REPORT: 000000000

KOCH-EUROLAB

E.X. Ampel
Kastrupvej 231 X
2300 KOBENHAVN S

Sample name: gamle eng (sample number 000000000)

(if several samples are offered at the same time, the first sample is shown in this document. There is also a complete summary of all samples available on a spreadsheet)

SOIL LIFE SCREENING

- MICRO- and MESOFAUNA ANALYSE
- SOIL FOOD WEB ANALYSIS
- SOIL ECOSYSTEM RESEARCH

templates/5.meso.doc V. 2-2012

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1. Foreword:

This screening of the soil fauna will be more complete together with the analysis list of soil fertility analysis package 2. This package 2 analysis contains as well the chemical conditions of the microflora (= “soil-plants”) as some groups of soil flora.

Ecosystem
Due to the current state of technology it is impossible to identify all the micro-organisms that are present in the soil. There are too many microorganisms and an huge amount have not been identified yet. This soil fauna screening identifies many organisms which are a part of a much more comprehensive ecosystem. Each (soil) animal has his own soil bacteria and fungi associated with his biotope. As the number of species found by this analysis is larger, there will also be more ecosystems around those organisms, along with known and unknown organisms.

Healthy balance
Healthy soil has a reasonable balance between the different microorganisms and mesofauna. If this balance is disturbed, or few species are present, the soil is in pore health. Of course there are also temporary peaks in the presence of microorganisms in soil. These peaks often occur after application of organic fertilizers and green manure.

Number of microorganisms:
The number of microorganisms that is found in this sample, is not a fixed number, the numbers can change slightly within a season. When there are currently only 800 of a certain species found and a half years later, there are found 600, that does not mean that there is a fundamental decrease. The relation between annual samples taken at the same time, when there is not a fundamental change in fertilization or soil cultivation, is basically similar. The protozoa may change quite rapidly in numbers, therefore the number of protozoa expressed on a logarithmic scale here (1 = 0; 1 = 10; 2 = 100; 3 = 1000; 4 = 10,000, etc.). The rest of the organisms is in pieces per 0.10 liter undried soil material. This report and each separate analysis list, is listed as much as possible from small to large. Where there is a – mark, it means that the species is not detected / identified. An asterisk means that the whole group was not analyzed due to lack of sufficient soil. Mesofauna is normally tested in 1500 ml of soil material.

Mineralization
The number and type of nematodes and protozoa indicate if there has been a slow, normal, or a very fast mineralization. This is important to estimate how the subsequent delivery of the mineralization is developing.

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2. Protozoa (unicellular)

Protozoa are presenting approximately 5% of the biomass and populate the soil, in quantities of 10 to 1 million protozoa per gram of soil. They primarily feed on bacteria, but their diet also can contain mold spores, algae, yeasts, flagellates and small amoebas. They avoid however encapsulated bacteria, mycobacteria (actinomycetes) and bacterial endospores.

The presence of certain quantities of protozoa are interesting, because it has been proven that they are related to the amount of nitrogen. Grazing on bacteria and fungi, these bacteria and fungi become more active, because of this elevated activity there will become 75% more nitrogen available to the plants in comparison to soil with the same soil conditions, but without a proper amount of protozoa.

Protozoa don't die because of drought, but will be, like many other soil organisms, in a resting stage (cysts). They will become active within 1 to 2 days after the moisture condition is restored to normal. Their movements through the soil is limited. However during a lot of rain the protozoa can (which are only able to move through water) make longer distances through the soil.

2c Analysis list micro fauna

Protozoën (unicellular) (quantity per 0,10 liter soil) (Log (10) schaal)		behavior / diet
• Flagellates	-	diet: bacteria, fungal spores, nematodes, yeast
- Phytoflagellaten	2	photoautotrophically, contains Chlorophyll
• Rhizopoden		
- Naked amoebae	2	diet: bacteria, fungal spores, nematodes, yeast, flagellates, small amoebae
-Testacea: Living or dead organisms	1	amount is quite consistent by (sudden) structure decay often dead testacea diet: bacteria, fungal spores, organic material, yeast, nematodes, flagellates and small amoebae
• Ciliophora	1	diet: bacteria, fungal spores, nematodes, yeast, flagellates, small amoebae

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3. Other micro fauna

3a Tardigrada (waterbears)
Important for waterbears to occur is a good soil structure. They are mainly found in well-aerated soil with abundant (capillary) water. If the structure of the soil is well within the deeper layers, the waterbears will be found within the soil up to a maximum of 30 cm depth.
The size of micro-animals are usually less than half a millimeter. They can withstand extreme dehydration and very low temperatures. The waterbears will go into a rest stage that, if necessary, can last up to seven years. After rain the animal swells up again and will be active within a few hours. They move through the soil water. They feed on plant cells which are pierced by them.

3b Rotifera (rotifer)
The size of rotifers varies from 0.04 mm to 2 mm and they inhabit the soil water. They feed on organic particles, protozoa, algae and other micro fauna. They are often found in litter and manure. Their main food is fine decayed material. They can endure prolonged, severe dehydration and will be active again a few hours after a rainstorm. They can be spread by the wind.

3c Analysis list various micro/mesofauna behavior / diet
(quantity per 0,10 liter soil)

- Tardigrada -
- Rotifera -
- Cyclopidae -
- Daphniidae -
- Chilopodae -

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4. Nematodes

Nematodes are primarily associated with diseases on pests of crops caused by potato cyst nematodes, root lesion nematodes and root knot nematodes. However, these for the plant very harmful nematodes, are only a limited part of the total number of nematodes present in the soil. They are identified by a lancet, a type of needle with which they can open the plant root. In an average soil, the harmful species are only a few of the total number of nematodes. The nematode analysis of this soil screening paid less attention to the harmful nematodes, but more to the beneficial species, and those who have a significant role in the food web. There are 5 to 60 different nematode species to be found within a parcel soil. In total, there will be counted 400-4000 nematodes within 0,1 liter soil. Normally, there will be at least 8 billion nematodes present within 1 hectare soil.

The sizes of nematodes vary from 0.5 to 1.5 millimeters, they are 0.01 to 0.03 mm thick. The nematodes move primarily through groundwater.
Grazing by nematodes in fungi works strangely positively to the fungus in the soil. That renews itself and becomes more active. Due to this acceleration there will become more nutritional substances available to plants, such as nitrogen, phosphorus and sulfur in contrast to a situation with less nematodes. The more nematodes, the more active the life within the soil is. Furthermore the conversion systems function faster and more efficiently when the amount of nematodes is higher. The variation in types is important because some may be active at different temperatures. This specialization is less rivalry.

4a Analysis list micro/mesofauna

Nematodes (amount per 100 gram soil)		behavior / diet
Adenophorea (kl)		
• Araeolaimida (or)	-	diet: bacteria and fungi
- Anaplectus (gn)	-	
- Aphanolaimus (gn)	-	
- Chronogaster (gn)	-	
- Cylindrolaimus (gn)	-	
- Eastiania (gn)	-	
- Euteratocephalus (gn)*	-	
- Plectus (gn)	-	
- Rhabdolaimus (gn)	-	
- Teratocephalus (gn)*	-	
- Tylocephalus (gn)	-	
- Wilsonema (gn)	-	
• Chromadorida (or)	-	
- Achromadora (gn)	-	
• Desmodorida (or)	-	
- Prodesmodora (sf)	-	found in moist soil
• Dorylaimida (or)	20	diet: bacteria, fungi and organic material
- Actinolaimoidea (sf)	-	predatory nematode
- Belondiroidea (sf)	-	predatory nematode

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- Diphtherophoroidea (sf)	-	
- Trichodorus (gn47)	-	harmful for plants (root knot nematode) transfers viruses
- Paratrichodorus (gn)	-	harmful
- Dorylaimoidea (sf)	-	
- Longidorus (gn57)(option)	-	transfers viruses, harmful for plants
- Xiphinema (gn93)(option)	-	harmful for plants
- Leptonchoidea (sf)	-	
• Enoplida (or)	-	
- prismatolaimus (gn)	-	
- Ironus (gn)	-	
- Tripla (gn)	-	
- Tobrilus (gn)	-	
• Monhysteridae(or)	-	diet: bacteria and fungi
- Monhystera (gn)	-	mostly microbes
- Monhystrella (gn)	-	mostly microbes
- Mononchida (or)	-	predatory nematode
- Bathyodontoidea (sf)	-	predatory nematode: their diet contains other nematodes
- Mononchidae (sf)	-	predatory nematode: their diet contains other nematodes
Secernentea (klasse)		
• Rhabditida (or)	1.400	in general: most common in moist soil and soil that contains an huge amount of humus diet : bacteria, fungi and organic material
- Bunonemoidea (sf)	-	general features of the specie
- Cephaloboidea (sf)	-	general features of the specie
- Chambersielloidea (sf)	-	general features of the specie
- Diplogasteroidae (sf)	-	general features of the specie
- Panagrolaimoidae (sf)	-	general features of the specie
- Rhabditoidae (sf)	-	general features of the specie
• Tylenchida (or)	10	roots of plants and fungi
- Aphelenchoidae (sf)	-	
- Aphelenchoides (gn197)	-	damages flowers buds and leafs
- Atylenchoidea (sf)	-	rare species
- Criconematoidea (sf)		
- Macroposthonia (gn67)	-	damages roots of plants
- Paratylenchus (gn80)	-	moderately harmful root surface eaters
- Hemicycliophora (gn89)	-	sheath nematode, damages roots of plants
- Heteroderoidea (sf)		
- Heterodera larve (gn88)	-	larva of (harmful) rootgall cyst nematodes
- Meloidogyne larven (gn40)	-	highly damaging to plants, root knot nematode
- Tylenchoidea (sf)		
- Anguina (gn27)	-	damages flowers buds and leafs (produces gall)

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- Ditylenchus (gn80)	-	damaging to stem and leaf
- Tylenchorhynchus (gn150)	-	moderately harmful (surface of roots eaters)
- Rotylenchus (gn50)	-	spiral nematode, damages the roots of plants
- Helicotylenchus (gn104)	-	moderately harmful for grass (roots)
- Pratylenchus (gn61)	-	causes severe damage, root lesion nematodes
- Radopholus (gn30)	-	damages roots of plants
- Tylenchus gn	-	moderately harmful (surface of roots eaters)
Other nematodes	-	not identified nematodes
Total nematodes	-	(total nematodes not damaging to plants)

The recognition and classification in the animal kingdom is debatable under this name because of differences in taxonomy systematics worldwide kl = class, or = order, sf = superfamily, f = family, gn = genus;. Gn47 = genus with 47 subspecies.
(Nematodes that are harmful to plants are for this mesofauna analysis only identified by "family". If there are nematodes found that are harmful to the plants/crops you grow, there has to be a further identification. Please request this optional research within 14 days after receiving this report).

5. Enchytraeidae

Potworms are white worms and are approximately 1 to 6 millimeters. They will mostly be found within the layer from 0 – 5 cm, but facing drought they tend to go deeper within the soil, 0 – 20 cm. In the summer, the amount of found worms will be less than found during winter. The animals benefit from a litter of mulch layer so that the soil will not be dry and there is food continually present in large quantities.
In contrast to other soil organisms, the white worms are not able to go into a protected resting stage, therefore they are impressible to drought. As the soil is more dry, the white worms will occur less. A higher organic matter content usually means a greater protection against drought for these organisms. The Enchytraeidae feed on organic material such as manure and plant remains, bacteria and fungi. Only in the extended mesofauna analysis, the potworms will be identified.

Convenient aspects:
- Extensive digging, improving soil structure.
- Storage of unbalanced plant nutrients.
- Mixing of organic substance with soil
- Depositing fecal pellets (improves structure of the soil)
- Transport of mineral parts through the soil, this can be about 1% of the total Topsoil a year
- Trans locating of microbes and fungi within the soil

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5a Analysis list micro- and mesofauna:

Enchytraeidae (quantity per 0,10 liter soil)		behavior / diet
Enchytraeidae spp.	-	(not identified worms)
Acheata	-	
Bryodrilus	-	
Buchholzia	-	
Cernosvitotiella	-	
Cognettia	-	mostly in moist soil / peat diet: mostly fungi
Enchytraeus Henle	-	very varied habitat
Friderica Michaelsen	-	
Grania	-	
Henlea	-	very varied habitat
Lumbricillus	-	moistly in manure / feces
Marionina	-	very varied habitat
Mesenchytraeus	-	mostly in moist soil / peat
Randidrilus Coates & Erseus	-	

K o c h - E u r o l a b

L a b o r a t o r i u m c h e m i s c h e n m i c r o b i o l o g i s c h - A g r a r i s c h e k r i n g l o o p a n a l y s e s
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6. Collembola (springtails)

Springtails in general are not only soil insects, but some types also live on the crops and on the ground, instead of only within the soil. Springtails that belong to the mesofauna of soil have a slightly different look (blind, tiny paws and more worm-like). Other species that are found within the upper layers of soil life can have more pigment, a longer (jump) tail and will be larger.
Within soil that has a better structure, the deeper layers are also populated by springtails. During drought they crawl deeper into the soil, but after rain they will be back in a few hours in the top layer. They live in the airy part of the soil. During dry times and in the spring, the number of springtails will decrease with 20% of the average number in the other months, 1-2 days after rain there is a rapid increase possible. In non-glasshouse soils in the period between August to March, the number of the springtails is the highest. Mainly crop residues with a low C / N are favorable for springtails. The larger springtails are involved in the degradation of plant material (every Isotomidae) The smaller species are more involved with the humification processes in the soil. Springtails eat everything, mainly fungi, mold spores (preference for Rhizoctonia Solani) and other pathogens and nematodes. The size of springtails varies even within families.

6a Analysis list mesofauna

Collembola		behavior / diet
• Collembola spp.	-	not identified springtails
• Arthropleona		
- Poduromorpha		
- Poduridae spp.	-	dead organisms, (micro)fauna and other
- Hypogastrura	-	organic material, fungi, decayed plants
- Friesea	-	
- Onynchiuridae spp.	-	
- Onychiurus	-	hyphen, feces, bacteria, decay organic material
- Tullbergia	-	fungi
- Entomobryomorpha		
- Isotomidae spp.	-	decomposes organic material, dead organisms
- Cryptopygus thermophilus	-	mostly seen in organic fertilizer
- Folsomia	0.6	hyphen, feces, bacteria, decomposes organic material
- Isotoma	-	decomposes organic material
- Entemobridae spp.	-	plants, tussocks, nematodes
- Lepidocyrtis	-	tussocks
- Pseudosinella	-	fungi
- Tomocerus	-	fungi
• Symphypleona		
- Sminhuridae spp.	-	plants, tussocks, nematodes, fungal spores
- Neelus	-	bacteria
- Bourletiella	-	living plant material
Total Collembola	-	

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7. Acarina (mites)

Mites are often found in larger numbers than springtails. Mites hunt, more than springtails, almost everything in the soil that is smaller than itself. Their diet contains bacteria, protozoa, fungi, nematodes, springtails, mites and smaller mites. Mites are found more often in grassland than on cultivated fields and horticultural land.
If there is enough soil structure, the mites will go deeper into the soil, especially faced with drought. They move through the soil air. After rain, the mites can multiply substantial. Stubble or raw organic matter with a high C / N ratio are favorable for mites. The same applies on other microorganism, every type of mite has its own specialization. For example, there are larger and smaller mites, depending on their size, can occur in the deeper parts of the soil.

7a Analysis list mesofauna

Acarina (acariformes) (quantity per 0,10 liter soil)		behavior / diet
• Acarina spp.	-	not identified mites
• Prostigmata	-	
• Astigmata	-	diet: bacteria, fungi and protozoa
• Cryptostigmata	-	moves easily through loose soil
• Mesostigmata	-	
• Gamasina	0.4	diet: micro- and mesofauna
• Uropodina	-	diet: bacteria, fungi, organic material

Evaluation / Summary:

This research / analysis is performed without a soil analysis package 2, which makes it difficult to draw too many conclusions, further the type of cultivation is unknown. Regarding the three main aims of this analysis the following conclusions can be made:

Diversity: moderate there are not many species found, whole groups are missing.

Mineralization: weak to moderate mineralization power,

Harmful organisms: barely relevant types found, which is very favorable.

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Nematodes are primarily associated with diseases on pests of crops caused by potato cyst nematodes, root lesion nematodes and root knot nematodes. However, these for the plant very harmful nematodes, are only a limited part of the total number of nematodes present in the soil. They are identified by a lancet, a type of needle with which they can open the plant root. In an average soil, the harmful species are only a few of the total number of nematodes. The nematode analysis of this soil screening paid less attention to the harmful nematodes, but more to the beneficial species, and those who have a significant role in the food web. There are 5 to 60 different nematode species to be found within a parcel soil. In total, there will be counted 400-4000 nematodes within 0,1 liter soil. Normally, there will be at least 8 billion nematodes present within 1 hectare soil.

The sizes of nematodes vary from 0.5 to 1.5 millimeters, they are 0.01 to 0.03 mm thick. The nematodes move primarily through groundwater.
Grazing by nematodes in fungi works strangely positively to the fungus in the soil. That renews itself and becomes more active. Due to this acceleration there will become more nutritional substances available to plants, such as nitrogen, phosphorus and sulfur in contrast to a situation with less nematodes. The more nematodes, the more active the life within the soil is. Furthermore the conversion systems function faster and more efficiently when the amount of nematodes is higher. The variation in types is important because some may be active at different temperatures. This specialization is less rivalry.

4a Analysis list micro/mesofauna

Nematodes (amount per 100 gram soil)		behavior / diet
Adenophorea (kl)		
• Araeolaimida (or)	-	diet: bacteria and fungi
- Anaplectus (gn)	-	
- Aphanolaimus (gn)	-	
- Chronogaster (gn)	-	
- Cylindrolaimus (gn)	-	
- Eastiania (gn)	-	
- Euteratocephalus (gn)*	-	
- Plectus (gn)	-	
- Rhabdolaimus (gn)	-	
- Teratocephalus (gn)*	-	
- Tylocephalus (gn)	-	
- Wilsonema (gn)	-	
• Chromadorida (or)	-	
- Achromadora (gn)	-	
• Desmodorida (or)	-	
- Prodesmodora (sf)	-	found in moist soil
• Dorylaimida (or)	20	diet: bacteria, fungi and organic material
- Actinolaimoidea (sf)	-	predatory nematode
- Belondiroidea (sf)	-	predatory nematode

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- Diphtherophoroidea (sf)	-	
- Trichodorus (gn47)	-	harmful for plants (root knot nematode) transfers viruses
- Paratrichodorus (gn)	-	harmful
- Dorylaimoidea (sf)	-	
- Longidorus (gn57)(option)	-	transfers viruses, harmful for plants
- Xiphinema (gn93)(option)	-	harmful for plants
- Leptonchoidea (sf)	-	
• Enoplida (or)	-	
- prismatolaimus (gn)	-	
- Ironus (gn)	-	
- Tripla (gn)	-	
- Tobrilus (gn)	-	
• Monhysteridae(or)	-	diet: bacteria and fungi
- Monhystera (gn)	-	mostly microbes
- Monhystrella (gn)	-	mostly microbes
- Mononchida (or)	-	predatory nematode
- Bathyodontoidea (sf)	-	predatory nematode: their diet contains other nematodes
- Mononchidae (sf)	-	predatory nematode: their diet contains other nematodes

Secernentea (klasse)

• Rhabditida (or)	1.400	in general: most common in moist soil and soil that contains an huge amount of humus diet : bacteria, fungi and organic material
- Bunonemoidea (sf)	-	general features of the specie
- Cephaloboidea (sf)	-	general features of the specie
- Chambersielloidea (sf)	-	general features of the specie
- Diplogasteroidae (sf)	-	general features of the specie
- Panagrolaimoidae (sf)	-	general features of the specie
- Rhabditoidae (sf)	-	general features of the specie
• Tylenchida (or)	10	roots of plants and fungi
- Aphelenchoidae (sf)	-	
- Aphelenchoides (gn197)	-	damages flowers buds and leafs
- Atylenchoidea (sf)	-	rare species
- Criconematoidea (sf)		
- Macroposthonia (gn67)	-	damages roots of plants
- Paratylenchus (gn80)	-	moderately harmful root surface eaters
- Hemicycliophora (gn89)	-	sheath nematode, damages roots of plants
- Heteroderoidea (sf)		
- Heterodera larve (gn88)	-	larva of (harmful) rootgall cyst nematodes
- Meloidogyne larven (gn40)	-	highly damaging to plants, root knot nematode
- Tylenchoidea (sf)		
- Anguina (gn27)	-	damages flowers buds and leafs (produces gall)

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- Ditylenchus (gn80)	-	damaging to stem and leaf
- Tylenchorhynchus (gn150)	-	moderately harmful (surface of roots eaters)
- Rotylenchus (gn50)	-	spiral nematode, damages the roots of plants
- Helicotylenchus (gn104)	-	moderately harmful for grass (roots)
- Pratylenchus (gn61)	-	causes severe damage, root lesion nematodes
- Radopholus (gn30)	-	damages roots of plants
- Tylenchus gn	-	moderately harmful (surface of roots eaters)
Other nematodes	-	not identified nematodes
Total nematodes	-	(total nematodes not damaging to plants)

The recognition and classification in the animal kingdom is debatable under this name because of differences in taxonomy systematics worldwide kl = class, or = order, sf = superfamily, f = family, gn = genus;. Gn47 = genus with 47 subspecies.
(Nematodes that are harmful to plants are for this mesofauna analysis only identified by "family". If there are nematodes found that are harmful to the plants/crops you grow, there has to be a further identification. Please request this optional research within 14 days after receiving this report).

5. Enchytraeidae

Potworms are white worms and are approximately 1 to 6 millimeters. They will mostly be found within the layer from 0 – 5 cm, but facing drought they tend to go deeper within the soil, 0 – 20 cm. In the summer, the amount of found worms will be less than found during winter. The animals benefit from a litter of mulch layer so that the soil will not be dry and there is food continually present in large quantities.
In contrast to other soil organisms, the white worms are not able to go into a protected resting stage, therefore they are impressible to drought. As the soil is more dry, the white worms will occur less. A higher organic matter content usually means a greater protection against drought for these organisms. The Enchytraeidae feed on organic material such as manure and plant remains, bacteria and fungi. Only in the extended mesofauna analysis, the potworms will be identified.

Convenient aspects:
- Extensive digging, improving soil structure.
- Storage of unbalanced plant nutrients.
- Mixing of organic substance with soil
- Depositing fecal pellets (improves structure of the soil)
- Transport of mineral parts through the soil, this can be about 1% of the total Topsoil a year
- Trans locating of microbes and fungi within the soil

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5a Analysis list micro- and mesofauna:

Enchytraeidae (quantity per 0,10 liter soil)		behavior / diet
Enchytraeidae spp.	-	(not identified worms)
Acheata	-	
Bryodrilus	-	
Buchholzia	-	
Cernosvitotiella	-	
Cognettia	-	mostly in moist soil / peat diet: mostly fungi
Enchytraeus Henle	-	very varied habitat
Friderica Michaelsen	-	
Grania	-	
Henlea	-	very varied habitat
Lumbricillus	-	moistly in manure / feces
Marionina	-	very varied habitat
Mesenchytraeus	-	mostly in moist soil / peat
Randidrilus Coates & Erseus	-	

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6. Collembola (springtails)

Springtails in general are not only soil insects, but some types also live on the crops and on the ground, instead of only within the soil. Springtails that belong to the mesofauna of soil have a slightly different look (blind, tiny paws and more worm-like). Other species that are found within the upper layers of soil life can have more pigment, a longer (jump) tail and will be larger.
Within soil that has a better structure, the deeper layers are also populated by springtails. During drought they crawl deeper into the soil, but after rain they will be back in a few hours in the top layer. They live in the airy part of the soil. During dry times and in the spring, the number of springtails will decrease with 20% of the average number in the other months, 1-2 days after rain there is a rapid increase possible. In non-glasshouse soils in the period between August to March, the number of the springtails is the highest. Mainly crop residues with a low C / N are favorable for springtails. The larger springtails are involved in the degradation of plant material (every Isotomidae) The smaller species are more involved with the humification processes in the soil. Springtails eat everything, mainly fungi, mold spores (preference for Rhizoctonia Solani) and other pathogens and nematodes. The size of springtails varies even within families.

6a Analysis list mesofauna

Collembola		behavior / diet
• Collembola spp.	-	not identified springtails
• Arthropleona		
- Poduromorpha		
- Poduridae spp.	-	dead organisms, (micro)fauna and other
- Hypogastrura	-	organic material, fungi, decayed plants
- Friesea	-	
- Onynchiuridae spp.	-	
- Onychiurus	-	hyphen, feces, bacteria, decay organic material
- Tullbergia	-	fungi
- Entomobryomorpha		
- Isotomidae spp.	-	decomposes organic material, dead organisms
- Cryptopygus thermophilus	-	mostly seen in organic fertilizer
- Folsomia	0.6	hyphen, feces, bacteria, decomposes organic material
- Isotoma	-	decomposes organic material
- Entemobridae spp.	-	plants, tussocks, nematodes
- Lepidocyrtis	-	tussocks
- Pseudosinella	-	fungi
- Tomocerus	-	fungi
• Symphypleona		
- Sminhuridae spp.	-	plants, tussocks, nematodes, fungal spores
- Neelus	-	bacteria
- Bourletiella	-	living plant material
Total Collembola	-	

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7. Acarina (mites)

Mites are often found in larger numbers than springtails. Mites hunt, more than springtails, almost everything in the soil that is smaller than itself. Their diet contains bacteria, protozoa, fungi, nematodes, springtails, mites and smaller mites. Mites are found more often in grassland than on cultivated fields and horticultural land.
If there is enough soil structure, the mites will go deeper into the soil, especially faced with drought. They move through the soil air. After rain, the mites can multiply substantial. Stubble or raw organic matter with a high C / N ratio are favorable for mites. The same applies on other microorganism, every type of mite has its own specialization. For example, there are larger and smaller mites, depending on their size, can occur in the deeper parts of the soil.

7a Analysis list mesofauna

Acarina (acariformes) (quantity per 0,10 liter soil)		behavior / diet
• Acarina spp.	-	not identified mites
• Prostigmata	-	
• Astigmata	-	diet: bacteria, fungi and protozoa
• Cryptostigmata	-	moves easily through loose soil
• Mesostigmata	-	
• Gamasina	0.4	diet: micro- and mesofauna
• Uropodina	-	diet: bacteria, fungi, organic material

Evaluation / Summary:

This research / analysis is performed without a soil analysis package 2, which makes it difficult to draw too many conclusions, further the type of cultivation is unknown. Regarding the three main aims of this analysis the following conclusions can be made:

Diversity: moderate there are not many species found, whole groups are missing.

Mineralization: weak to moderate mineralization power,

Harmful organisms: barely relevant types found, which is very favorable.

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