddish brown to red which inturn overlies brown to grayish brown in deeper subsoil with clay texture. Reaction is strongly acid to slightly acid, very strongly acid to strongly acid which inturn overlies slightly acid to moderately alkaline in deeper subsoil. Mottles are brown or grayish brown fading to gray, light gray or light brownish gray in the deeper subsoil.

Typifying Pedon: Profile code no. is NC-47/129 (moist colors unless otherwise stated).

Location: Ban Sakae Ngam, Tambon Huai Yai, Amphoe Muang Changwat Phetchabun.

Sheet Name: Ban Huai Yai Nua

Sheet No.: 5241 I

Coordinate: -

Elevation: 170-180 m (MSL)

Relief: gently undulating

Slope: 2 %

Physiography: terraces

Parent material: alluvium

Drainage: moderately well drained

Permeability: moderate

Runoff: moderate

Ground water depth: >2 m

Flooding depth: -

Duration: -

Frequency: -

Annual rainfall: 1.124.7 mm

Mean temp.: 27.5 °C

Climate type: Tropical Savannah (Aw)

Natural vegetation or land use: upland crops such as corn, sorghum, bean and chili

Described by: N. Chorhaka

Date:

Revised by: Phusit Wiwatwongwana

Date: 24 May, 2004

Horizon	Depth (cm)	Description
Ap	0-28	Dark brown (7.5YR3/2) silty clay; moderate fine subangular blocky structure; friable, sticky, plastic; many very fine and fine roots; medium acid (field pH 6.0); clear, smooth boundary.
Bt1	28-53	Reddish brown (5YR4/3-4) clay; moderate fine subangular blocky structure; friable, sticky, plastic; moderately thick continuous clay coatings on ped faces and in pores; common very fine and fine roots; strongly acid (field pH 5.5); clear, smooth boundary.
Bt2	53-87	Reddish brown (2.5YR4/4) clay; many fine prominent mottles of brown (7.5YR5/2); moderate medium subangular blocky structure; friable, sticky, plastic; moderately thick continuous clay coatings on ped faces and in pores; common very fine and fine roots; very strongly acid (field pH 5.0); clear, smooth boundary.

Bt3	87-150	Red (2.5YR4/8) clay; many medium prominent mottles of brown (7.5YR5/2); moderate coarse subangular blocky structure; firm, sticky, plastic; patchy thin clay coatings on ped faces and in pores; few very fine roots; few slickensides; moderately acid (field pH 6.0); diffuse, smooth boundary.
BC	150-180+	Brown (7.5YR4/4), brownish yellow (10YR6/8) and light gray (10YR7/2) clay; weak very coarse subangular blocky structure; very firm, sticky, plastic; many slickensides; neutral (field pH 7.0).

Type Location:

The Nam Len series was named for Ban Nam Len, Amphoe Lom Sak, Changwat Phetchabun in which soils of this series were first described.

Range of Profile Features:

The thickness of an A horizon varies from 15 to 30 cm and has 7.5YR or 10YR hues, values of 3 to 5 and chromas of 2 to 4. Structure is moderate fine and medium subangular blocky. Field pH values range from 5.5 to 6.5.

The argillic B horizon has 5YR to 2.5YR hues, values of 3 to 5 and chromas of 3 to 8. Structure is moderate medium and coarse subangular blocky. Field pH values; range from 4.5 to 5.5. In the deeper subsoil, the color will become 7.5YR or 10YR hues, values of 4 to 5, chromas of 2 to 4 and pH value is 6.5 to 8.0.

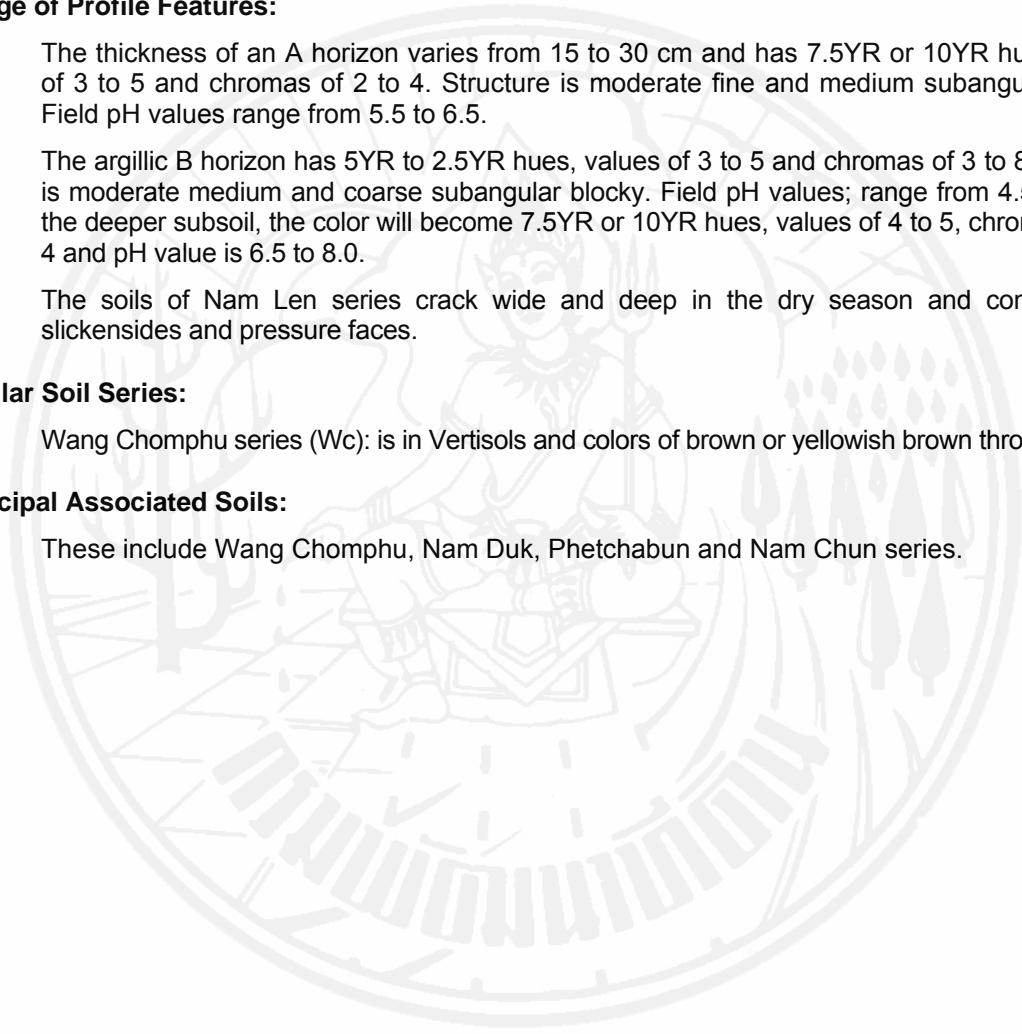
The soils of Nam Len series crack wide and deep in the dry season and contain much slickensides and pressure faces.

Similar Soil Series:

Wang Chomphu series (Wc): is in Vertisols and colors of brown or yellowish brown throughout.

Principal Associated Soils:

These include Wang Chomphu, Nam Duk, Phetchabun and Nam Chun series.



ANALYSIS RESULTS
(oven dry basis)

Profile code no.: NC-47/129

Soil series: Nam Len : Nal

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			
6-16390	0-28	Ap	8.4	42.8	48.8	0.1	0.3	0.5	0.3	7.2	sic	sic	5.1	4.2		5.3	248
6-16391	28-53	Bt1	5.8	28.7	65.5	0.8	0.5	0.3	0.1	4.1	c	c	4.7	3.6		2.0	101
6-16392	53-87	Bt2	4.1	37.5	58.4	0.0	0.0	0.6	0.3	3.2	c	c	6.4	5.2		3.8	84
6-16393	87-150	Bt3	8.1	28.0	63.9	0.1	0.4	0.9	0.7	6.0	c	c	5.9	3.6		2.6	112
6-16394	150-180	BC	3.8	31.7	64.5	0.1	0.1	0.4	0.1	3.1	c	c	5.6	4.5		10.2	124

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)				
															B/Cx100			
0-28	6.5	2.61		16.20	10.50	0.80	0.40	27.90	21.80	49.70	40.8	83.6	68	56			0.47	
28-53	9.1	1.15		12.10	8.80	0.30	0.60	21.80	30.30	52.10	42.1	64.3	52	42			0.30	
53-87	5.8	0.61		19.60	7.20	0.20	0.90	27.90	7.60	35.50	31.1	53.3	90	79			0.29	
87-150	10.4	0.47		21.60	12.20	0.30	2.10	36.20	22.50	58.70	49.4	77.3	73	62			0.20	
150-180	10.1	0.17		35.00	15.30	0.20	1.30	51.80	11.60	63.40	52.3	81.1	99	82			0.29	

Surveyor: N. Chorphaka