JEJU SERIES

Established Series
SJD, UKT
5 Feb., 1971

The Jeju series are members of the medial, mixed, thermic family of Andic Palehumults [Umbric Cutanic Alisols (Alumic Hyperdystric Profondic Siltic Chromic) classified by WRB]. These soils have dark brown silt loam A horizons, strong brown silty clay loam BAt horizons, brown silty clay loam Bt1 horizons, brown silty clay loam Bt2 horizons, and brown silty clay loam Bt3 horizons. They occur on gently sloping to moderately steep lava plains and are derived from pyroclastic materials.

Typifying Pedon: Jeju silt loam-wild grass (Colors are for moist soil).

Slope: 2-7%

Elevation: 356 m above m.s.l.

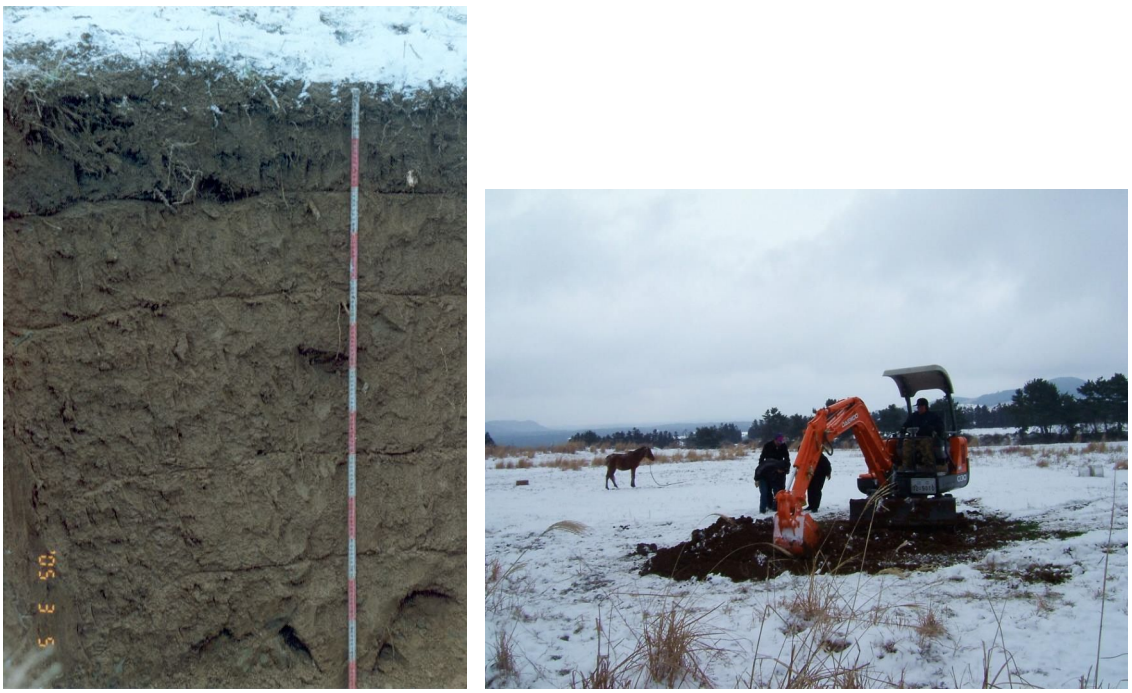
Soil moisture regime: Udic

Soil temperature regime: Thermic

Parent material: Pyroclastic materials

Diagnostic features: An umbric epipedon from a depth of 0 to 22 cm and an argillic horizon from a depth of 22 to 150 cm (An umbric horizon from a depth of 0 to 22 cm and an argic horizon from a depth of 22 to 150 cm by WRB).

Described by: Song, K. C., S. J. Jung, and D. C. Noh, 5 March, 2005.



Morphological properties of typifying pedon.

A - 0 to 22 cm. Dark brown (10YR 3/3) silt loam; weak fine to medium granular structure; firm, slightly sticky and slightly plastic; many fine grass roots; few pine pores; abrupt smooth boundary.

BAt – 22 to 43 cm. Strong brown (7.5YR 4/6) silty clay loam; moderate fine to medium granular structure; firm, sticky and plastic; common fine to medium grass roots; common fine to medium pores; clear smooth boundary.

Bt1 – 43 to 80 cm. Brown (7.5YR 4/4) silty clay loam; moderate medium granular structure; firm, sticky and plastic; thin continuous clay cutans; fine to medium grass roots; common fine to medium pores; clear smooth boundary.

Bt2 – 80 to 105 cm. Brown (7.5YR 4/4) silty clay loam; moderate medium subangular structure; firm, sticky and plastic; thin continuous clay cutans; few fine grass roots; few fine pores; clear smooth boundary.

Bt3 – 105 to 150 cm. Brown (10YR 5/4) silty clay loam; moderate subangular structure; firm, sticky and plastic; thick continuous clay cutans; no roots; few fine pores.

The typifying pedon has an umbric epipedon from a depth of 0 to 22 cm and an argillic horizon from a depth of 22 to 150 cm. It has a base saturation (by sum of cations) of less than 35% at 125 cm below the upper boundary of the argillic horizon. That can be classified as Ultisol. It has 0.9% or more organic carbon in the upper 15 cm of the argillic horizon and keys out as Humult. It does not have a densic, lithic, paralithic, or petroferric contact within 150 cm of the mineral soil surface, and with increasing depth, does not clay decrease of 20% or more from the maximum clay content within 150 cm of the mineral soil surface. It can be classified as Palehumult. It has, throughout one or more horizons with a total thickness of 18 cm or more within 75 cm of the mineral soil surface, a fine-earth fraction with both a bulk density of 1.0 g/cm^3 and Al plus 1/2 Fe percentages (by ammonium oxalate) totaling more than 1.0. It can be classified by Andic Palehumult.

The typifying pedon has medial particle-size class and thermic soil temperature class. Therefore it can be classified as medial, mixed, thermic family of Andic Palehumult.

Type Location: About 100 meters south-east of the Haean Dong Cemetery, Haean Dong, Jeju city, Jeju Do.

Range in Characteristics: These soils have umbric epipedons and argillic horizons. Solum thickness ranges from 100 to 200 cm and depth to hard bedrock is more than 2 meters. Reaction is generally strongly acid throughout the profiles. Base saturation is less than 35 percent. A horizons are very dark brown, very dark grayish brown, or dark brown silt loam to silty clay loam. Bt horizons are strong brown, brown, dark yellowish brown clay loam, silty clay loam, or silty clay.

Competing Series and Their Differentiae: These are the Yongheung and Hawon soils. The Yongheung soils are Typic Subgroups. The Hawon soils are belonged to Humic Hapludults.

Setting: The Jeju soils are developed in gently sloping to moderately steep lava plains and are derived from pyroclastic materials. Slopes range from 2 to 30 percent and 2 to 15 percent slopes are dominant.

Principal Associated Soils: The Daejeong and Ora soils are associated with Jeju soils. The Ora soils occur on similar physiographic positions and the Daejeong soils are associated in lower positions.

Use and Vegetation: Most of these soils are used for upland crops such as barley, sweet potato, potatoes and fescue. The remaining areas grow grass and shrub.

Drainage and Permeability: Well drained. Permeability is moderately slow. Runoff is medium.

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

Series Established: Jeju city, Jeju Do, 1969. **Revised,** Jeju city, Jeju Do, 2005.

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) - - - - - - - - - - -											
0-22	A	30.0	64.9	5.1					2.5	1.3	0.8	0.4	0.1
22-43	BAt	42.0	56.3	2.7					0.9	0.7	0.6	0.4	0.1
43-80	Bt1	40.8	56.2	3.0					1.0	0.9	0.7	0.4	0
80-105	Bt2	33.6	52.7	13.7					7.6	3.7	1.0	0.5	0.9
105-150	Bt3	36.3	58.5	5.2					2.1	1.5	1.1	0.5	0
150-200	BC	29.3	65.4	5.3					2.0	1.4	1.1	0.7	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	6A1c	6B3a	6S3	6R3a	Fe 6C2b	Al 6G7a	Mn 6D2a
	Pct of < 75mm (3B1)				Soil	Pct < 2mm		g/kg		Pct of < 2mm		
0-22						3.64						
22-43						1.32						
43-80						0.50						
80-105						0.43						
105-150						0.16						
150-200						0.47						

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
0-22					1.0								
22-43					1.23								
43-80					1.27								
80-105					1.39								
105-150					1.39								
150-200					-								

Depth (cm)	(NH4OAc Extractable Bases)					Acid-ity	Extr Al	(----- CEC -----)			Al Sat
	Ca 5B5a 6N2e	Mg 5B5a 6O2d	K 5B5a 6Q2b	Na 5B5a 6P2b	Sum Bases	6H5a	6G9a	Sum Cats 5A3a	NH4-OAc 5A8b	Bases + Al 5A3b	5G1
	- - - - - - - - - - - - meq / 100g - - - - - - - - - - - -										Pct
0-22	3.5	0.9	0.26	0.1	4.8	24.0	0.8	28.8	18.0	5.6	14.3
22-43	0.9	0.3	0.12	0.2	1.5	26.5	2.6	28.0	14.7	4.1	63.4
43-80	1.6	0.9	0.06	0.2	2.8	25.5	3.6	28.3	16.8	6.4	56.3
80-105	1.1	1.0	0.02	0.2	2.3	22.5	3.8	24.8	15.6	6.1	62.3
105-150	0.9	0.9	0.04	0.3	2.1	24.0	3.1	26.1	16.2	5.2	59.6
150-200	1.3	1.1	0.06	0.3	2.8	18.0	2.0	20.8	12.5	4.8	41.7

Depth (cm)	(Base Sat)		CO3 as CaCO3 <2mm	Res	P Ret	(------ pH ------)				Acid Oxalate Extraction		
	Sum	NH4-OAc				NaF	KCl	CaCl2 .01M	H2O	Opt Den	Al	Fe	Si
	5C3	5C1	6E1g	8E1		8C1d		8C1f	8C1f	8J	6G12	6C9a	6V2
	---- Pct ----			ohms/cm	Pct		1: 1	1: 2	1: 1		- Pct of <2mm -		
0-22	16.6	26.4			32.6			4.8	5.6		0.39	1.60	0.35
22-43	5.4	10.3			40.5			4.5	5.3		0.39	1.93	0.40
43-80	9.8	16.4			49.6			4.4	5.3		0.44	3.09	0.65
80-105	9.3	14.9						4.4	5.4				
105-150	8.2	13.2						4.4	5.4				
150-200	13.3	22.1						4.5	5.4				