Proposed by: F.R. Moormann, 1961 Revised by: 1. P. Hemsrichart, 1988 B. Boonsompopphan, 2. K. Malairotsiri, A. Suchinai, 2004

NAM PHONG SERIES

Field Symbol: Ng

- **Distribution:** Occupies moderate extent in Northeast and small extent in western part of Central Plain and in North Thailand.
- Setting: Nam Phong soils are formed from washed deposite from sandstone and occur on upper part of peneplain. Relief is undulating which slopes range from 3 to 10 percent. Elevation ranges from 100 to 350 m above sea level. Climate is Tropical Savanna (Köppen 'Aw'). The average annual precipitation is 1,100 to 1,500 mm. The mean annual temperature is from 25 to 28°C.
- Drainage, Permeability and Runoff: Well drained to somewhat excessively drained. Permeability and runoff are rapid.
- Vegetation and Land Use: Mainly low open dipterocarp forest; Parts are cleared for upland crops. Those crops are kenaf, cassava, water melon, sugarcane and corn.
- **Characteristic Profile Features:** The Nam Phong series is a member of the loamy, siliceous, isohyperthermic Grossarenic Haplustalfs. They are deep sandy soils and are characterized by a grayish brown or dark brown to brown loamy sand or sand A horizon overlying a pink or very pale brown loamy sand or sand E horizon. Yhe argillic B horizon occurs at some depth below 100 cm of the soil surface with a pinkish gray, pale brown or very pale brown sandy loam grading to sandy clay loam layers. Common distinct reddish yellow and/or yellowish red mottles occur in the subsoils. Reaction is strongly acid to medium acid over very strongly acid to strongly acid.

Typifying Pedon: Profile code no. is NE-N 30/53. (colors are for moist soil unless otherwise noted).

Location:	1 km north of Ba	n Na Yarn, Amphoe Nam Phong,C	Changwat Khon Kaen.							
Sheet Nar	ne: Amphoe Nar	n Phong	Sheet No.: 5561 II							
Coordinat	e: 495732		Elevation: 180 m							
Relief: und	dulating		Slope:: 6-8%							
Physiogra	aphy: upper part	of peneplain								
Parent ma	aterial: washed d	leposit from sandstone								
Drainage:	well drained		Permeability: rapid							
Runoff: ra	ipid		Ground water depth: >2 m							
Flooding	depth: -	Duration: -	Frequency: -							
Annual ra	infall:	Mean temp: 26-28 °C	Climate type: Tropical Savannah							
Natural ve	egetation and/or	land use: kenaf, grasses, dipteror	carp forest							
Described	l by: C.Jongpako	lee	Date: 10 June 1969							
Revised b	y:									
Horizon	Depth (cm)	D	escription							
Ар	0-15	Dark brown to brown (7.5 YR 4/2) sand, single grains; loose; nonsticky; nonplastic; many fine tubular pores; many fine and few medium roots; slighty acid (field pH 6.5); clear; smooth boundary.								
E1	15-42	Pink (7.5 YR 7/4); sand; s many fine tubular pores; few fine 6.0); diffuse; smooth boundary.	ingle grains; loose; nonsticky; nonplastic; e and coarse roots; medium acid (field pH							
E2	42-100	Pink (7.5 YR 7/4); sand; comr 6/8) mottle; single grains; loose pores; few fine roots; mediu boundary.	Description o brown (7.5 YR 4/2) sand, single grains; loose; nonsticky; any fine tubular pores; many fine and few medium roots; ield pH 6.5); clear; smooth boundary. YR 7/4); sand; single grains; loose; nonsticky; nonplastic; oular pores; few fine and coarse roots; medium acid (field pH smooth boundary. R 7/4); sand; common coarse distinct reddish yellow (5 YR ingle grains; loose; nonsticky; nonplastic; many fine tubular fine roots; medium acid (field pH 6.0); abrupt; smooth							

- Btg 100-120 Pinkish gray (5 YR 6/2) sandy loam; many fine distinct yellowish red (5 YR 5/8) mottle; weak fine subangular blocky structure; friable; slighty sticky; slighty plastic; patchy thin cutans on ped faces and in pores; many fine tubular pores; few fine roots; some sand spots; very strongly acid (field pH 4.5-5.0)
- **Type location:** The Nam Phong series was named for Amphoe Nam Phong, Changwat Khon Kaen in which soils of this series were first described.

Rang of Profile Features:

The thickness of an A horizon varies from 10 to 30 cm and 10YR or 7.5YR hues, value of 2 to 5 and chroma of 2 to 4. Structure is weak fine to medium blocky and/or single grain. Field pH value is from 5.0 to 6.5.

The E horizon has 10YR, 7.5YR hues, value of 5 to 7 and chromas of 3 to 4. Texture and structure are as above. Field pH value is from 5.0 to 6.0.

The B horizon occurs at some depth below 100 cm from the soil surface, has 10YR or 7.5YR hues, values of 5 to 7 and chromas of 2 to 4. Structure is weak fine and medium blocky. Field pH values vary from 5.0 to 6.5. Few iron-manganese concretions may occur in the subsoils.

Similar Soil Series:

- Ban Phai, (Arenic Kandiustualfs) which sandy texture less than 100 cm, and contain argillic B horizon.
- Maha Sarakham, (Oxyaquic Arenic Kandiustalfs) has brown color which chroma less than 4 in the sub soils.
- **Principal Associated Soils:** These include Ban Phai, Dan Khun Thot, Maha Sarakham, Huai Thalaeng and Chakkarat soils are on the same physiographic position whereas the Roi Et and Ubon soils are on the lower ones.

ANALYSIS RESULTS (oven dry basis)

Profile code no.:NE-S-30/53 Soil series : Nam Phong (Ng)

Lab	Depth	Horizon	Particle size distribution analysis (% by weight)									Texture pH		Н	CaCO ₃	P, mg kg ⁻¹	K, mg kg ⁻¹
No.	(cm)		USDA grading			Sand-fraction grading					Lab	Field	1:1	1:1	%	Bray 2	NH ₄ OAc
			sand	silt	clay	VC	С	m	f	vf	result	estim	water	KCI			
P-1300	0-15	Ар	89.5	9.5	1.0						S	ls	5.6	5.2	0.2	3.2	36
P-1301	15-42	E1	89.5	10.0	1.0						S	S	6.4	5.0	0.0	1.6	13
P-1302	42-100	E2	87.5	11.5	1.0		N				S	S	6.9	5.8	0.2	1.2	10
P-1303	100-120	Btg	74.5	11.5	14.0	1					sl	sl	5.0	3.8	0.0	1.8	30

Depth	Air dried	С	N	Exchange capacity and cations (cmol ₍₊₎ kg ⁻¹) Base satur ⁿ (%)										ur ⁿ (%)	ECEC	Al	Electrical
(cm)	to	%	%		X		2	SUM	Extr.	SUM	CEC	CEC	B/Cx100	(Bx100)/		KCI extr.	condut ^y
	oven dried			Са	Mg	к	Na	cations	acidity	(B+A)	NH₄OAc	100g		(B+A)	cmol ₍₊₎ kg ⁻¹	cmol ₍₊₎ kg ⁻¹	(ECx10 ⁶)
		Ē		Y		1		(B)	(A)		(C)	Clay			(B+D)	(D)	dS m ⁻¹
0	0.1	0.36	0.0	1.60	0.40	0.10	0.20	2.30	1.00	3.30	2.40	240.0	9	70			0.06
15-42	0.1	0.04	0.0	0.40	0.10	0.03	0.20	0.73	0.10	0.83	0.60	60.0	100	88			0.02
42-100	0.1	0.03	0.0	0.30	0.10	0.04	0.20	0.64	0.10	0.74	0.50	50.0	100	86	00,0		0.01
100-120	0.1	0.09	0.0	1.20	0.10	0.10	0.20	1.60	2.30	3.90	4.30	30.7	37	41			0.007

