

Proposed by C. Changprai, 1973  
Revised by :  
P. Vijarnsorn and staffs, 1988  
W. Sirichuaychoo, 2004

## PONG NAM RON SERIES

Field Symbol: Pon

**Distribution:** Occupies a small extent in the areas of Southeast Coast of Thailand.

**Setting:** Pong Nam Ron soils derived from basalt and occurred on basaltic terrain. Relief is undulating to rolling. Slope ranges from 2 to 20 percent. Elevation ranges from 180 to 220 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am'). Average annual precipitation is from 2,000 to 3,400 mm Average annual air temperature is 27°C.

**Drainage, Permeability and Surface Runoff:** Drainage is well drained, permeability is rapid and surface runoff is rapid.

**Vegetation and Land Use:** Mainly covered by Tropical Evergreen Forest. Parts have been cleared for upland crop cultivation such as corn and cotton.

**Characteristic Profile Features:** The Pong Nam Ron series is a member of the fine-loamy, mixed, active, isohyperthermic, shallow Typic Hapludolls (soil taxonomy, 2003). They are shallow soils to a layer of weathered parent rock and are characterized by a dark brown or dark reddish brown loam surface or A horizon overlying a dark reddish brown or reddish brown clay or gravelly clay cambic B horizon which in turn overlies weathered basalt rock. Neutral to slightly alkaline, reaction values range from 6.5 to 7.5 at the surface layer and slightly acid to neutral, reaction values range from 6.5 to 7.0 in the subsoil.

**Typifying Pedon:** The Pong Nam Ron loam - Tropical Evergreen Forest, 12 km from Amphoe Pong Nam Ron to Refugee camp, Amphoe Pong Nam Ron, Changwat Chanthaburi, 200 m above mean sea level, 7 percent slopes(sheet number 5449I, coordinates 218428).

**Profile Code Number:** No.4, described by L. Momcharoen and W. Sirichuaychoo (moist colors unless otherwise stated).

Horizon	Depth (cm)	Description
Ap1	0-4	Brown (7.5YR5/2, dry) or very dark grayish brown (10YR3/2, moist) loam; moderate fine to medium granular structure; very hard, firm, slightly sticky and slightly plastic; many very fine to fine roots; neutral (field pH 7.0); clear smooth boundary.
Ap2	4-14	Brown (7.5YR5/2, dry) or dark brown (7.5YR3/2, moist) clay loam; weak medium subangular parting to moderate fine to medium granular structure; extremely hard, firm, slightly sticky and slightly plastic; common fine roots; slightly acid (field pH 6.5); clear smooth boundary.
Bw1	14-26	Light yellowish brown (10YR6/4, dry) or dark yellowish brown (10YR4/4, moist) clay loam; moderate medium subangular structure; extremely hard, firm, slightly sticky and slightly plastic; few fine roots; moderately acid (field pH 6.0); clear smooth boundary.
Bw2	26-43	Pale brown (10YR6/3, dry) or brown to dark brown (10YR4/3, moist) clay loam; moderate medium subangular structure; extremely hard, firm, slightly sticky and slightly plastic; coarse fragments, 10% larger than 19 mm mixed lithology; strongly acid (field pH 5.5); abrupt irregular boundary.
Cr	43-68	Brownish yellow (10YR6/6) and white (10YR8/2) weathered rock or saprolite; structureless; few medium roots in cracks.

Remarks: This profile is Benchmark soils of Thailand, October 1987.

### Type Location:

Name of district, Amphoe Pong Nam Ron, Changwat Chanthaburi.

### Range of Profile Features:

The surface or A horizon loam, clay loam, silty clay or clay, is 10 to 20 cm in thickness and has 7.5YR or 5YR hues, values 3 or 2 and chromas 2 to 4. Structure is moderate fine, medium coarse granular. Moderately acid to slightly alkaline, reaction values range from 6.0 to 7.5.

The upper cambic B horizon clay loam (silty clay loam may occur), has 7.5YR or 5YR hues, values 3 or 4 and chromas 3 to 6 in 5YR hues and chromas 2 to 4 in 7.5YR hue. The lower cambic B horizon has 5YR or 2.5YR hues, values 3 or 4 and chromas 3 to 6. Structure is granular and subangular blocky. Moderately acid to neutral, reaction values range from 6.0 to 7.0.

The C or R horizon usually occurs at some depth within 50 cm from the surface and consists of partly weathered basalt fragments.

### Similar Soil Series:

Surin series (Su): clayey-skeletal, kaolinitic, isohyperthermic Typic Rhodustalfs, ustic soil moisture regime.

Nong Bon series (Nb): fine, kaolinitic, isohyperthermic Typic Kandiodults, is very deep soils.

### Principal Associated Soils:

These include Tha Mai, Nong Bon, O Lam Chiak, Bueng Chanang and Phak Kat series.

Tha Mai series (Ti): fine, kaolinitic, isohyperthermic Typic Hapludox.

O Lam Chiak series (Oc): very-fine, mixed, active, isohyperthermic Typic Hapludalfs.

Bueng Chanang series (Bng): fine, mixed, semiactive, isohyperthermic Fluventic Eutrudepts.

Phak Kat series (Pat): fine, mixed, semiactive, isohyperthermic Plinthaquic Paleudalfs.

### ANALYSIS RESULTS (oven dry basis)

Profile code No.: No.4 (Benchmark Soil)  
Soil series: Pong Nam Ron series (Pon)

Lab No.	Depth (cm)	Horizon	Particle size distribution analysis (% by weight)								Texture		pH		CaCO <sub>3</sub> %	P, mg kg <sup>-1</sup> Bray 2	K, mg kg <sup>-1</sup> NH <sub>4</sub> OAc
			USDA grading			Sand-fraction grading					Lab	Field	1:1	1:1			
			sand	silt	clay	vc	c	m	f	vf	result	estim <sup>n</sup>	water	KCl			
	0-4	Ap1	42.7	33.3	24.0	2.8	3.3	7.3	16.0	13.3	l	l	5.9	5.8			
	4-14	Ap2	41.2	32.0	26.8	6.7	3.3	6.1	13.6	11.5	cl	cl	5.6	5.3			
	14-26	Bw1	41.6	31.0	27.4	6.7	4.5	6.7	12.8	10.9	cl	cl	5.2	4.9			
	26-43	Bw2	42.5	30.9	26.6	6.1	5.2	7.5	13.0	10.7	cl	cl	5.0	4.7			
	43-68	Cr	72.5	19.7	7.8	4.9	13.9	20.8	21.2	11.6	sl	athered	5.3	5.0			

Depth (cm)	Air dried to oven dried	C %	N %	Exchange capacity and cations (cmol <sub>(+)</sub> kg <sup>-1</sup> )								Base satur <sup>n</sup> (%)		ECEC cmol <sub>(+)</sub> kg <sup>-1</sup> (B+D)	Al KCl extr. cmol <sub>(+)</sub> kg <sup>-1</sup> (D)	Electrical conduct <sup>y</sup> (ECx10 <sup>6</sup> ) dS m <sup>-1</sup>	
				Ca	Mg	K	Na	SUM cations (B)	Extr. acidity (A)	SUM (B+A)	CEC NH <sub>4</sub> OAc (C)	CEC 100g Clay	B/Cx100				(Bx100)/(B+A)
0-4		3.06	0.21	12.30	4.10	0.30	0.10	16.80			19.2	80.0	88.0	19.1			
4-14		1.51	0.13	9.00	3.30	0.20	TR	12.50			16.2	60.4	77.0	16.2			
14-26		0.90	0.09	6.90	3.10	0.10	TR	10.10			15.6	56.9	65.0	15.6			
26-43		0.65		7.00	3.60	0.10	0.10	10.80			16.5	62.0	65.0	16.6			
43-68		0.20		12.00	5.00	0.10	0.20	17.30			19.7	252.6	88.0	19.7			

Surveyor: L. Moncharoen & W. Sirichuaychoo

Reported by: W. Sirichuaychoo

Date:

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