

Proposed by: N. Chorhaka, 1983
Revised by:
1. N. Chorhaka, 1988
2. P. Wiwatwongwana, 2004

NAM CHUN SERIES

Field Symbol: Ncu

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

Setting: Nam Chun series are formed from alluvium on the terrace. Relief is nearly level to undulating which slopes range from 1 to 5 percent. Elevation is approximately from 100 to 200 m above sea level. The climate is Tropical Savannah (Koppen '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 relatively slow and surface runoff is medium. Ground water table falls below 2.5 m during the dry season.

Vegetation and Land Use: Mainly covered by dipterocarp forest, bush and shrub and partly cleared for upland crops.

Characteristic Profile Features: Nam Chun series is a member of clayey-skeletal, mixed, active isohyperthermic Aquic Haplustalfs. They are shallow soils to gravels which occur within 50 cm of the soil surface. They are characterized by a dark brown, brown or dark grayish brown sandy loam or loamy sand A horizon and reddish brown to yellowish red in the upper B horizon, which in turn overlies brown, strong brown to grayish brown very gravelly clay loam to very gravelly clay over clay or clay loam in the lower B horizon. The layer of gravels is about 50 cm thick. Reaction is very strongly acid to medium acid in the surface horizon and medium acid to neutral grading to moderately alkaline in deeper subsoil. Mottles are strong brown, yellowish red or red in the top and brown, gray or light gray in the subsoil.

Typifying Pedon: Profile code no. is NC-47/126 (moist colors unless otherwise stated).

Location: Near Ban Nam Om, Tambon Nam Chun, Amphoe Lom Sak Changwat Phetchabun.

Sheet Name: Amphoe Lom Kao

Sheet No.: 5242 IV

Coordinate: -

Elevation: 160 m (MSL)

Relief: gently undulating

Slope: 2 %

Physiography: terraces

Parent material: old alluvium

Drainage: moderately well drained

Permeability: slow

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: dipterocarp forest, bush, shrub and upland crops

Described by: N. Chorhaka

Date:

Revised by: Phusit Wiwatwongwana

Date: 24 May, 2004

Horizon	Depth (cm)	Description
Ap	0-12/20	Dark brown (7.5YR3/4) and yellowish red (5YR5/6) loamy sand; weak fine and medium subangular blocky structure; friable, nonsticky, nonplastic; many very fine and fine roots; strongly acid (field pH 5.5); clear, wavy boundary.
Bt1	12/20-32	Yellowish red (5YR5/6) and strong brown (7.5YR5/6) very gravelly sandy clay loam; weak fine and medium subangular blocky structure; friable, sticky, plastic; patchy thin clay coatings on ped faces and around gravels; many very fine and few medium roots; gravels about 70% are rounded and subangular of mostly quartzite and sandstone, with diameter 0.5-5 cm and few laterite nodules; strongly acid (field pH 5.5); clear, smooth boundary.
Bt2	32-43/52	Light gray (10YR7/2) very gravelly clay; many fine prominent red (2.5YR4/8) and many fine distinct strong brown (7.5YR5/8) mottles; weak coarse

subangular blocky structure; very firm, sticky, plastic; patchy thin clay coatings on ped faces and around gravels; common very fine and few medium roots; gravels about 50-60% are rounded and subangular with diameter up to 5 cm, mostly quartzite and sandstone few lateritic nodules: moderately acid (field pH 6.0); clear, wavy boundary.

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| Bt3 | 43/52-60/68 | Strong brown (7.5YR5/6) clay; common fine and medium distinct brown (7.5YR5/2) and few fine prominent red (2.5YR4/8) mottles; moderate coarse subangular blocky structure; very firm, sticky, plastic; broken moderately thick clay coatings on ped faces; few very fine roots; few slickensides; few rounded and subangular gravels diameter from 5 to 10 cm; slightly acid (field pH 6.5); clear, wavy boundary. |
| BC1 | 60/68-132 | Brown (7.5YR5/4) slightly gravelly clay loam; few fine distinct pinkish gray (7.5YR6/2) mottles; clay mixed with weathered shale, sandstone and andesite; moderately alkaline (field pH 8.0); clear, smooth boundary. |
| BC2 | 132-180+ | Dark brown (7.5YR4/2) clay loam mixed with weathering rock probably andesite; moderately alkaline (field pH 8.0). |

Type Location:

Nam Chun series was named for Tambon Nam Chun, Amphoe Lom Sak, Changwat Phetchabun in which soils of this series were firstly described.

Range of Profile Features:

The A horizon is from 10 to 20 cm thick and has 7.5YR or 10YR hue, values of 3 to 5 and chromas of 2 to 4. Structure is weak to moderate fine and medium subangular blocky. Field pH values range from 5.0 to 6.0.

The upper B horizon has hues of 5YR to 7.5YR, values of 4 to 5 and chromas of 3 through 8. The lower B horizon has hues of 7.5YR to 10YR, values of 4 to 5 and chromas of 2 through 6. Structure is weak to moderate medium and coarse subangular blocky. Field pH values range from 6.0 to 7.0 increasing to 8.0 in the deeper subsoil. Gravels are composed of mainly quartz and sandstone.

Similar Soil Series:

Mae Rim series (Mr): has gravels and cobbles throughout profile and lower pH value in the subsoil.

Principal Associated Soils:

These include Phetchabun, Warin, Nam Duk and Nam Len series on adjacent terraces.

ANALYSIS RESULTS
(oven dry basis)

Profile code no.: NC-47/126
Soil series: Nam Chun (Ncu)

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			
6-16373	0-12/20	Ap	79.3	15.7	5.0	6.3	7.9	19.0	9.1	37.0	ls	ls	5.2	4.1		2.4	16
6-16374	12/20-32	Bt1	67.5	4.1	28.4	22.9	11.3	12.9	9.0	11.4	scl	vg scl	6.0	3.8		1.2	25
6-16375	32-43/52	Bt2	44.7	12.5	42.8	18.2	11.1	7.5	1.9	6.0	c	vgc	6.3	3.8		1.8	37
6-16376	43/52-60/68	Bt3	29.7	17.9	52.4	6.0	5.0	4.8	0.8	13.1	c	c	5.5	4.1		2.0	52
6-16377	60/68-132	BC1	39.0	31.6	29.4	6.0	5.9	7.4	7.0	12.7	cl	sgcl	7.8	6.3		2.6	54
6-16378	132-180	BC2	36.8	29.0	34.2	1.2	1.9	5.5	0.8	27.4	cl	gcl	8.0	5.9		2.1	65

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)	AI 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			
0-12/20	0.4	0.35		2.10	0.70	0.04	0.20	3.04	3.30	6.34	4.4	88.0	69	48		0.15
12/20-32	2.7	0.25		4.40	2.40	0.06	0.60	7.46	7.30	14.76	10.9	38.4	68	51		0.07
32-43/52	5.8	0.26		8.80	5.50	0.10	1.30	15.70	9.20	24.90	21.5	50.2	73	63		0.11
43/52-60/68	6.1	0.28		14.30	8.60	0.10	1.70	24.70	10.80	35.50	30.2	57.6	82	70		0.16
60/68-132	6.3	0.16		28.10	10.70	0.10	2.10	41.00	3.80	44.80	34.4	117.0	100	92		0.71
132-180+	6.8	0.10		28.70	12.20	0.20	2.10	43.20	4.00	47.20	37.4	109.4	100	92		0.61

Surveyor: N. Chorphaka