

Talk to the people
that work for the company
that makes a difference.

frontier

SOIL *life*

Providing growers with
long term, sustainable
solutions to improve soil
health and resilience.

What is Soil Life?

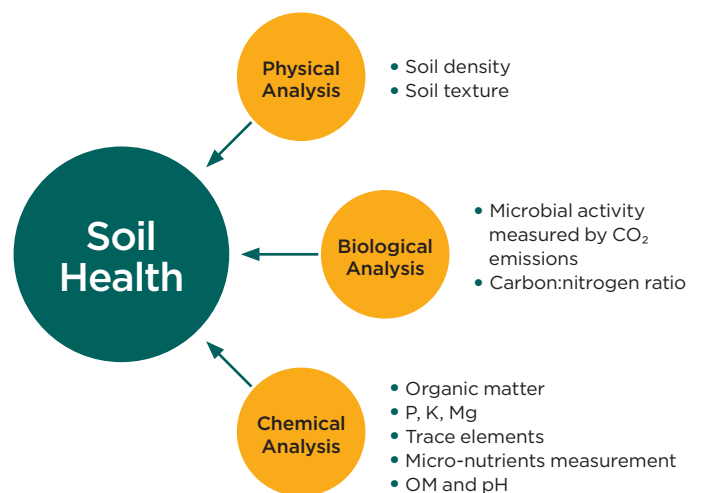
Frontier's Soil Life programme helps growers better understand the health of their soils through a comprehensive analysis service, with the information used to highlight areas for improvement and to develop an action plan to increase long term viability.

Soil Life also includes significant farm-scale demonstration projects as part of Frontier's 3D Thinking trials and research programme. These are conducted in partnership with host farmers from across the UK, with findings used to support ongoing management advice and planning.

How can the service support you?

We all know that the health of our soils is essential if crops are to reach their full potential. However, our soils bear the brunt of increasingly challenging weather events and have to resist compaction from heavy machinery, often in situations of declining organic matter levels. This can lead to low microbial activity and reduced nutrient and water availability, impacting crop growth and yields as a result.

With Soil Life, our experts work with growers to conduct an analysis of the physical, biological and chemical status of the soil. The results, coupled with the insight gleaned from our demonstration sites, can offer valuable information to aid future decisions.



SOIL *life*

Soil analysis tailored to your farm

Good soil health underpins all crop performance and our Soil Life reports provide you with detailed soil analyses tailored to your requirements. They are a useful aid when it comes to determining the next steps on your journey to improved crop yields and sustainable soil health.

Our reports are broken into three categories so whether you require a benchmark on organic matter levels, a breakdown of available nutrients in the soil or a full analysis of its biological and physical components, Soil Life will provide the right level of detail.

SOIL *life* FOCUS

For optimum yields, all the required nutrients and soil pH should be regularly monitored – not just the ‘major’ nutrients.

Soil Life Focus Report:

- Provides detailed nutrient availability information to aid nutrition planning
- Offers an analysis of macro- and micro-nutrients, as well as pH, cation exchange capacity (CEC) and organic matter.

SOIL *life* FUNDAMENTALS

To ensure soil nutrients are readily available to plants, a high level of microbial activity is needed. This requires aerobic soil conditions and a feed source for the microbes.

Soil Life Fundamentals Report:

- Provides everything from Soil Life Focus plus a detailed analysis of soil texture and biology to assess yield potential and enable more efficient use of nutrients
- Allows you to monitor soil biological activity which provides a good guide to the general health of any soil.

SOIL *life* ORGANIC MATTER

Organic matter is vital to good soil health as it feeds soil microbes, acts as a carbon store holding water and nutrients and it can help with resisting compaction. However, maintaining organic matter levels can be challenging. While organic matter naturally breaks down over time, levels can be depleted further due to some soil management practices and the inability of crop residue to replace what is taken from the soil during growth.

Soil Life Organic Matter Report:

- Analyses organic matter levels using two methods: ‘loss on ignition’ (LOI) and high temperature dry combustion (or Dumas)
 - LOI is calculated using the percentage weight of soil lost after burning at 430°C
 - Dumas is calculated by quantifying the amount of CO₂ released after burning a sample in an oxygen-rich environment at 1,000°C
- It sets a useful benchmark for continued monitoring and comparison.

The Soil Life report leads to action plans which deliver long term improvements in soil health.

Soil Life Fundamentals Report Example:

SOIL

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FUNDAMENTALS

Report No: 64183
Prepared for: Baston Fen Farm
Date: 01/01/2020
Field Reference: North Field
Sample Depth: 75/300 mm
Sample Moisture: 28%

CHEMICAL ANALYSIS

Index	PPM	Very Low	Low	Moderate	High	Very High
P	14	[Bar chart showing 14 PPM in Very Low range]				
K	177	[Bar chart showing 177 PPM in High range]				
Mg	100	[Bar chart showing 100 PPM in High range]				
Ca	10	[Bar chart showing 10 PPM in Very Low range]				
S	10	[Bar chart showing 10 PPM in Very Low range]				
Na	165	[Bar chart showing 165 PPM in High range]				
Mn	10	[Bar chart showing 10 PPM in Very Low range]				
Cu	22	[Bar chart showing 22 PPM in Low range]				
Fe	10	[Bar chart showing 10 PPM in Very Low range]				
Zn	10	[Bar chart showing 10 PPM in Very Low range]				
Mo	0.1	[Bar chart showing 0.1 PPM in Very Low range]				
B	3	[Bar chart showing 3 PPM in Very Low range]				

CEC: 12.2 meq/100g

SOIL TEXTURE CLASS

SOIL CHARACTERISTICS	
Soil texture	Clay Loam
Sand	40%
Silt	32%
Clay	28%
pH	7.4
OM LOI	4%
OM Dumas	2.6%
Ca:Mg	10.0

2

OBSERVATIONS

Crop establishment: Even establishment across the field
Visual signs of water logging: No sign of water logging
Soil density: Corer moderate pressure to depth
Post-harvest: Straw removed
Grassweeds: Small areas

BIOLOGICAL ANALYSIS

	Very Low	Low	Moderate	High	Very High
C:N Ratio	[Bar chart showing 10:2 ratio in Low range]				

MICROBIAL ACTIVITY

1

1 Microbial activity
 Healthy soil has a high level of microbial activity. Microbes interact with the crop's roots, increasing the uptake of water and nutrients.

2 Soil texture
 The soil texture classification indicates the proportion of sand, silt and clay and is the basis for all soil management decisions.

3 Soil pH
 Correcting acidity is one of the most cost effective ways to improve crop performance and maintain a healthy soil.

4 Organic matter
 Increasing the level of organic matter improves the soil's capacity to hold nutrients and resist compaction. In most soils, improving organic matter levels will ensure a more reliable crop performance and reduce cultivations when preparing a seedbed.

Soil Life demonstration sites

By working in partnership with several farmers to facilitate farm-scale research and trials, we are able to investigate different soil management techniques to help build sustainable arable systems that offer both practical and economical solutions for growers.

Soil and plant health experts from Frontier and its divisions, Kings Crops and SOYL, are currently working with seven farms across the country. Long term trials are already in progress, focusing on crop production strategies including cover crops, biostimulants, organic matter, precision technology, carbon management and regenerative agriculture.

With the sites situated in varying areas of the UK, we're able to encompass a variety of soil types and weather conditions amongst different farm challenges, characteristics and management practices. The insight gathered from each of the sites helps to enhance our existing agronomic expertise and enables us to share scientifically proven soil management techniques with other growers.

1 Ross-on-Wye Herefordshire

Soil Type: Sandy/silty clay loam
Site Focus: Building organic matter in soils.

2 Haddington East Lothian

Soil Type: Silty clay loam
Site Focus: Improving soil health and nutrient availability in a potato rotation.

3 Consett Durham

Soil Type: Silty clay loam. High altitude – soils remain cooler longer and lose heat more rapidly in autumn
Site Focus: Rebuilding organic matter and creating a sustainable cropping system in challenging soils.

4 Nassington Peterborough **Carbon Focus Site**

Soil Type: Clay loam
Site Focus: Investigating and monitoring carbon management methods.

5 Beverley East Yorkshire

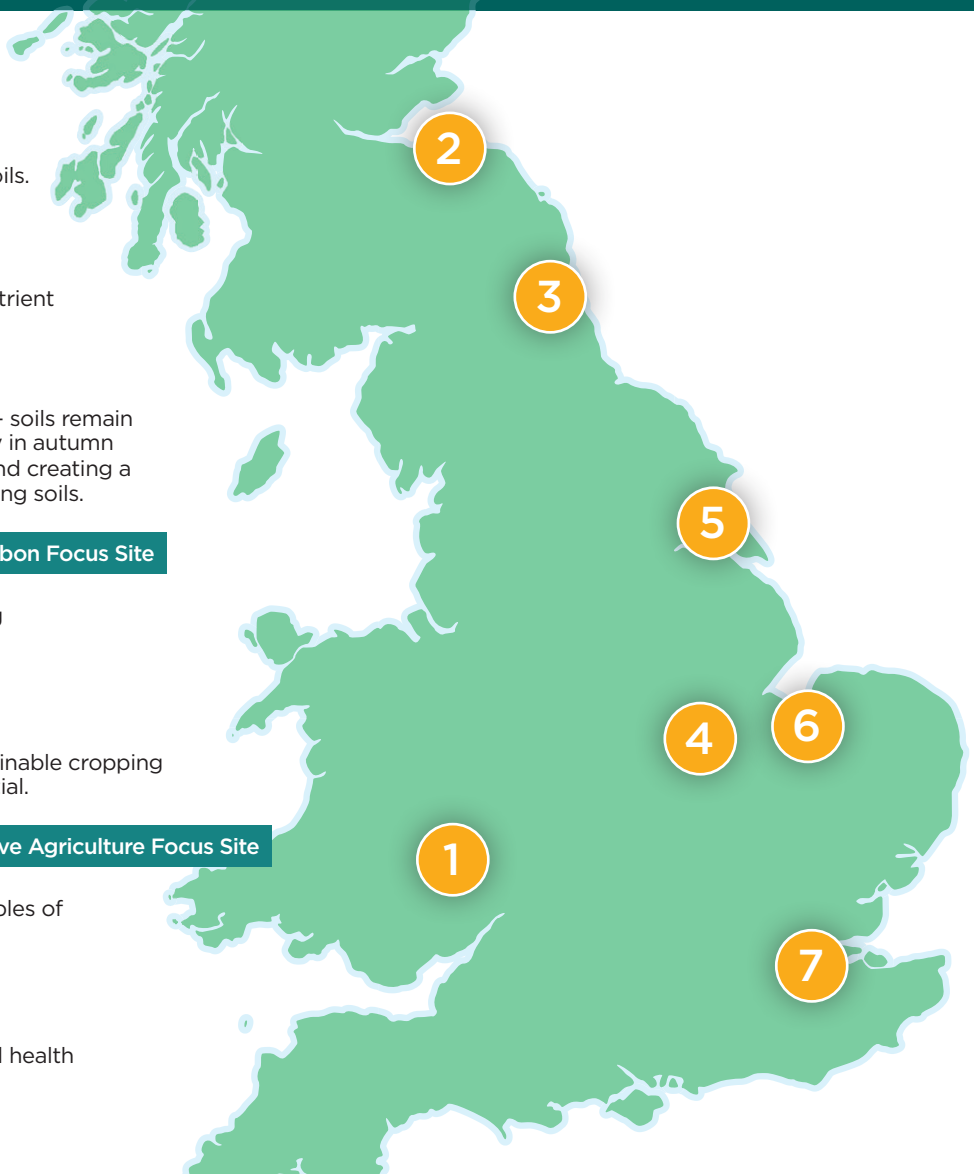
Soil Type: Clay loam
Site Focus: Building a resilient and sustainable cropping system to increase the soil's yield potential.

6 King's Lynn Norfolk **Regenerative Agriculture Focus Site**

Soil Type: Sandy loam over chalk
Site Focus: Investigating the core principles of regenerative agriculture.

7 Longfield Kent

Soil Type: Clay loam over chalk
Site Focus: Building and maintaining soil health across a range of soil types.



Getting started with Soil Life

The experts at Frontier and its divisions, Kings Crops and SOYL, will work with you to find the best solutions for your farm business when it comes to long term, sustainable soil health. We understand the value of data driven, scientifically proven insight that is both practical and reliable, with Soil Life compiling everything you need to know in one place so that you can implement solutions that work for you now and into the future.

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For more information about Soil Life,
speak to your Frontier agronomist, Kings or SOYL.

T: 0800 227 445 W: www.frontierag.co.uk/soil-life

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