

Proposed by F.R. Moormann, 1964
Revised by:
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

HUAI PONG SERIES

Field Symbol: Hp

Distribution: Occupies moderate extent in Southeast Coast of Thailand.

Setting: Huai Pong soils derived from alluvium from granite or equivalent rocks and occurred on granitic terrain. Relief is nearly level to undulating. Slope ranges from 1 to 12 percent. Elevation is from 30 to 80 m above mean sea level. The climate is transitional zone between Tropical Savanna (Koppen 'Aw') and Tropical Monsoon (Koppen 'Am'). Average annual precipitation is from 1,300 to 1,800 mm. Average annual air temperature is 27°C.

Drainage, Permeability and Surface Runoff: Drainage is well to moderately well drained, permeability is moderate and surface runoff is medium. Ground water level falls below 1 meter throughout the year.

Vegetation and Land Use: Mainly used for upland crops, cassava, corn, pineapple and para rubber cultivation. The original forest is mixed deciduous forest.

Characteristic Profile Features: The Huai Pong series is a member of the fine, kaolinitic, isohyperthermic Typic Kandiodults (soil taxonomy, 2003). They are very deep soils and are characterized by a grayish brown, brown or dark grayish brown coarse sandy loam surface or A horizon overlying a pale brown, light yellowish brown or very pale brown coarse sandy clay kandic B horizon. Moderately acid to neutral, reaction values range from 6.0 to 7.0 at the surface and strongly acid to slightly acid, reaction values range from 5.5 to 6.5 in the subsoil.

Typifying Pedon: Huai Pong sandy loam-cassava, Ban Suan Phatum Wong, Amphoe Muang, Changwat Chanthaburi, 50 m above mean sea level, 4 to 5 percent slopes (sheet number 5448 IV).

Profile Code Number: SE-17/42, described by Sirichai Kitiyarak, 30 April 1974 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
Ap 0-17	Very dark grayish brown (10YR3/2) sandy loam; moderate medium subangular blocky structure; firm, slightly sticky and nonplastic; common fine interstitial pores; many fine and common medium roots; few pieces of charcoal; very strongly acid (field pH 4.5); clear smooth boundary.
BA 17-40	Brown (10YR5/3) sandy clay with few fine quartz fragment; few to common fine strong brown (7.5YR5/6) mottles; moderate medium to coarse subangular blocky structure; firm, sticky and slightly plastic; common fine interstitial pores; common fine roots; very strongly acid (field pH 4.5); clear smooth boundary.
Bt1 40-68	Light yellowish brown (10YR6/4) gravelly clay with sand fraction; moderate fine and medium subangular blocky structure; firm, sticky and slightly plastic; thin clay coating on ped faces and in pores; common fine interstitial pores; gravels composed of granite and quartz coated by cementing agent; very strongly acid (field pH 5.0); clear smooth boundary.
Bt2 68-75 ⁺	Mixed Light yellowish brown (10YR6/4) strong brown (7.5YR5/6) and red (2.5YR4/8) gravelly clay with sand fraction; moderate fine and medium subangular blocky structure; firm, sticky and slightly plastic; thin clay coating on ped faces; common fine interstitial pores; gravels composed of medium granite and quartz coated by cementing agent with few to common fine and medium rounded and subrounded ironstone; very strongly acid (field pH 5.0).

Type Location:

Name of subdistrict, Tambol Huai Pong, Amphoe Muang, Changwat Rayong.

Range of Profile Features:

The surface or A horizon coarse sandy loam or sandy clay loam varies from 10 to 40 cm thick, has 10YR or 7.5YR hues, values 4 to 5 and chromas 2 or less. Structure is weak medium blocky. Moderately acid to neutral, reaction values range from 6.0 to 7.0.

The subsurface of kandic B horizon coarse sandy clay has 10YR hues, values 6 or 7 and chromas 3 to 6, but it has mainly 10YR 6/3-4 or 10YR 7/4 colors. The textures of gravelly sandy clay or gravelly clay may occur in deeper subsoil, usually below 1 meter of the surface. Coarse fraction consists of subangular and/or subrounded quartz fragments. Mottles of reddish and/or brownish colors may occur in the deeper subsoil. Structure is weak and moderate medium blocky. Very strongly acid to slightly acid, reaction values range from 5.0 to 6.5.

Similar Soil Series:

Phuket series (Pk): fine, kaolinitic, isohyperthermic Typic Kandiudults, redder color in the subsoil.

Phangnga series (Pga): fine, kaolinitic, isohyperthermic Typic Kandiudults, brown color in the subsoil.

Principal Associated Soil:

These include Sattahip, Thung Wa, Khlong Nok Krathung, La Harn, Phuket and Phangnga series.

Sattahip series (Sh): isohyperthermic, coated Typic Quartzipsamments.

Thung Wa series (Tg): coarse-loamy, siliceous, subactive, isohyperthermic Typic Paleudults.

Khlong Nok Krathung (Knk): fine-loamy, kaolinitic, isohyperthermic Typic Kandiudults.

La Harn series (Lh): fine-loamy, siliceous, subactive, isohyperthermic Typic Paleudults, gray color in the subsoil.

ANALYSIS RESULTS
(oven dry basis)

Profile code No.: SE-17/42
Soil series: Huai Pong series (Hp)

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					
Pe-1655	0-17	Ap	62.5	24.5	13.0						sl	sl	4.1	3.8		9.2	21
Pe-1656	17-40	BA	50.5	24.0	25.5						scl	sc	4.5	3.8		2.5	9
Pe-1657	40-68	Bt1	48.5	22.0	29.5						scl	gcws	4.6	3.8		1.6	9
Pe-1658	68-75+	Bt2	39.5	14.5	46.0						c	gcws	4.6	3.9		2.3	27

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)	AI 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)			
0-17	1.6	1.60		0.80	0.30	0.10	0.30	1.50	10.00	11.50	5.3	40.8	28	13			0.50
17-40	2.1	0.62		0.30	0.10	0.10	0.50	1.00	6.50	7.50	4.3	16.9	23	13			0.12
40-68	1.8	0.44		0.20	0.10	0.10	0.40	0.80	5.90	6.70	3.6	12.2	22	12			0.05
68-75+	2.2	0.32		0.40	0.10	0.10	0.40	1.00	6.20	7.20	4.3	9.3	23	14			0.06

Surveyor: S. Kitiyarak

Reported by: W. Sirichuaychoo

Date: April 30, 1974

Date: Nov. 24, 1998