The information and results presented come from the INTERREG ReCon Soil research programme. The results presented are not generalizable due to the heterogeneity of the materials.

Excavated clay-rich soil / agricultural topsoil mixture

Description

Intended use: growth horizon

Reconstructed Soil 1 was a mixture of clay-rich excavated subsoil (34 wt. %), of agricultural topsoil (66 wt. %) and of green waste compost (< 1wt. %)

Reconstructed Soil 1 just after lettuce planting (© ReCon Soil)

Fertility

The mixture is brown-yellow in colour with coarse and fine wood residues and fine particles.

Physical properties

		Unit	Result	Interpretation
bD [a]		g.cm^{-3}	1.15	*Good bulk density for plant growth -*
Soil moisture content at field capacity		mm/1cm depth	3.0	*high water storage -*
WHC [b]			1.4	low WHC
Particle size distribution	< 2µm	g.kg^{-1} dry mass	16.1	-
	2 – 50µm		39.3	*Loam*
	50 – 2000µm		42.2	
	organic matter content		2.4	
Illite + smectite		%	36.7	*High amount of swelling clay (32.4 %)*
Aggregate stability		MWD[c] (mm)	0.44	*Unstable*

(abD : bulk density ; (b) WHC : Plant-Available Water Holding Capacity ; (c) MWD : mean weight diameter

Chemical properties

	Unit	Result	Interpretation
pH	-	8.1	*high*
CEC Metson	meq.100g^{-1}	10.6	*high*
Total $CaCO_3$	g.kg^{-1} dry mass	12	*Non calcareous*
Total C		19.3	*satisfactory*
Organic C		13.7	-
Total N		1.2	*low*
C/N		11.1	*satisfactory*
P Olsen		0.187	*high*
Conductivity	µS.cm^{-1}		

Chemical composition

Major elements	Unit	Result	Trace elements	Unit	Result	Interpretation[c]
Al	g.kg^{-1}	58.2	As	mg.kg^{-1}	10	-
Ca		21.5	Ba		63	-
Fe		27.7	Cd		0.2	-
K		19.5	Cr		23	-
Mg		3.6	Cu		28	-
Mn		0.4	Mo		0.3	-
Na		12.5	Ni		10	-
P		1.2	Pb		33	-
Si		317	Se		0.3	-
Ti		5.3	Zn		57	-

[c] Comparison with geochemical background values

Reconstructed Soil 1 containing lettuce (© ReCon Soil)

Microbiology

Microbial diversity

Not measured

Enzymatic activity involved in the carbon cycle

Not measured

Plant Growing and plant health

Yield (t.ha^{-1})

Result	Interpretation
21.73	*satisfactory*

Plant analysis (trace elements)

	Unit	Result	Interpretation
As	mg.kg^{-1}	<0.1	-
Cd		0.012	*Below reg. limit of 0.1 mg/kg*
Cr		0.068	-
Cu		0.40	*Below reg. limit of 100 mg/kg*
Pb		<0.02	*Below reg. limit of 0.3 mg/kg*
Zn		1.8	-