

Proposed by S. Charoenpong, 1973  
Revised by :  
P. Vijarnsorn and staffs, 1988  
W. Sirichuaychoo, 2004

## KRABI SERIES

Field Symbol: Kbi

**Distribution:** Occupies moderate extent in Peninsular Thailand and some areas in Southeast Coast of Thailand.

**Setting:** Krabi soils are derived from fine grain clastic rocks namely shale, phyllite or other equivalent rocks. They commonly occur on eroded hill, foothill slope or strath terrace (denudation surface). Relief is undulating to rolling with slopes range from 3 to 20 percent. Elevation is approximately 20 to 60 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am') or Tropical Rain Forest (Koppen 'Af'). Average annual precipitation is above 1,800 mm. Average annual air temperature is from 26°C to 28°C.

**Drainage, Permeability and Surface Runoff:** Drainage is well drained, permeability is estimated to be moderate and surface runoff is medium. Ground water level is below 2 m throughout the year.

**Vegetation and Land Use:** Originally, under Tropical Rain Forest, cleared for para rubber, oil palm, upland crops and fruit trees.

**Characteristic Profile Features:** The Krabi series is a member of the fine, kaolinitic, isohyperthermic Typic Kandiodults (soil taxonomy, 2003). They are very deep soils and are characterized by a dark brown or dark grayish brown loam or clay loam overlying yellowish red clay kandic B horizon. Matrix color of strong brown or yellowish brown may occur in lower kandic B horizon below 100 cm from the soil surface. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.5.

**Typifying Pedon:** Krabi clay loam - replanted para rubber plantation, At km 19 to 20, Ao Luek to Phra Saeng road, Ban Pak Ya, Tambon Khao Khaen, Amphoe Plai Pha Ya, Changwat Krabi, 60 m. above mean sea level, 2 to 5 percent slopes (sheet name Ban Bang Hian, sheet number 4726 II, coordinate 828403).

**Profile Code Number:** S-64/40, described by Prasat Rimchala and staffs, 25 January 1979 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
A 0-12	Dark brown to brown (10YR4/4) loam; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many fine and medium roots; strongly acid (field pH 5.5); gradual smooth boundary.
BA 12-25	Strong brown (7.5YR5/6) clay loam; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many fine and medium roots; very strongly acid (field pH 5.0); gradual smooth boundary.
Bt1 25-60	Yellowish red (5YR5/8) clay; moderate medium subangular blocky structure; hard, friable, sticky and plastic; broken moderately thick clay coating on ped faces and holes; many fine and few medium roots; very strongly acid (field pH 5.0); gradual smooth boundary.
Bt2 60-115	Yellowish red to red (2.5-5YR5/8) clay; weak fine and medium subangular blocky structure; hard, friable, sticky and plastic; broken moderately thick clay coating on ped faces; many fine roots; very strongly acid (field pH 5.0).

### Type Location:

Name of province, Changwat Krabi.

### Range of Profile Features:

The surface or A horizon clay loam or loam is approximately 10 to 15 cm in thickness and has 10YR or 7.5YR hues, values 3 to 4 and chromas 3 to 4. Texture of silt loam may also occur. Structure is moderate fine and medium subangular blocky. Very strongly acid to moderately acid, reaction values range from 5.0 to 6.0.

The kandic B horizon clay commonly has 5YR hues, values 4 to 5 and chromas 5 to 6 and rather have a uniformed color throughout the horizons. However, lower kandic B horizon may have 2.5YR hues with values of 3 to 4 and chromas of 6 to 8. Structure is moderate and strong medium and coarse subangular blocky. Very strongly acid to strongly acid, reaction values range from 5.0 to 5.5.

### Similar Soil Series:

Ao Luek series (Ak): very-fine, kaolinitic, isohyperthermic, Rhodic Kandiodox, kandic B horizon is redder colors and more clay.

Lamphu La series (Ll): fine, mixed, semiactive, isohyperthermic Typic Palehumults, the color of argillic B horizon is strong brown or yellowish brown.

Trat series (Td): fine, kaolinitic, isohyperthermic Typic Kandiodults, has ironstones between 50 to 100 cm from the soil surface (ironstones  $\geq$  35 percent).

### Principle Associated Soils:

These include Ao Luek and Lamphu La series. They may also occurred in association with Khlong Chak or Trat series where ironstone layers are developed.

Khlong Chak series (Kc): clayey-skeletal, kaolinitic, isohyperthermic Typic Kandihumults, has ironstones within 50 cm from the soil surface (clayey-skeletal soil).

#### ANALYSIS RESULTS

(oven dry basis)

Profile code No.: S-64/40

Soil series: Krabi series (Kbi)

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				
2-10288	0-12	A	51.3	32.7	16.0	0.4	1.1	9.5	11.0	29.3	l	l	7.5	5.9		6.0	57	
2-10289	12-25	BA	42.8	34.8	22.4	0.4	0.9	7.5	18.2	15.8	l	cl	5.6	4.7		3.9	23	
2-10290	25-60	Bt1	31.5	27.4	41.1	0.6	0.6	5.6	11.1	13.6	c	c	5.2	4.0		3.4	16	
2-10291	60-115	Bt2	27.2	25.0	47.8	0.6	0.7	4.4	11.3	10.2	c	c	5.4	4.1		4.6	14	

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)				
				0-12	2.1	1.83		5.10	3.20	0.10	0.20	8.60	2.10	10.70	6.9			
12-25	4.0	0.81		1.50	1.20	0.05	0.30	3.05	5.10	8.15	4.1	18.3	74	37			0.07	
25-60	5.7	0.69		0.80	0.50	0.04	0.30	1.64	7.60	9.24	4.8	11.7	34	18			0.03	
60-115	8.4	0.43		0.70	0.40	0.04	0.30	1.44	8.00	9.44	4.4	9.2	33	15			0.01	

Surveyor: P. Rimchala & staff

Reported by: W. Sirichuaychoo

Date: Jan. 25, 1979

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