

Proposed F.J. Dent, 1964
Revised by:
1. C. Changprai, 1987
2. S. Udomsri, 2004

HIN KONG SERIES

Field Symbol: Hk

Distribution: Occupies moderate extent on the eastern margins of the Central Plain, mainly in Changwat Nakhon Nayok and Saraburi.

Setting: Hin Kong soils are formed from alluvium and occur on low terraces or alluvial plain. Relief is flat to nearly flat with a micro-relief caused by the presence of abundant termite mounds. Slopes are about 1%. The climate is Tropical Savanna (Köppen 'Aw'). Mean annual precipitation ranges from 1,000 mm to 1,400 mm. Mean annual temperature is 27°C.

Drainage and Permeability: Somewhat poorly drained to poorly drained. Permeability and runoff are slow. These soils are flooded by impounded rainwater or river to depths of about 30 cm for about four months during the rainy season. Groundwater level falls below about 2 m from the soil surface during the dry season.

Vegetation and Land Use: Mainly used for broadcast rice cultivation.

Characteristic Profile Features: Hin Kong series is a member of the Fine-silty, mixed, subactive, isohyperthermic Typic Paleaquults. They are deep, strongly to medium acid soils and are characterized by a pale brown or brown silt loam A horizon, overlying a pale brown, grading to pinkish gray silt loam or silty clay loam argillic B horizon. This in turn overlies a gray silty clay or clay in the lower B horizon. Strong brown and yellowish brown mottles occur in the A and argillic B horizon; reddish mottles commonly occur in the lower B horizon. Black manganese coatings in pores or as nodules occur in the argillic B horizon.

Typifying Pedon: Profile code number is Code SE-11/17

Location: 200 west of road from Ban Na–Saraburi, Ban Rai Pho Hak, Tambon Khao Phoem, Amphoe Ban Na Changwat Nakhon Nayok.

Sheet Name: Changwat Nakhon Nayok

No.: 5237 IV

Coordinate: 252887

Elevation: 15 m (MSL)

Relief: nearly level

Slope: 1%

Physiography: terrace

Parent material: alluvium

Drainage: somewhat poorly drained

Permeability: slow

Runoff: slow

Ground water depth: >2 m

Flooding depth: 20-30 cm

Duration: 3 month

Frequency: every year

Annual rainfall: 2,009.3 mm

Mean temp: 28.4 °C

Climate type: Tropical Savannah

Natural vegetation and/or land use: paddy field

Other:

Described by: S. Udomsri

Date: 21 April, 1998

Revised by: S. Udomsri

Horizon	Depth (cm)	Description
A _{pg}	0-15/18	Mixed white and light gray (10YR8/1 and 10YR7/2) silt loam; common fine and medium distinct brownish yellow (10YR6/8) mottles; moderate weak fine and medium subangular blocky structure; slightly hard, friable, sticky, slightly plastic; common very fine and fine roots; moderately acid (field pH 6.0); clear, wavy boundary.
B _g	15/18-28	Mixed white and light gray (10YR8/1 and 10YR7/2) silt loam; many medium and coarse distinct brownish yellow (10YR6/6-8) mottles; moderate medium and coarse subangular blocky structure; slightly hard, friable, sticky, plastic; common very fine and fine roots; strongly acid (field pH 5.5); clear, smooth boundary.

Btg1	28-44	Mixed white and pale brown (10YR8/1 and 10YR6/3) silt loam; many medium and coarse distinct brownish yellow (10YR6/8), few fine distinct strong brown (7.5YR4/6) mottles; strong medium and coarse subangular blocky structure; hard, friable, sticky, plastic; patchy moderately thick cutan on ped faces and in pores; few very fine roots; few to common soft black Fe&Mn concretions; very strongly acid (field pH 5.0); clear, smooth boundary.
Btg2	44-82/86	Grayish brown (10YR5/2) silty clay loam; common medium distinct brownish yellow and yellowish brown (10YR6/8 and 10YR5/6) mottles; strong medium and coarse subangular blocky structure; very hard, firm, sticky, plastic; patchy moderately thick cutan on ped faces and in pores; common soft black Fe&Mn concretions; very strongly acid (field pH 5.0); clear, wavy boundary.
Btg3	82/86-140	Light brownish gray (10YR6/2) silty clay loam; many medium and coarse distinct pale brown and yellowish brown (10YR6/3 and 10YR6/8) mottles; strong medium and coarse subangular blocky structure; very hard, firm, very sticky, very plastic; patchy moderately thick cutan on ped faces and in pores; some organic matter coated on ped faces; strongly acid (field pH 5.5); clear, smooth boundary.
Btg4	140-200	Grayish brown (10YR5/2) silty clay loam; common fine and medium distinct yellowish brown (10YR6/8) mottles; strong coarse subangular blocky structure; slightly hard, firm, very sticky, very plastic; patchy moderately thick cutan on ped faces and in pores; strongly acid (field pH 5.5).

Type Location: Name of village, Ban Hin Kong, Tambon Hin Kong, Amphoe Nong Kae Changwat Saraburi

Range of Profile Features:

The A horizon is from 10 to 20 cm thick has 10YR hue, values of 4 to 6 and chroma of 3. Structure is weak coarse blocky and crumb in places, but may be platy in the upper layers. Field pH values range from 5.5 to 6.5.

The argillic B horizon has pale brown (10YR 6/3) colours at the upper transition but throughout the greater part of the horizon has 7.5YR or 5YR hues, values of 5 to 7 and chromas of 2 or less. Structure is weak coarse blocky and field pH values range from 5.0 to 5.5.

Similar Soil Series:

Lampang series (Lp): has higher values, chromas of 2 or less. Throughout the solum and base saturation more than 35 %

Manorom series (Mn): is a member of the fine family, dominant reddish mottles and plinthite in the argillic B horizon and base saturation more than 35 %.

Principal Associated Soils: These include Klaeng and Manorom series occupying similar to slightly lower positions on the low terraces.

ANALYSIS RESULTS

Profile code No.: SE-11/17

(oven dry basis)

Soil series : Hin Kong (Hk)

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 ¹	water	KCl				
416406	0-15/18	Apg	5.1	78.1	16.8	0.1	0.7	0.7	1.5	2.1	sil	sil	4.3	3.9		7.8	39	
416407	15/18-28	Bg	7.2	71.1	21.7	0.8	0.7	0.7	2.0	3.0	sil	sil	4.7	3.8		0.8	39	
416408	28-44	Btg1	7.8	68.2	24.0	0.8	1.1	1.1	2.5	2.3	sil	sil	4.9	3.6		0.8	39	
416409	44-82/86	Btg2	7.7	56.0	36.3	1.4	1.2	1.1	2.4	1.6	sicl	sicl	5.4	3.6		0.8	78	
416410	82/86-140	Btg3	4.1	51.0	44.9	0.0	0.2	0.7	1.2	2.0	sic	sicl	5.1	3.4		0.7	78	
416411	140-200	Btg4	6.9	53.9	39.2	0.4	0.3	0.6	1.9	3.7	sicl	sicl	5.2	3.4		1.0	78	

Depth (cm)	Air dried to oven dried	C %	N %	Exchange capacity and cations (cmol _(c) kg ⁻¹)										Base satur ¹ (%)		ECEC cmol _(c) kg ⁻¹ (B+D)	Al KCl extr. cmol _(c) kg ⁻¹ (D)	Electrical conduct ² (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)			
0-15/18	0.6	1.06	0.10	1.80	0.20	0.10	0.20	2.30	4.10	6.40	4.20	25.0	55	36	3.20	0.93		
15/18-28	0.8	0.20	0.04	1.00	0.20	0.10	0.30	1.60	4.30	5.90	4.50	20.7	36	27	3.20	1.59		
28-44	0.8	0.14	0.02	0.60	0.20	0.10	0.40	1.30	5.60	6.90	4.40	18.3	30	19	3.70	2.41		
44-82/86	1.4	0.11	0.02	0.30	0.20	0.20	0.80	1.50	8.80	10.30	9.20	25.3	16	15	6.60	5.07		
82/86-140	1.6	0.10	0.01	0.20	0.10	0.20	2.00	2.50	8.80	11.30	10.60	23.6	24	22	2.50	0.00		
140-200	1.2	0.07	0.01	0.20	0.10	0.20	1.60	2.10	8.20	10.30	8.90	22.7	24	20	6.70	4.61		