



Soil health assessment tool

Date of soil sampling

Farm name

Field name or number

Region Help

Top soil texture Help

Ratio of sand, silt and clay Sand (%) Silt (%) Clay (%)

Rotation Help

	Crop	Yield
Year 1	Spring Barley	
Year 2	Winter Oilseed Rape	
Year 3	Winter Wheat	
Year 4	Spring Beans	
Year 5	Spring Barley	
Year 6	Winter Oilseed Rape	

Over the rotation above how many times has each activity / organic application been applied to the field?

For example if the crop residue is left on the field at the end of three of the six seasons and the field is ploughed twice over the rotation then enter 3 in crop residues and 2 in the plough box

Land preparation	Help	Organic materials	Help
Bed forming	<input type="text"/>	Farm Yard Manure	<input type="text"/>
Discing	<input type="text"/>	Crop residues	<input type="text" value="5"/>
Deep soil ripping	<input type="text"/>	Chicken or turkey manure	<input type="text" value="1"/>
Discing and levelling	<input type="text"/>	Cow slurry	<input type="text"/>
Soil loosening and ridging	<input type="text"/>	Pig slurry	<input type="text"/>
Harrow	<input type="text"/>	Biosolids	<input type="text"/>
Plough	<input type="text"/>	AD	<input type="text"/>
Rolling	<input type="text"/>	Biopesticides	<input type="text"/>
Minimal tillage	<input type="text" value="6"/>	Compost	<input type="text"/>
No til	<input type="text"/>		<input type="text"/>

Cover crops Help

Catch crops

Cover crops

Green manure

VESS Structure quality Help

Soil compactness Help

Worms Help

SOM (%)

pH

P (mg/l)

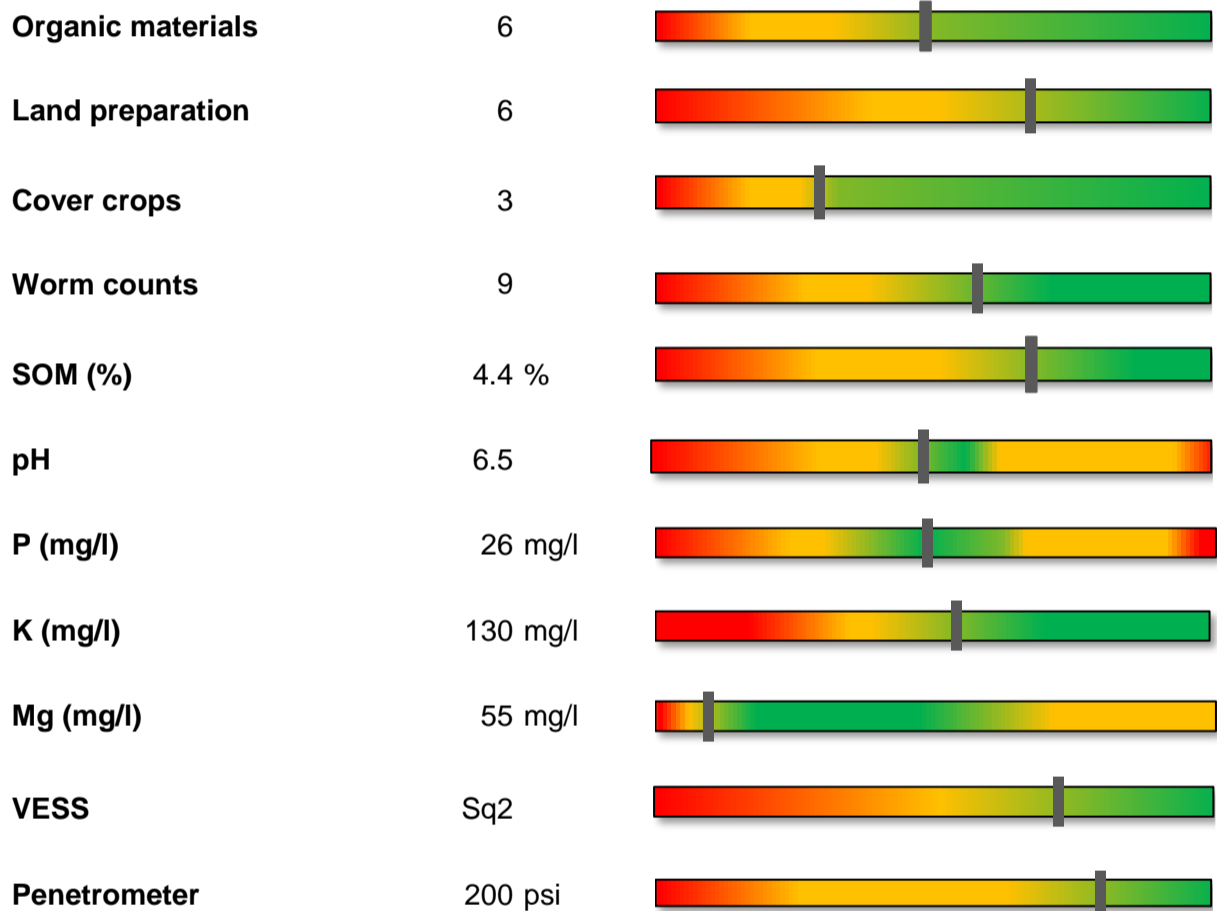
K (mg/l)

Mg (mg/l)

Overall Quality Score

64

Date of soil sampling	12 August 2020		
Farm name	Lenham		
Field name or number	Cherry Garden		
Region	Southern England	Rainfall	Mid
Top soil texture	Clay loam	Sand	
		Silt	
		Clay	



Field name or number	Cherry Garden	Date	12 August 2020
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After the Soil Health Assessment questionnaire is completed, a performance score is automatically generated. There are three levels of performance; **Red**, **Amber** and **Green** which represents your soil health.

Green: (Overall score is greater than 63) Your soil is good health to help ensure crops are grown to give the right yield of the right quality in a sustainable way.

Amber: (Overall score between 26 and 63) Overall your soil is in good condition, although there are some areas where attention is needed to help improve sustainable productivity.

Red: (Overall score below 26) Your soil is not functioning to its full capacity, sustainable productivity, environmental quality, and net farmer profits are jeopardised over the long term unless action is taken.

From the data provided your score is 64

To allow a proper analysis of the overall score the levels of performance for each indicator is shown below with guidance notes to help you develop a continuous improvement plan for your soil health.

Chemical	
pH	6.5
Key point	pH is optimum for production of most UK arable and vegetable crops
Explanation	This is the optimum pH range for production of most UK arable and vegetable crops
Recommendations	Ensure that you have a robust liming plan in place on non-calcareous soils to maintain pH
Further information	Managing pH Principles of nutrient management RB209
P	26mg/l
Key point	Index 3 – potential risk to environment, but P required for P-responsive crops including potatoes, maize and some vegetable crops. Application of organic manures still recommended as a supply of other nutrients but generally no requirement for additional fertiliser P
Explanation	Moderate P status soil (good P reserve status); Index 3. No P-containing fertiliser is required but continue to monitor soil reserve. P may still be applied in organic materials where these are used to build organic matter or supply other crop nutrients
Recommendations	A clear rotational P management plan is needed to sustainably maintain the soil reserve without increasing the environmental risk.
Further information	Principles of nutrient management RB209 Farming rules for water

K	130mg/l	
Key point	Index 2-	
Explanation	Moderate K status soil; moderate K reserve status; Index 2- There may be no response of the current crop to a K-containing manure/ fertiliser but replacement of the K removed in the crop is important to maintain the soil reserves.	
Recommendations	Moderate K status soil (moderate K reserve status); There may be no response of the current crop to a K-containing manure/ fertiliser but replacement of the K removed in the crop is important to maintain the soil reserves.	
Further information	Principles of nutrient management RB209	Farming rules for water
Mg	55mg/l	
Key point	Index 2	
Explanation	Moderate Mg status soil (moderate Mg reserve status); There may be no response of the current crop to a Mg-containing manure/ fertiliser but replacement of the Mg removed in the crop is important to maintain the soil reserves.	
Recommendations	A clear rotational Mg management plan will allow you to maintain the soil reserve without compromising productivity.	
Further information	Principles of nutrient management RB209	Farming rules for water

Physical	
VESS	Sq2
Key point	Good
Explanation	Good topsoil structure. Porous with good root distribution and a mix of small and larger rounded aggregates with pleasant earthy smell.
Recommendations	<p>Make a comparison with an area known to be poor (e.g. gateway) and likely to be good (e.g. hedge bottom).</p> <p>Consider including consideration of subsoil.</p> <p>Assess regularly and especially after cultivation or trafficking in wet conditions.</p> <p>Soil structure has to be managed on a site and season specific basis. Identify areas at risk and maintain good soil structure throughout the rotation.</p>
Further information	SRUC Valuing Your Soils Arable soil management
Penetrometer	200psi
Key point	Soil strength is moderate to high; may be some restriction to root growth
Explanation	The moderate/high soil strength indicates that the soil is moderately well-structured. There may be some restriction to the penetration of roots and water to depth. A high stone content can lead to high /variable readings.
Recommendations	<p>Penetrometer readings can be very variable - ideally at least 20 measurements should be made at or close to field capacity to give a representative measure of the extent and depth of any compaction. To judge whether there is a management issue it can be useful to make a comparison with an area known to be poor (e.g. gateway).</p> <p>Assess regularly and especially after cultivation or trafficking in wet conditions.</p> <p>Soil structure has to be managed on a site and season specific basis. Identify areas at risk and maintain good soil structure throughout the rotation.</p>
Further information	Cultivation and crop establishment A guide to better soil structure

Biological	
Worms	9 earthworms in the soil pit
Key point	Active
Explanation	In cropping systems, no or non-inversion tillage coupled with regular inputs of organic matter can lead to large and diverse earthworm populations.
Recommendations	There is no right number. Considering the earthworm species present and the balance between juveniles and adults can be useful to give more information about the factors affecting earthworm populations.
Further information	Agricultural management effects on earthworm populations
SOM	4.4%
Key point	On track for the climate/ soil type
Explanation	Likely to be associated with crop residue returns and other regular organic matter inputs e.g. through cover cropping or compost.
Recommendations	There is no clear evidence for a critical value of SOM. Changes in SOM as a result of changes in practice can take a long time to detect. Ensuring there are regular additions of organic matter to 'feed' the soil is more important than achieving any particular measured value.
Further information	Measuring and managing soil organic matter

Management**Land preparation****6**

Key point Low cultivation intensity across the rotation

Explanation Low cultivation/tillage intensity indicates less overall disturbance to the soil. Reduced tillage intensity is often associated with a cropping system that has a reduced risk of sheet, rill and wind erosion and an increased population of soil invertebrates. In some soils, the soil may be tighter in the 10-25 cm layer as the soil is not disturbed by cultivation.

Recommendations Reduced cultivation intensity coupled with increased organic materials additions through crop residues, cover crops, manures and/or composts gives a multiplicative benefit for soil health.

Further information [AHDB: Cultivation and crop establishment](#)

Cover crops**Used 3 times in the rotation**

Key point

Explanation You seem to have achieved good ground cover across the rotation. Increased duration of ground cover in the rotation reduces run-off and erosion risk, and has also been shown to increase biological activity as the growing plants help to feed the soil organisms via root exudates.

Recommendations Evaluate when/ where bare ground still occurs in the rotation and consider the range of simple options available to you to further increase the duration of ground cover. Intercropping and companion cropping approaches can further diversify the inputs to soil organisms. But take an investigative approach, evaluate the impacts on yield and input use and also ensure the approaches you take fit with effective weed management.

Further information [AHDB: cover crop guide](#)

Organic materials**Applied 6 times during the rotation**

Key point Organic materials added are having a beneficial effect on the soil

Explanation You are including regular amounts of organic material additions in crop residues, cover crops, manures and/or composts. Where this is coupled with reduced cultivation intensity this gives a multiplicative benefit for soil health.

Recommendations Increase the diversity of organic materials incorporated. Composted materials are excellent soil conditioners; livestock slurries supply nutrients but add little fibrous material. Use your knowledge of your soil organic matter and nutrient benchmarks to target organic materials to the rotational phases and soils where they will give the most benefit. Where soils already have SOM levels that are above average for the soil/ climate then you may see little benefit from further increasing additions of organic materials, apart from nutrient supply.

Further information [Measuring and managing soil organic matter](#)

While every care has been taken in the preparation of the advice contained in this report, NIAB TAG cannot accept responsibility for any loss or inconvenience arising from following the information herein.

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