

Proposed P. Vijarnsorn, 1972
Revised by :
P. Vijarnsorn and staffs, 1988
W. Sirichuaychoo, 2004

RANOT SERIES

Field Symbol: Ran
(abolished and change to Bangkok series)

Distribution: Occupies a small extent in Peninsular Thailand.

Setting: Ranot soils are formed from brackish sediment and occurred on coastal plain. Relief is level. Slope is less than 1 percent. Elevation ranges from 1 to 5 m above mean sea level. The climate is Tropical Monsoon (Koppen 'Am) or Tropical Rain Forest (Koppen 'Af'). Average annual precipitation is above 2,000 mm Average annual air temperature is from 26 °C to 28°C.

Drainage, Permeability and Runoff: Drainage is poorly drained, permeability is estimated to be slow and surface runoff is very slow. Ground water level stays within 1 meter almost throughout the year except during dry season. According to land use, free water lies on the surface throughout rainy season.

Vegetation and Land Use: Used almost exclusively for transplanted rice.

Characteristic Profile Features: The Ranot series is a member of the very-fine, mixed, semiactive, isohyperthermic Typic Endoaqualfs (soil taxonomy, 2003). They are very deep soils and are characterized by a grayish brown or brown silty clay loam or silty clay surface horizon overlying a gray or olive gray clay argillic B horizon. Mottles of brownish and yellowish occur throughout the profile. Very strongly acid to strongly acid, reaction values range from 4.5 to 5.5 in surface soil and neutral to moderately alkaline, reaction values range from 7.0 to 8.0 in subsoil.

Typifying Pedon: Ranot silty clay loam - paddy field, from Ban Chiung Sae, Amphoe Ranot, Changwat Songkhla, 5 m above mean sea level, 20 to 30 cm flooding depth, 1.25 m ground water table depth.

Profile Code Number: S-68/137, described by Pisoot Vijarnsorn, 24 April 1977 (moist colors unless otherwise stated).

Horizon Depth (cm)	Description
Apg 0-15	Mixed grayish brown (10YR5/2) and brown (10YR5/3) silty clay loam; common fine and medium prominent yellowish red (5YR5/6) mottles along roots channels; moderate medium subangular blocky structure; very hard, very firm, slightly sticky and slightly plastic; many fine roots; very strongly acid (field pH 5.0); clear smooth boundary.
Btg1 15-35	Grayish brown (10YR5/2) silty clay; common fine distinct dark brown to brown (10YR4/3) and few fine distinct dark brown to brown (7.5YR4/4) mottles; moderate coarse subangular blocky structure; very firm, sticky and plastic; patchy thick cutan along ped faces; common silt coat on some faces; few fine roots; strongly acid (field pH 5.5); clear wavy boundary.
Btg2 35-74	Light brownish gray (2.5Y6/2) and gray (10YR5/1) clay; common fine distinct light olive brown (2.5Y5/4) and common fine distinct brownish yellow (10YR6/6) mottles; weak coarse subangular blocky structure; firm, sticky and plastic; moderately thick cutan along channels; few medium roots; distinct slickenside along ped faces; common soft manganese and iron concretion; moderately alkaline (field pH 8.0); gradual smooth boundary.
Btg3 74-125	Light brownish gray (2.5Y6/2) clay; common fine distinct light olive brown (2.5Y5/4) common fine and medium distinct yellowish brown (10YR5/6) and few medium dark yellowish brown (10YR4/4) mottles; weak coarse subangular blocky structure; firm, sticky and plastic; moderately thick cutan along channels;

few medium roots; distinct slickenside along ped faces; common soft manganese and iron concretion; moderately alkaline (field pH 8.0).

Type Location:

Name of district, Amphoe Ranot, Changwat Songkhla.

Range of Profile Features:

The surface or A horizon clay loam is 10 to 20 cm in thickness and has 10YR hues, values 5 or 6 and chromas 2 or 3. Texture of clay may also occur. Structure is weak and moderate fine and medium subangular blocky. Strongly acid to slightly alkaline, reaction values range from 5.5 to 7.5.

The argillic B horizon has 10YR, 2.5Y or 5Y hues, values 5 to 7 and chromas less than 2. Structure is moderately medium and coarse angular or subangular blocky. Mottles of 7.5YR, 10YR or 2.5Y hues, values 5 or 6 and chromas 6 or 8 occur throughout the profile. Neutral to moderately alkaline, reaction values vary from 7.0 to 8.5.

Similar Soil Series:

Bangkok series (Bk): very-fine, smectitic, isohyperthermic Ustic Endoaquerts, has cambic B horizon and darker thick surface horizon.

Principal Associated Soils:

These include Bangkok and Bang Nara series.

Bang Nara series (Ba): fine, kaolinitic, isohyperthermic Typic Paleaquults.

ANALYSIS RESULTS

(oven dry basis)

Profile code No.: S-68/137

Soil series: Ranot series (Ran)

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 ⁿ	water				KCl
DN-7299	0-15	Apg	2.0	49.7	48.3						sic	sicl	4.8	3.5		26.8	125
DN-7300	15-35	Btg1	1.6	42.9	55.5						sic	sic	4.8	3.7		2.0	90
DN-7301	35-74	Btg2	0.7	35.5	63.8						c	c	6.4	5.2		3.0	129
DN-7302	74-125	Btg3	1.2	39.0	59.8						c	c	6.6	6.1		5.8	186

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)	Al 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)				
0-15	3.1	1.77		2.10	6.90	0.30	0.60	9.90	12.00	21.90	16.8	34.8	59	45			0.28	
15-35	3.9	1.18		3.40	11.70	0.30	1.60	17.00	14.80	31.80	14.5	26.1	100	53			0.69	
35-74	4.3	1.00		3.90	19.20	0.40	3.80	27.30	3.40	30.70	25.7	40.3	100	89			1.62	
74-125	4.8	1.02		4.90	21.10	0.50	5.30	31.80	3.40	35.20	27.0	45.2	100	90			2.58	

Surveyor: P. Vijarnsorn

Date: April 24, 1977

Reported by: W. Sirichuaychoo

Date: Oct. 26, 1998