Reference soil Ireland 1: Podzol

Description

Classification

WRB 1998:

Haplic Podzol

FAO-UNESCO-ISRIC 1988:

Haplic Podzol

FAO-UNESCO 1974:

Orthic Podzol

Site description

General information:

Names of person(s) who described the profile	: Creutzberg D
General description of location of profile (e.g., town, province)	: Co. Wexford, north of Wexford
Climate classification according to Köppen	: Cfb
Date	: 1967
Latitude / Longitude	: N 52.4166666° / W -6.41667°

Physiography:

The altitude of the soil profile relative to mean sea level, specified in meters	: 75 m asl
Regional landform	: moraine
Topography of the surrounding country	: rolling
Physiographic Unit in the immediate surrounding of the site	:
The slope refers to the inclination of the land immediately surrounding the site. The measured or estimated slope angle is specified to the nearest per cent	: 7 %
The physiographic position of the site where the profile is located	: slope
Form of the slope surrounding the site	:
Slope Aspect of the site	: west

Parent material:

The main parent rock/ material over which the soil has been formed (1st entry)	: mixed lithology and composition
Mode of Accumulation or deposition of parent material (1st entry)	: ice-pushed materials
Texture of parent material (1st entry)	:
Depth1 of lithological boundary	: cm
The main parent rock/ material over which the soil has been formed (2nd entry)	:
Texture of parent material (2nd entry)	: sandy
Resistance against weathering (solid rock) (2nd entry)	:
Soil Depth; depth to which roots can easily penetrate throughout the year	: cm

Hydrology and drainage:

Depth of groundwater table	: cm
Groundwater Top	: cm
Groundwater Bottom	: cm
Kind of groundwater table	: no groundwater table observed
Top Stagnating Layer	: cm
Bottom Stagnating Layer	: cm
Estimated permeablity (class) of least permeable part of the profile	: high
Drainage Class	: excessive
To Drainage Class	:
Moisture conditions of the profile: dry	: cm

Remarks on Parent Materials	: Weichsel end-moraine	from -to	
		Moisture conditions of the profile: moist from -to	: cm
		Wet From - To	: cm

Land use / vegetation:

Current land use at the site	: cultivated pasture
Major crops	:
Main type of irrigation	:
Rotation scheme	:
Vegetation Type;The natural vegetation at the site	:
Status of vegetation	:
Remarks on Land Use / Vegetation	: Agrostis spp., bracken and sorrel

Erosion and aggredation:

Soil erosion type (1st entry)	:
Occurrence of soil aggradation	:
Slope Stability	:

Surface characteristics:

Microrelief type: small-scale differences in relief in the direct vicinity of the site	:
Microrelief Height	:
Rockiness	:
Stoniness	:
Average size of stones	:
Shape of stones (on average)	:
Slaking of aggregates by tillage, rainfall or frost	:
Evidence of salt	:
Evidence of alkali	:

Nearest climate station:

Station : No representative climate station available for this site

Profile description:

Ah1 0-8 cm	: very dark greyish brown (10YR 3/2, dry), coarse sand, very weak fine and medium crumb, many roots, gradual smooth boundary to,
Ah2 8-16 cm	: very dark greyish brown (10YR 3/2, dry), coarse sand, weak fine and medium crumb, very friable, common roots, clear smooth boundary to,
Bsm 16-23 cm	: yellowish red (5YR 4/6, dry), coarse sand, single grain, loose, few roots, clear wavy boundary to,
cm	: yellowish brown (10YR 5/4, dry), coarse sand, single grain, loose, few roots, clear wavy boundary to,

Physical

Particle size distribution:

Depth (cm)		Gravel (%)	Very Coarse Sand (%)	Coarse Sand (%)	Medium Sand (%)	Fine Sand (%)	Very Fine Sand (%)	Total Sand (%)	Coarse Silt (%)	Fine Silt (%)	Total Silt (%)	Clay (%)
0-20	:	0	-	-	-	-	-	87.3	5.7	3.9	9.6	3.1
20-34	:	0	-	-	-	-	-	83.3	12.9	1.2	14.1	2.6
34-50	:	0	-	-	-	-	-	90.9	4.2	2.7	6.9	2.2
50-60	:	0	-	-	-	-	-	89.6	4.6	2.3	6.9	3.5
60-75	:	0	-	-	-	-	-	91.7	3.8	3.5	7.3	1
80-105	:	0	-	-	-	-	-	88.1	6.1	2.5	8.6	3.3
135-145	:	0	-	-	-	-	-	96.5	0.7	1.7	2.4	1.1

Other physical data

Depth (cm)		Bulk Density (kg/dm³)	Spec. Surf. Area (m2/g)	COLE (cm/cm)	Water Disp. Clay (%)	Clay (%)
0-20	:	-	-	-	-	3.1
20-34	:	-	-	-	-	2.6
34-50	:	-	-	-	-	2.2
50-60	:	-	-	-	-	3.5
60-75	:	-	-	-	-	1
80-105	:	-	-	-	-	3.3
135-145	:	-	-	-	-	1.1

Chemical characteristics:

Depth (cm)		pH H2O	pH KCl	EC 1 : 2.5 (mS/cm)	CaCO3 (%)	Org. C (%)	Org. N (%)	C / N	Exch. Acid (cmol/kg)	Exch. Al (cmol/kg)	Ca (cmol/kg)	Mg (cmol/kg)	K (cmol/kg)	Na (cmol/kg)	Sum Cations (cmol/kg)
0-20	:	4.2	3.5	0.37	-	2.09	0.11	19	-	-	0.2	0.2	0.1	0.1	0.6
20-34	:	4.3	3.8	0.1	-	0.69	0.06	12	-	-	0.0	0.0	0	0.0	0
34-50	:	4.6	4.2	0.03	-	0.27	0.02	14	-	-	0.0	0.0	0	0.0	0
50-60	:	4.7	3.9	0.03	-	0.68	0.04	17	-	-	0.0	0.0	0	0.0	0
60-75	:	5.3	4.6	0.02	-	0.39	0.02	20	-	-	0.0	0.0	0	0.2	0.2
80-105	:	5.4	4.6	0.02	-	0.30	0.02	15	-	-	0.0	0.0	0	0.0	0
135-145	:	5.5	4.7	0.02	-	0.15	0.01	15	-	-	0.0	0.0	0	0.1	0.1

Depth (cm)		CEC Soil (cmol/kg)	CEC Clay (cmol/kg)	CEC Org (cmol/kg)	ECEC (cmol/kg)	Base sat. (%)	Al sat. (%)	ESP (%)
0-20	:	6.6	213	-	-	9	-	-
20-34	:	3.5	135	-	-	0	-	-
34-50	:	1.7	77	-	-	0	-	-
50-60	:	6.4	183	-	-	0	-	-
60-75	:	3.9	390	-	-	5	-	-
80-105	:	4.4	133	-	-	0	-	-
135-145	:	2.4	218	-	-	4	-	-

Source of analyzing procedures:

Laboratory Attribute Description Proc. ref

ISRIC	Base sat.	Calculation; Sum of Exchangeable Cations (Na, K, Ca, Mg) / CEC soil	labmanual
ISRIC	C / N	Calculation; Organic Carbon / Organic Nitrogen	labmanual
ISRIC	Ca	Exchangeable bases with 1 M ammonium acetate at pH 7; Ca by atomic absorption spectrometry	9-4 and 9-5.3
ISRIC	CEC Clay	Calculation; ((CEC soil - CEC org.m.)/ clay %)*100	9-6.3
ISRIC	CEC Soil	CEC; with index cation in buffered solution pH7	9-4 and 9-5.3.3
ISRIC	Clay; < 0.002 mm	Fraction by Pipette analysis; after removal CaCO3 and organic matter, dispersion and sedimentation	3-4.7
ISRIC	EC 1 : 2.5	Electro Conductivity of a soil / water (1:2.5) suspension	4-1.4 and 13-4
ISRIC	Gravel	Fraction from field sample, after drying, crushing, sieving	1-1
ISRIC	K	Exchangeable bases with 1 M ammonium acetate at pH 7; K by flame atomic emission spectrometry	9-6.1
ISRIC	Mg	Exchangeable bases with 1 M ammonium acetate at pH 7; Mg by atomic absorption spectrometry	9-4 and 9-5.3
ISRIC	Na	Exchangeable bases with 1 M ammonium acetate at pH 7; Na by flame atomic emission spectrometry	9-4 and 9-5.3
ISRIC	Organic Carbon	Wet combustion of organic matter by potassium dichromate and sulphuric acid at about 125 degrees Celcius. Residual dichromate is back titrated against ferrous sulphate. To compensate for incomplete destruction an emprical correction factor of 1.3 is applied	5
ISRIC	Organic Nitrogen	Organic Matter is digested in sulphuric acid (and hydrogen peroxide) with selenium as catalyst. Nitrogen is converted to ammonium sulphate. The solution is made alkaline and ammonia is distilled off. The evolved ammonia is trapped in boric acid and titrated with standardized acid solution	6
ISRIC	pH H2O	pH electrode; in supernatant suspension	4-1
ISRIC	pH KCl	In supernatant suspension; potentiometrically	4-1
ISRIC	Sand; 2.0 - 0.05 mm	Total sand fractions by sieving; after removal CaCO3 and organic matter	3-5
ISRIC	Silt; 0.02 - 0.002 mm	Fraction by Pipette analysis ; after removal CaCO3 and organic matter, dispersion and sedimentation	3-4.7
ISRIC	Silt; 0.05 - 0.002 mm	Calculation; Sum fractions Silt 0.05 - 0.02 mm	3-4.7
ISRIC	Silt; 0.05 - 0.02 mm	Fraction by Pipette analysis ; after removal CaCO3 and organic matter, dispersion and sedimentation	3-4.7
ISRIC	Sum cations	Sum of Exchangeable Cations (Ca, Mg, Na, K) with 1 M ammonium acetate at pH 7	9-

*ref: no labmanual available, link to presumable used analytical methode

Other classification

USDA-NRCS (1999) : Typic Haplorthod
USDA-SCS (1975) : Typic Haplorthod sandy mixed mesic
Classification (other) :
Brown Podzol, Screen Series

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