Soil

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Example report
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Analysis

Investigation/ordernr: 110690/003707103

Date sampling: 01-11-2023

Date report: 14-11-2023

Results

		Unit	Result	Target value	low	rath.low	good	rath.high	high	Soil fertility advice (kg/ha)
Chemical	Total N stock	kg N/ha	2130	1300 - 1950						
	C/N ratio		9	13 - 17						
	N-supplying capacity	kg N/ha	100	95 - 145						
	Total S stock	kg S/ha	480	285 - 530						
	C/S ratio		42	50 - 75						
	S-supplying capacity	kg S/ha	11	20 - 30						
	P-plant available	kg P/ha	1,5	2,2 - 3,7						
	P-soil stock	kg P/ha	140	190 - 240						110
	Total P-stock	kg P/ha	605	805 - 1125						
	K-soil stock	kg K/ha	210	130 - 220						20
	Ca-soil stock	kg Ca/ha	3500	3190 - 4060						120
	Mg-soil stock	kg Mg/ha	140	185 - 305						110
	Na-soil stock	kg Na/ha	8	22 - 37						
Physical	Acidity (pH)		6,3	> 6,3						690
	C-organic	%	1,64							
	Organic matter	%	3,3							0
	SOC/SOM ratio		0,50	0,45 - 0,55						
	Carbonate lime	%	2,2	2,0 - 3,0						
	Clay (<2 µm)	%	27							
	Silt (2-50 µm)	%	35							
	Sand (>50 µm)	%	33							
	<16 µm	%	38							
	Clay-humus (CEC)	mmol+/kg	171	> 142						
	CEC-saturation	%	91	> 95						
	Ca-saturation	%	83	80 - 90						
	Mg-saturation	%	5,4	6,0 - 10						
	K-saturation	%	2,6	2,0 - 4,0						
	Na-saturation	%	0,2	1,0 - 1,5						
	H-saturation	%	< 0,1	< 1,0						
	Al-saturation	%	< 0,1	< 1,0						
	Soil crumbling	score	5,4	6,0 - 8,0						
	Soil slaking	score	5,4	6,0 - 8,0						
	Risk on wind erosion	score	8,8	6,0 - 8,0						
Biological	Microbial activity	mg N/kg	74	35 - 58						

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Results

The soil based recommendations are one-time amounts to be applied in a 4-year period. The recommendations are expressed in the usal units (N, P_2O_5, K_2O, etc.) When the amount is high, we advice to split the amount in smaller doses to be applied during the 4-year period.

Fertilisation recommendations
The result is compared with an agricultural target value and is categorized as low, rather low, good, rather high high. This is not an appreciation as meant in ISO 17025 (par. 7.8.6).

Legislation
The fertilisation recommendations aim to achieve an agronomical optimum yield and crop quality. The recommendations do not take any legal restrictions into consideration.

Organic matter

Figure: Organic matter balance

Yearly breakdown rate (percentage) of the total organic matter content (%): 3,1

- Stock of organic matter which will remain after 1 year in the sampled layer if no (effective) organic matter is supplied.
- Total required supply of effective organic matter as a result of the degradation of the organic matter.
- Supply through crop residues (average within provided rotation scheme or crops).
- Remaining to be supplied through e.g. animal manure, green manures and/or compost.

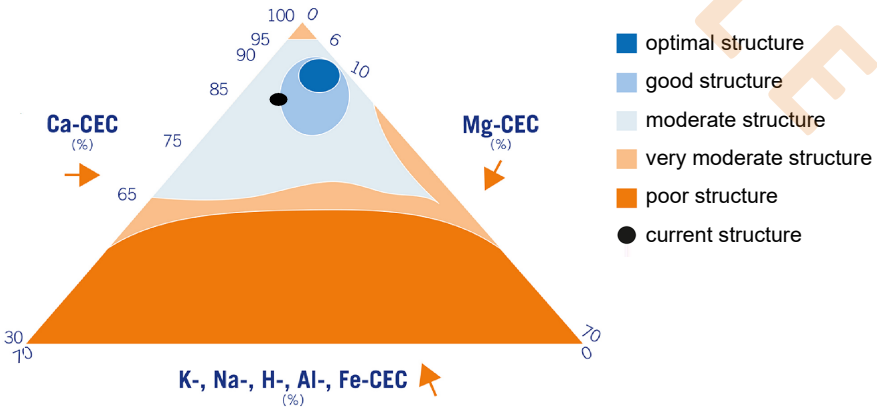
Crop (residue)	Culture:	Input of effective organic matter
Grass		2335
Average input/year		2335

For increasing the soil organic matter content by 0.1%: 1230 kg effective organic matter per hectare is needed.

Physical

The assessment of soil structure is based on the Ca-CEC, K-CEC, and Mg-CEC ratio. Actual soil structure is - of course - not merely depending on ratio, but also on weather conditions, moisture condition of the soil, and the weight of the machinery.

Figure: Structure triangle



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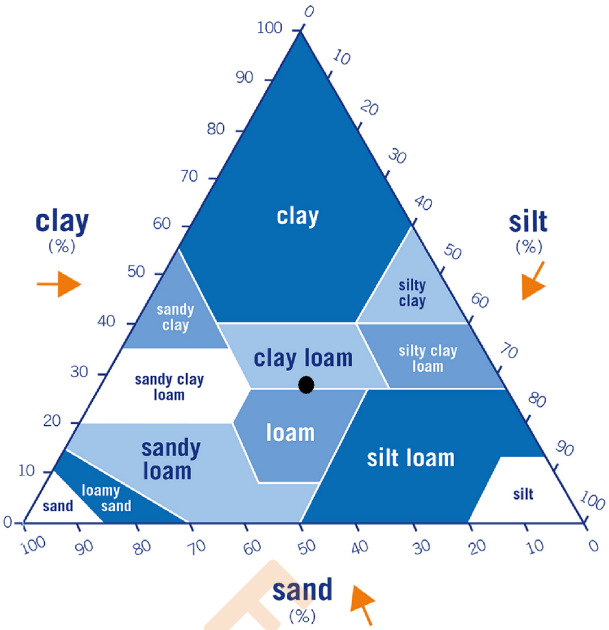
Physical

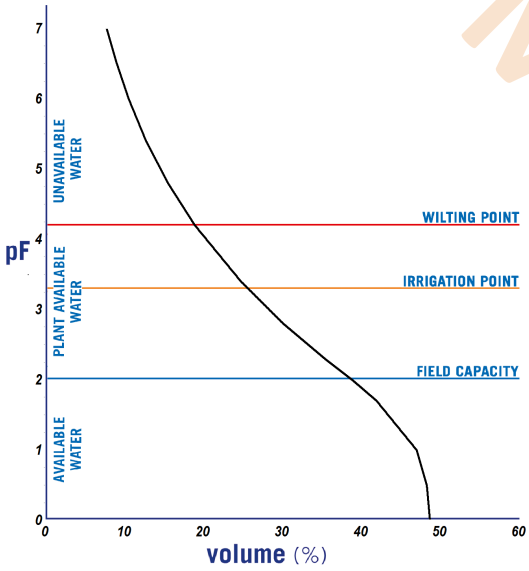
Figure: Texture triangle



Besides clay, the silt and sand fractions are presented as well. Clay is smaller than 2 micrometer (µm), silt particles are 2-50 µm and sand particles are larger than 50 µm. The relative distribution of soil particles is used to estimate the risk of slaking. Slaking causes the soil pores to be clogged with smaller particles and degrades soil structure. The risk of slaking is greatest at 10-20% clay.

The soil crumbling - mutual binding between soil particles - is not optimal. The measures to improve soil crumbling are diverse. There is a chance of soil slaking. It is adviseable to maintain SOM level, or even to improve SOM level, since organic matter realizes binding between soil particles.

Figure: Water retention curve



The amount of plant available water in the sampled layer is 20 mm. This is the maximum amount you should irrigate. All excess irrigation will drain off the parcel or will sink to deeper layers.

Crops have difficulties to obtain water when the actual moisture level is below pF 3,3. When you are able to measure the moisture level, start with irrigation if the moisture content of the parcel is at 25,6 % and irrigate 13 mm.

The actual moisture level can be measured by using a soil moisture sensor, or collect soil from ten spots in the parcel. Measure the weight of the moist soil and the weight after 24 h drying. The difference between moist and dry soil is an indication of the moisture level of the parcel.

Contact & info

Soil layer:	0 - 10 cm
Sample was taken by:	Eurofins Agro, Monsternemer
Contact sample taking:	Klantenservice Agro: 0888761010
Sampling method:	W-pattern, at least 40 sub samples, according to Eurofins Agro standard MIN 1000

If the following information is shown in the reports, this information may have been provided by the client and may affect the valuation, advice and/or analysis result:
sampling depth, soil type, crop.

MP Voogt

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Method		Result	Unit	Method	RvA
Results analyses	Total nitrogen stock	1730	mg N/kg	Em: NIRS	Q *
	Total sulphur stock	390	mg S/kg	Em: NIRS	Q *
	P-plant available	1,2	mg P/kg	Em: CCL3 (Gw NEN 15923-1)	Q *
	P-soil stock	26	mg P_2O_5/100 g	PAL1: Gw NEN 5793	Q *
	Total P-stock	113	mg P_2O_5/100 g	Em: NIRS	*
	K-soil stock	4,4	mmol+/kg	Em: NIRS	*
	Ca-soil stock	142	mmol+/kg	Em: NIRS	*
	Mg-soil stock	9,2	mmol+/kg	Em: NIRS	*
	Na-soil stock	0,3	mmol+/kg	Em: NIRS	*
	Acidity (pH)	6,3		Em: NIRS	
	C-organic	1,64	%	Em: NIRS	Q *
	Organic matter	3,3	%	Em: NIRS	Q *
	C-inorganic	0,26	%	Em: NIRS	*
	Carbonate lime	2,2	%	Em: NIRS	*
	Clay (<2 µm)	27	%	Em: NIRS	*
	Silt (2-50 µm)	35	%	Em: NIRS	*
	Sand (>50 µm)	33	%	Em: NIRS	*
	Clay-humus (CEC)	171	mmol+/kg	Em: NIRS	*
	Microbial activity	74	mg N/kg	Em: NIRS	*
	Bulk density	1230	kg/m^3	Em: NIRS	

The values stated on page 1 and 2 under 'Result' are calculated from the above mentioned analysis results.
Q Method accredited by RvA
Em: Method Eurofins Agro, Gw: Equivalent of, Cf: In conformity with

Results are reported in dry soil.
The analyses were done at Eurofins Agro, Wageningen (NL).
The results relate exclusively to the sample taken and received by Eurofins Agro, and to the material processed on 02-11-2023, and therefore to the sample analysed. For a detailed description of the sampling and analysis methods used, visit www.eurofins-agro.com