MUREUNG SERIES

Established Series
PCS, JYH, UKT
10 Apr., 1977

The Mureung series are members of the fine, mixed, thermic family of Typic Paleudalfs [Cutanic Luvisols (Profondic Siltic Chromic) classified by WRB]. These soils have dark yellowish brown silt loam Ap horizons, dark yellowish brown silty clay BA horizons, dark yellowish brown silty clay Bt1 horizons, strong brown silty clay Bt2 horizons, and strong brown silty clay Bt3 horizons with red mottles. They occur on coastal lava plains derived from pyroclastic materials.

Typifying Pedon: Mureung silty clay loam-garlic (Colors are for moist soil).

Slope: 2-7%

Elevation: 22 m above m.s.l.

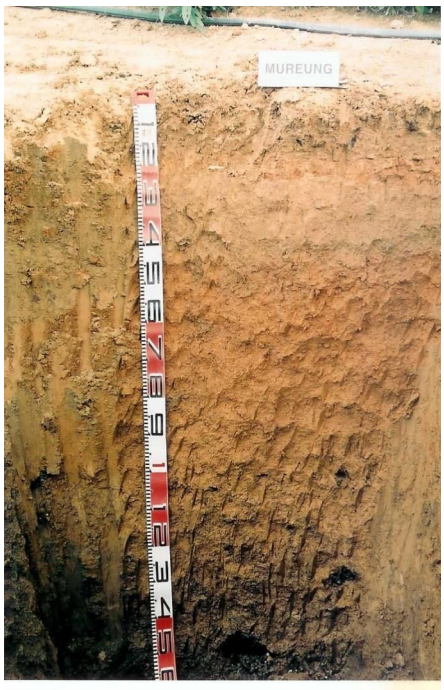
Soil moisture regime: Udic

Soil temperature regime: Thermic

Parent material: Pyroclastic materials

Diagnostic features: An ochric epipedon from a depth of 0 to 12 cm and an argillic horizon from a depth of 42 to 180 cm (An argic horizon from a depth of 42 to 180 cm by WRB).

Described by: Song, K. C., D. C. Noh, and S. J. Jung, 7 Sep., 2006.



Morphological properties of typifying pedon.

Ap - 0 to 12 cm. Dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; friable, sticky and plastic; few fine roots; few very fine pores; abrupt smooth

boundary.

BA - 12 to 42 cm. Yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable, slightly sticky and plastic; few very fine roots; common fine pores; abrupt smooth boundary.

Bt1 - 42 to 65 cm. Dark yellowish brown (10YR 4/6) silty clay; moderate coarse angular blocky structure; slightly firm, very sticky and very plastic; thin continuous clay cutans; few very fine roots; common fine pores; few worm holes; gradual smooth boundary.

Bt2 - 65 to 100 cm. Strong brown (10YR 5/8) silty clay; moderate coarse prismatic structure; slightly firm, very sticky and very plastic; thick continuous clay cutans; no roots; common fine pores; few medium Mn concretions; clear smooth boundary.

Bt3 - 100 to 180 cm. Strong brown (7.5YR 5/6) silty clay; moderate coarse angular blocky structure; common medium to coarse prominent red (2.5YR 5/6) mottles; firm, very sticky and very plastic; thick continuous clay cutans through worm holes; few fine pores; common coarse Mn concretions; severely weathered basaltic gravels and cobbles

The typifying pedon has an ochric epipedon from a depth of 0 to 12 cm and an argillic horizon from a depth of 42 to 180 cm. It has a base saturation (by sum of cations) of 35% or more at 125 cm below the upper boundary of the argillic horizon. That can be classified as Alfisol. It has udic soil moisture regime, and can be classified as Udalf. It does not have a densic, lithic, or paralithic contact within 150 cm of the mineral soil surface, does not clay decrease with increasing depth of 20% or more from the maximum clay content within 150 cm of the mineral soil surface, and has an argillic horizon with in 50% or more of the matrix of one or more subhorizons in its lower one-half, hue of 7.5YR or redder and chroma of 5 or more. It can be classified as Paleudalf. Also it meets the requirements of Typic Paleudalf.

The typifying pedon has more than 35% clay at the particle-size control section and has thermic soil temperature regime. Therefore it can be classified as fine, mixed, thermic family of Typic Paleudalf.

Type Location: About 50 meters north-west of the Office of Gosanbaengdeui Agricultural Association, Gosan Ri, Hangyeong Myeon, Jeju city, Jeju Do (126° 11' 23.7", 33° 17' 34.4").

Range in Characteristics: These soils have ochric epipedons and argillic horizons. The solum thickness ranges from 150 to 200 cm and depth to hard rock is more than 3 meters. Base saturation is more than 35 percent. Soil reaction ranges from strongly to medium acid. Ap horizons are brown or dark yellowish brown silt loam to silty clay loam. Argillic B horizons are strong brown, dark yellowish brown, or yellowish brown silty clay loam, silty clay, or clay.

Competing Series and Their Differentiae: These are the Susan, Gangjeong, and Donghong soils. The Susan soils occur on cinder cones. The Gangjeong soils are Mollic Subgroups and moderately well drained. The Donghong soils are Mollic Subgroups and occur on lava plains around cinder cones.

Setting: The Mureung soils occur on nearly level to sloping coastal lava plains and are derived from pyroclastic materials. Slopes range form 0 to 15 percent and dominant slopes are 2 to 7 percent.

Principal Associated Soils: The Daejeong, Gangjeong soils are associated in lower positions. The Yeongrag soils occur on similar physiographic positions.

Drainage and Permeability: Well drained. Runoff is slow, and permeability is very slow.

Use and Vegetation: Most of these soils are used for cultivated upland crops such as garlic, barley, and potato.

Distribution and Extent: The Mureung soils are of moderate extent in low elevated lava plains in the northwestern parts of Jeju Do.

Series Established: Seogwipo city, Jeju Do, 1975. **Revised,** Jeju city, Jeju Do, 2006.

Laboratory data sheets of typifying pedon.

Depth (cm)	Horizon	(--- Total ---)			(-- Clay --)		(-- Silt --)		(------- Sand -------)				
		Clay	Silt	Sand	Fine	Coarse	Fine	Coarse	VF	F	M	C	VC
		LT .002	.002 - .05	.05 - 2	LT .0002	LT .002	.002 - .02	.02 - .05	.05 - .10	.10 - .25	.25 - .50	.5 - 1	1 - 2
		- - - - - - - - - - - - Pct of < 2mm (3A1) - - - - - - - - - - - -											
0-12	Ap	27.1	64.3	8.6			26.3	36.0	1.3	1.8	1.7	2.8	0.9
12-42	BA	25.4	64.9	9.7			33.9	28.9	1.3	2.0	2.3	3.0	0.6
42-65	Bt1	39.7	57.3	3.0			22.3	32.9	0.5	0.5	0.6	1.0	0.4
65-100	Bt2	36.3	61.0	2.7			36.7	22.2	0.5	0.4	0.6	1.0	0.2
100-180	Bt3	36.7	60.3	3.0			40.7	17.7	0.5	0.7	0.7	1.0	0.1

Depth (cm)	Coarse Fractions(mm) Weight				>2mm Wt	Orgn C	Total N	Extr P	Total S	(-- Dith -Cit --) Extractable		
	2-5	5-20	20-75	.1-75	Pct of Whole					Fe	Al	Mn
	Pct of < 75mm (3B1)				Soil	6A1c Pct < 2mm	6B3a	6S3 g/kg	6R3a	6C2b Pct of < 2mm	6G7a	6D2a
0-12						1.09						
12-42						0.58						
42-65						0.48						
65-100						0.19						
100-180						0.08						

Depth (cm)	Ratio/Clay		Atterberg		(Bulk Density)			COLE	(- Water Content -)				WRD
	CEC	1500 kPa	Limits LL	PI	Field Moist	33 kPa	Oven Dry	Whole Soil	Field Moist	10 kPa	33 kPa	1500 kPa	Whole Soil
	8D1	8D1	4P1	4P	4A3a	4A1d	4A1h	4D1	4B4	4B1c	4B1c	4B2a	4C1
			Pct <0.4mm		- - g/cc - -			cm/cm	-- Pct of <2mm --				cm/cm
0-12	0.63												
12-42	0.61												
42-65	0.45												
65-100	0.48												
100-180	0.56												

Depth (cm)	(NH4OAc Extractable Bases)					Acid-	Extr	(----- CEC -----)			Al
	Ca 5B5a 6N2e	Mg 5B5a 6O2d	K 5B5a 6Q2b	Na 5B5a 6P2b	Sum Bases	ity 6H5a	Al 6G9a	Sum Cats 5A3a	NH4-OAc 5A8b	Bases + Al 5A3b	Sat 5G1
	- - - - - - - - - - - - meq / 100g - - - - - - - - - - - -										Pct
0-12	4.3	1.3	1.9	0.1	7.5	22.5	0.6	30.0	17.0	8.1	7.4
12-42	3.9	2.0	0.4	0.2	6.9	18.0	0.7	24.5	15.4	72.	9.7
42-65	6.4	3.5	0.6	0.1	10.8	16.5	0.2	27.3	18.0	11.0	1.8
65-100	6.4	3.2	0.1	0.2	9.9	16.5	0	26.4	17.6	9.9	0
100-180	5.9	5.9	0.3	0.2	12.2	19.0	0.6	31.2	20.6	12.8	4.7

Depth (cm)	(Base Sat)		CO3 as	Res	P Ret	(------ pH ------)				Acid	Oxalate Extraction		
	Sum 5C3	NH4-OAc 5C1	CaCO3 <2mm 6E1g	8E1		NaF 8C1d	KCl	CaCl2 .01M 8C1f	H2O 8C1f	Opt Den 8J	Al 6G12	Fe 6C9a	Si 6V2
	---- Pct ----			ohms/cm	Pct		1: 1	1: 2	1: 1		- Pct of <2mm -		
0-12	25.1	44.2			28.4		4.2	4.8	5.3		0.11	0.21	0.02
12-42	36.5	42.2			44.9		4.1	4.5	5.1		0.18	0.10	0.02
42-65	39.5	59.8			41.4		4.8	5.3	5.4		0.17	0.08	0.03
65-100	37.4	56.0					5.3	5.8	5.9				
100-180	39.1	59.2					4.5	5.1	5.4				