

SIMPLY SUSTAINABLE SOILS

Six Simple Steps for your soil to help improve
the performance, health and long-term
sustainability of your land



ASDA



LINKING ENVIRONMENT AND FARMING



At ASDA we see the farmers we work with as partners, not just suppliers. We strive to develop close working relationships with all of them. The challenge of sustainability and stewardship of natural resources has to be met by co-operation.

At ASDA, we are working to reduce our impact. Since 2005 we've made great strides in reducing our own operational carbon impacts and in fact have reduced our carbon footprint by 7% between 2008-2009. Sustainability is at the heart of everything we do, from production right through to packaging and distribution. Since working within Walmart we've learnt from each other, and together we've set ourselves the ambitious target of cutting 20 million tonnes of CO₂ out of our business by 2015.

So we welcome the opportunity to develop this booklet with LEAF for our farmers and growers. Sustainability is at the heart of LEAF's long term aims and objectives. Delivering practical and realistic approaches to make our farming systems more robust is key to change on the ground and here are some achievable steps for making that happen.

Dr Chris Brown ASDA Head of Sustainable Sourcing



As a farmer soil is my greatest asset, it is essential that I manage it in a way that is not only restorative but also ensures the health of my crop and grassland.

LEAF is delighted to be developing this booklet in association with ASDA to demonstrate our joint commitment to raising awareness and opportunities for the best of soil management.

On a global scale we are starting to feel the pinch of climate change and the pressures of food security. Effective soil management is of premium importance and we hope that this brochure will inspire many farmers to reflect on utilising this most valuable resource. One area in particular is the importance of measuring progress, and delivering change is something that is key to the work that LEAF has been developing through Integrated Farm Management.

If you make only one change on your land this year as a farmer then make this your first step.

Stephen Fell LEAF Chairman

Credits

This brochure has been developed by **LEAF** with particular thanks to:

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Dr Alastair Leake Chairman, Soil Management Initiative (SMI)

Väderstad

'The nation that destroys its soil destroys itself'

Franklin D Roosevelt

With increasing pressure on the world's natural environment and resources it is essential that we develop farming systems that have a low impact on the environment, and are also highly productive in meeting the needs of a growing global population. Land, water and nature are all under pressure and competition.

Getting the balance right to ensure economic prosperity, environmental sensitivity and social gain are critical. With Walmart ASDA's commitment to supporting farmers in taking another step in the sustainability journey and LEAF's practical approach to setting out those steps through Intergrated Farm Management, this Six Simple Steps for your soil brochure will help us to work together to ensure better and more efficient management of our land and a more secure future for our farmers and consumers.

Land degradation will remain high on the international agenda in the 21st century. This is due to its impact on world food security and quality of the environment.

Globally soil erosion and desertification have a significant impact on food production. In South Asia, annual loss in productivity is estimated at 36 million tonnes of cereal equivalent, valued at £3,390 million by water erosion, and £1,130 million due to wind erosion. In the USA it is estimated the total annual cost of erosion from agriculture is about £27 billion per year, i.e. about £155 per ha of cropland and pasture. Erosion of topsoil is also a serious problem in Australia and China. 11% of the global land surface is Class I, II and III and this must feed the six billion people today and the 7.6

billion expected in 2020. According to UN figures, to date an area big enough to feed Europe (300 million hectares - about 10 times the size of the UK) has been so severely degraded that it can no longer produce food.

Whilst not on the same scale, soil erosion and degradation in the UK has increased. Most fields are experiencing erosion rates of up to 1.0 t/ha/yr and with soil regeneration rates in the range of 0.5 – 1.0 t/ha/yr, this is not sustainable.

Added to this from recent climate change projections, it is likely that the UK will tend to get warmer, hotter, drier summers and milder, wetter winters. We are also likely to experience sea level rise and more frequent and intense extreme weather events, such as summer heat waves and heavy winter rainfall. These climatic changes all present a higher risk to the stability of our soil.

This brochure is to help ensure you are getting the best out of your soil, to create an awareness of the importance of soil quality and allow you to track changes in soil quality over time.

It is based on Six Simple Steps to help improve the performance, health and long-term sustainability of your land. In the first instance, take samples from your easiest and most productive field, and your most frustrating and least productive field. Record and map your results to build-up a long term picture of how your soil is improving and where possible take photographs of those areas prone to erosion, compaction and poaching.

Six Simple Steps for your soil

1. Soil Structure
2. Drainage
3. Compaction
4. Soil Organic Matter Status
5. Soil pH & Nutrients
6. Biological Health

General Introduction

Soil is made up of a mixture of organic and mineral matter, including rock particles, with air and water. The organic matter and minerals, together with manufactured fertilisers and organic manures supply the available nutrients that the crop principally relies on to grow, so accurate assessment, testing and sampling is very important both for economic and environmental reasons.

What does a good soil look like?

Any farmer will tell you that a good soil:

- drains well and warms up quickly in the spring
- does not crust after planting
- soaks up heavy rains with little runoff
- stores moisture for drought periods
- has few clods and no hardpan
- resists erosion and nutrient loss
- supports high populations of soil organisms
- has that rich, earthy smell
- produces healthy, high quality crops and grass
- is easy to work in a range of conditions.

All these criteria indicate a soil that functions effectively today and will continue to be productive long into the future. Creating soils with these characteristics can be achieved by using management practices that optimise the processes found in your soil. Good soil structure is vital for growing crops. It regulates soil erosion and gaseous exchange rates, the movement and storage of water, soil temperature, respiration and development, nutrient cycling,

resistance to structural degradation and supports biological activity. It also promotes germination, emergence, crop yields, grain quality and soil health.

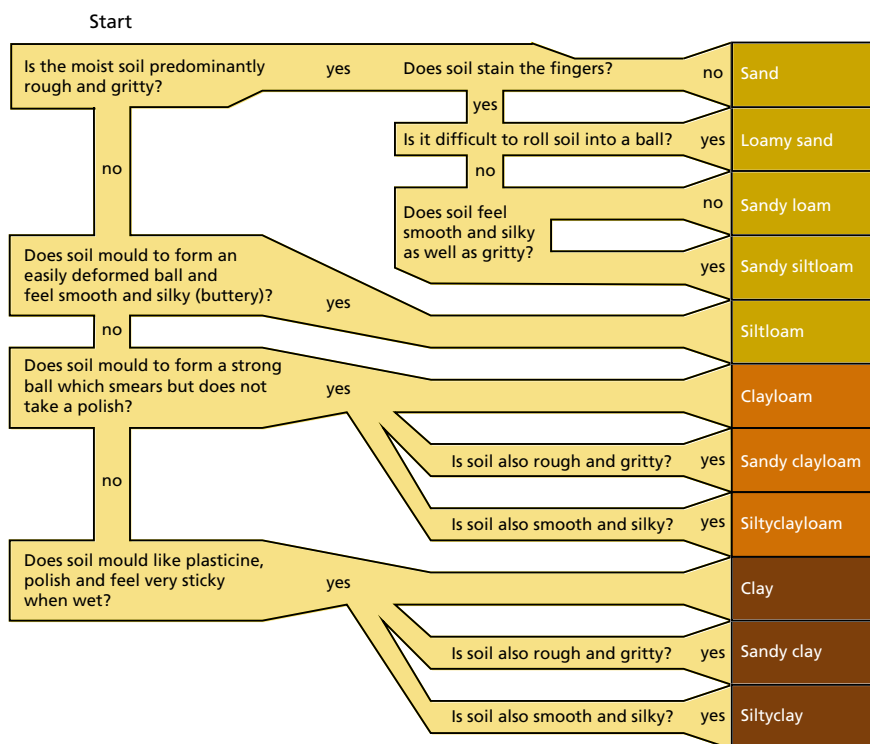
Good structure also increases the window of opportunity to cultivate at the right time and minimises tillage costs, tractor hours, horsepower requirements and the number of passes required to prepare seedbeds.



Work out your soil texture

Take about a dessert spoonful of soil. If dry, wet up gradually, kneading thoroughly between finger and thumb until soil crumbs are broken down. Enough moisture is needed to hold the soil together and to show its maximum stickiness. Follow the paths in the diagram below to work out the texture class.

How to texture your soil



At the end of each section is a table to help you score your soil's health. Scores can be entered into the table on page 32 to help give an overview of the health of your soil. This will help you focus on the successes and those areas where improvement is required.

Each step is broken down in three scores:

- 0 (poor)
- 1 (moderate)
- 2 (good)

The typical properties of soils with condition scores of 0, 1 and 2 are summarised below:

0 (poor)

- Low load bearing capacity - therefore prone to wheel damage
- Poor drainage and root development
- Poor nutrient uptake
- High risk of runoff and/or soil erosion

1 (moderate)

- Poor root development
- Impeded drainage
- Restricted nutrient uptake
- Moderate risk of runoff and/or soil erosion

2 (good)

- Good air and water infiltration
- Good load bearing capacity
- Good porosity allowing root exploitation and high crop yields
- Low risk of runoff and/or soil erosion

There is a wide range of information readily available for farmers in addition to this brochure (see page 33).

Getting Started

It is helpful to know the cropping history of your fields and establish your soil type, to identify the most suited crops and rotation.

Accurate measurement of soil texture requires laboratory analysis, but for practical purposes texture can be assessed by hand using the method on page 8.



What to monitor? - Six Simple Steps for your soil

• **Physical Health**

Step 1 Soil Structure

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Step 2 Drainage

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• **Nutrient Balance & Exchange**

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• **Biological Health**

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Physical Health

Step 1 – Soil Structure

Knowing the size, shape and arrangement of aggregates and air spaces is important to maximize the potential for aeration, drainage and root development. Good soil structure consists of well formed aggregates, that are easily broken between the fingers when moist. Vertical fissures lead roots downwards and the soil is structurally stable. Poor soil structure is characterized by hard and sharp-edged aggregates, which are more difficult to break apart. Horizontal 'pans' restrict root growth and development.

There are two tests for assessing soil structure. The Quick Test is recommended for all fields and the Visual Soil Assessment is a more detailed test for your best and worst fields.

Quick Test

Dig a small soil pit (40cm by 40cm by 50cm deep). Lift out a section of soil and examine it. Assess:

Topsoil depth

Generally shallower under permanent pasture than cultivated soil

Colour

Soils rich in organic matter will have rusty, grey mottles indicating poor drainage and previous waterlogging

Smell

Waterlogged, anaerobic conditions prevent break down of organic matter and manures, denoted by a foul smell

Roots

Should be down to 50cm + in depth

Earthworms

10 – 15 earthworms is ideal in your sample

Cracks, pores and burrows

Look for clear vertical channels between blocks that allow movement of water, air and nutrients

Visual Soil Assessment (VSA)



The VSA is based on key soil conditions and plant performance indicators of soil condition, presented on a scorecard. Soil condition is ranked by assessment of the soil indicators alone, it does not require field history knowledge. Plant indicators, however, require knowledge of immediate crop and field history. (To carry out a full soil and plant performance assessment download the Visual Soil Assessment (Väderstad & SMI) see page 33).

Soil condition should be assessed using a visual score of 0 (poor), 1 (moderate), or 2 (good), based on the condition observed when comparing the field sample with the three photographs on page 15. The scoring is flexible, so if the sample you assess does not clearly align with any one of the photographs and sits between two, a score can be given, for example, 0.5 or 1.5.

Getting prepared

You will need:

- one spade
- one plastic basin (approx .35cm by 35cm by 20cm deep)
- one heavy duty plastic bag
- VSA photographs (page 15)
- notebook & pencil

When to carry out the assessment

For arable cropping, ideally in spring when the soil is moist or after harvest and before cultivation. Also a second test after the final cultivation to check the condition of the seedbed. For grassland, ideally in spring or after the final silage/hay cut and before any cultivations. The VSA should be carried out when the soil is at the correct moisture content for cultivation, or is sufficiently dry to prevent compaction by wheeled traffic.

If you are not sure when to sample, apply the 'worm test'. Roll a 'worm' of soil on the palm of one hand with the fingers of the other until it is 50mm long and 4mm thick. If the soil cracks before the worm is made, or you cannot form a worm (e.g. if the soil is sandy), the soil is suitable for testing. If you can make the worm, the soil is too wet for testing. As long as the soil moisture content is right, test at a similar time each year. This will make your results more comparable from year to year.



Setting up

Allow about half to one hour per field. The assessment process takes about 10-15 minutes for each sample, and you should sample three or four sites in each field.

Avoid areas such as headlands or loading areas, which may have had heavier traffic than the rest of the field (VSA can also be used, however, to assess the effects of high traffic loading on soil quality).

Make a note of where you carry out the assessments so you can return there for future monitoring.

Carrying out the test

Take a test sample. Dig out a 20cm cube of topsoil with a spade. If the topsoil is less than 20cm deep, take off the subsoil before moving to the next step.

The drop shatter test

Drop your sample a maximum of three times from a height of 1m (waist height) into the plastic basin. Lay the soil out on the large plastic bag, grading the pieces so that the coarsest clods are at one end and the finest aggregates at the other end. This provides a measure of aggregate size and distribution.

Compare the resulting distribution of aggregates with the three photographs opposite.



Typical distribution of aggregates in cropped and grass land



Poor (0)

Soil dominated by extremely coarse, very firm clods with very few finer aggregates.



Medium (1)

Soil contains significant proportions of both coarse firm clods and friable, fine aggregates.



Good (2)

Good distribution of friable finer aggregates with no significant clodding.



Step 1 soil score

Indicator	Poor (0)	Medium (1)	Good (2)
Physical			
Soil Structure (VSA score) (a)	Hard, platy, aggregates difficult to break	Somewhat blocky	Crumbly, loose

Case Study



Close soil monitoring and careful management helped revive a heavy clay soil for Yorkshire ASDA BeefLink farmer Mike Powley.

When Mike Powley returned from college to the family farm at Green Hammerton near York, he was determined to improve the heavily

compacted clay soils they had recently taken on. Initial soil monitoring revealed a mess.

"It was unbelievable what we were turning over - the compaction was horrendous and the structure had dilapidated," he recalls.

Judicious subsoiling of the clay loam over clay was necessary to remove years of plough pans. The nutrient status also needed to be brought back on track: "Lime, phosphate and potash indices were all less than 1." Farm yard manure added organic matter and fertility.

The salvage plan worked and he now has "amazing stuff" that will yield a 12.5t/ha cereal crop. The land has become the base for the farm's 100-strong beef suckler herd, sown to grass varieties chosen to ensure heading dates match grazing and silage requirements. Red and white clovers enrich the sward that puts out grass even during the driest of droughts.

But he is fastidious about management. "We never touch the field when it's wet. Cultivations are done with a 100hp tractor with a complete set of duals. I aim for a high power-to-weight ratio with just 7psi in the rear tyres and 4psi in the front. We don't leave a mark."

This is coupled with regular inspections, and the spade has become a trusted friend. "You can have the best cows in the world, but if the soil structure's not right, you won't give them the grass they need."

It means he maximises liveweight gain from grass and has an easier job working the soil. "You don't have to stick the power harrow in to more than two inches and can go a lot faster - the diesel saving is phenomenal."

Step 2 – Drainage

A well drained soil means water can pass through easily and the soil avoids becoming waterlogged (anaerobic). Check for areas where water is lying on the surface, poaching problems are evident and erosion has occurred.

The colour of the soil is a useful indication of soil drainage, aeration, soil wetness from late autumn to early spring, and soil damage.

Warm, uniform, brown and black = good drainage

Grey mottles = potential drainage issues

Grey soil colours due to reduced forms of manganese and iron in the topsoil indicate the soil is waterlogged and deficient of oxygen for long periods. This poor aeration leads to a build-up of carbon dioxide and methane, and reduces the ability of plants to take up oxygen, water and nutrients, particularly nitrogen, phosphorus and potassium. Poor aeration also slows the breakdown of organic residues, and can induce chemical reactions toxic to plant roots.



Poor (0)

Soil colour has become significantly paler due to gleying because of persistent pugging.



Medium (1)

The colour of the topsoil is somewhat paler due to the early stages of gleying because of moderate pugging.



Good (2)

Dark coloured topsoil indicating a well aerated soil with a good turnover of organic matter.

Step 2 soil scores

Indicator		Poor (0)	Medium (1)	Good (2)
Physical				
Drainage	(b)	Coarse orange and grey mottles: Water lays for a long time, evaporates more than drains, always very wet ground	Medium orange and grey mottles: Water lays for short period of time, eventually drains	Mottles generally absent: No ponding/runoff, water moves through soil steadily, soil not too wet or too dry
Water Movement	(c)	Absorbs water very slowly, lots of runoff and erosion, ponding after moderate rains	Absorbs water - but more slowly some runoff and erosion, ponding after heavy rains	Rainfall soaks in, very little runoff and erosion, water does not pond

Step 3 – Compaction

Compaction is where soil has been squashed into a solid, impermeable layer, either at the surface or within the topsoil and subsoil. Compacted layers restrict the movement of air, water and nutrients down the soil profile.

It leads to poor root growth, which stresses the plant and reduces its response to nitrogen and other nutrients.

Dig a hole 50cm deep when the soil is not excessively wet or dry. Look how far the roots and moisture extend down the profile and look for any obvious change in the soil structure. Where the spade meets resistance is where compaction starts - this will also help identify what the cause is and whether action is required.



Step 3 soil scores

Indicator	Poor (0)	Medium (1)	Good (2)
Physical			
Topsoil Compaction (d)	Obvious hardpan, poor rooting	Some restrictions to penetration and root growth	Easy penetration and good root growth
Subsoil Compaction (e)	Hardpan and/or soil occurs in large compressed pieces, roots absent	Soil occurs in medium pieces, root penetration with some difficulty	Soil occurs in small pieces, roots penetrate without difficulty

Nutrient Balance & Exchange

Step 4 – Soil Organic Matter Status

The soils organic matter contains dead organisms, plant matter and other organic materials in various phases of decomposition. Humus, the dark-coloured organic material in the final stages of decomposition, is relatively stable. Organic matter and humus serve as a reservoir of plant nutrients and water; they also help to build soil structure and provide a good growing environment.

Testing for organic matter status can be undertaken in a laboratory. You can also assess the organic matter content visually – soils that are dark brown/black generally have ‘high’ organic matter levels and light brown coloured soils ‘low’ levels.

Organic matter is important in all types of soils, so when you see that there is a lack of organic matter in a soil/visual test, consider adding more organic inputs. You can improve the organic matter status of your soil by adding organic materials (e.g. livestock manures, biosolids, composts etc.), incorporating crop residues and growing green manures.



Step 4 soil score

Indicator	Poor (0)	Medium (1)	Good (2)
Nutrient Balance & Exchange			
Soil Organic Matter Status ^(f)	Organic matter levels are low, soil is crusty, cloddy, hard. Light brown in colour	Organic matter levels moderate, some crusting and clods. Brown in colour	Organic matter levels are high, soil is friable, with good structure. Dark brown in colour

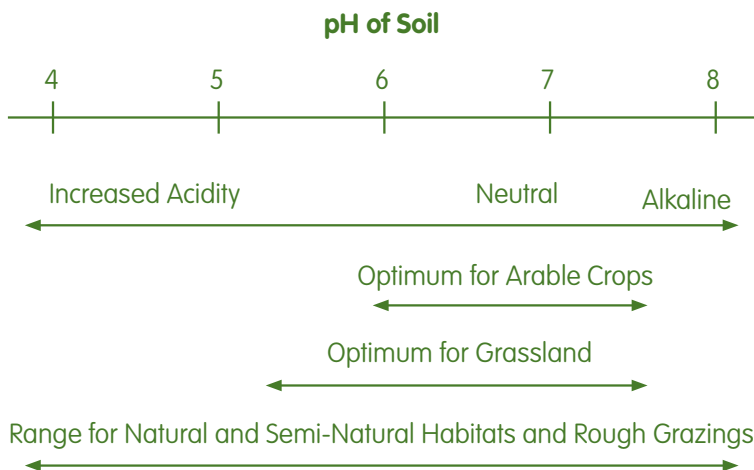
Step 5 – Soil pH & Nutrients

A soil test will help you decide how many additional nutrients are required, allowing a more targeted approach to nutrient use, saving time and money and optimising plant growth. Test for pH and nutrients every three to five years.

The pH determines the relative acidity or alkalinity of a soil and is important to assess in order to maximize crop growth. pH is measured on a scale of 1 to 14 (but less than 4 and more than 9 is uncommon), with 7 being neutral, below 7 being acidic and above 7 being alkaline.

Correcting the pH status of your soil by applying lime to reduce acidity is a simple and effective way to increase crop productivity.

Using the chart below you can build up a picture of your best fields and identify problem areas on the farm through 'scoring' your soil health.





Nutrients need to be managed so that supply to the crop is matched by demand. N, P and K are all key nutrients which need to be tested regularly, every three to five years. The availability of these nutrients is affected by soil pH in different ways and it is important to be aware of these impacts.

How to test for pH and nutrients

- Twist a sampling auger/soil corer down to 7.5 cm in grassland fields or 15cm in arable fields
- In a bucket, collect 25 cores of soil while walking the field in a 'W', avoiding gateways/feeding areas
- Transfer a sample to a plastic bag and label
- Send to soil laboratory

Where there are different soil types you may choose to send multiple samples from one field.

Sample every three to five years and (ideally) not within 6 months of manure, fertiliser or lime application.

If you believe you have a pH problem, quick soil pH test kits are available from agricultural merchants.



Step 5 soil scores

Indicator		Poor (0)	Medium (1)	Good (2)
Nutrient Balance & Exchange				
Soil pH	(g)	Too low for cropping system	Marginal for cropping system	Satisfactory pH for cropping system
Nutrient Status (P & K)	(h)	Low soil P and K status	Moderate soil P and K status	Satisfactory P and K status

Biological Health

Step 6 - Earthworms, Living Organisms & Plant Residues



The easiest way to determine biological health and functioning is to assess the level of earthworms in soil. Where there are particular problems in specific fields, for example, where plants are underperforming you may be even more interested in improving soil quality.

Observing the breakdown of plant residues, beetles and burrowing insect activity and smell are also good indicators of the biological health of your soil.

Earthworms

Earthworms are an excellent indicator of the biological health and organic matter status of your soil. The number of earthworms on your farm will depend on many different factors including soil type, weather and land management, and there may even be big differences in parts of the same field.

Earthworm numbers - your underground money makers, can be increased by reducing or eliminating cultivations, adding organic materials, and growing green manure crops.

Earthworms prefer a near neutral soil pH, moist soil conditions, and plenty of plant residues on the soil surface. They are sensitive to certain pesticides.

How to monitor for earthworms

Carry out a quick visual assessment by looking in your soil pit for earthworms and their burrows. A more detailed test is set out below.

Getting prepared

You will need:

- Notebook to record results
- Watering can
- Mustard powder
- Sample tray

Mix up a suspension of English mustard powder (50grams in 10 litres of water) and pour over a 1m² area. Count all the worms that appear from that area in the next 30 minutes. The higher your score the better quality your soil is. 10 – 15 earthworms is an indication of good health.

Step 6 soil scores

Indicator	Poor (0)	Medium (1)	Good (2)
Biological Health			
Earthworms (i)	Low numbers. No casts or holes	Moderate numbers. Few casts, holes or worms	High numbers (10^+ /m ²). Lots of casts and holes in tilled clods
Living Organisms (j)	Little or no observable soil life	Some moving soil organisms	Soil is full of soil organisms
Smell (in Spring) (k)	Pungent (sulphur) odour	Some odour, mineral odour	Sweet "earthy" odour
Plant Residues (l)	Little or no plant residues	Some plant residues, slowly decomposing	Residues in all stages of decomposition

Case Study



Keeping blow away sands in their place means regular checks and careful cropping for Yorkshire ASDA carrot grower Guy Poskitt.

Careful soil management is vital for Guy Poskitt, who farms near Goole in Yorkshire. One slip up and both his soil, and his crop, can be literally blown away.

"I've seen a lot of disasters, like 200 acres (80ha) of crop lost in a matter of hours," he notes.

The predominantly sand and sandy loams support 480ha of carrots, 140ha of sugarbeet and 60ha of parsnips, among other crops. The sandy soil is perfect for the high proportion of root crops grown.

But wind erosion is a major threat. "The smaller grains of sand will shred the top of the crop soon after it emerges."

Sugarbeet is planted with minimal cultivations, to ensure soil is disturbed as little as possible. But a different tactic is needed for the high-value maincrop carrots.

"We establish them with a barley cover crop. This is sown with the carrots in April or May and comes up fast to create a micro-climate - it's like little hedges protecting the emerging carrots. We then spray off the barley three to four weeks after drilling as soon as the carrots can stand the blowing sands and wind."

Regular checks to monitor condition of the soil are standard practice - harvesting roots at all times of the year puts it under constant threat of compaction pans. "Avoiding compaction is a big thing. We use satellite guidance to keep the same wheelings as much as possible."

How are you doing?

Now you have carried out the Six Simple Steps above, how did you do?

Complete the table on page 32 to give you an idea of the soil health of your fields and over time you will be able to score each field on an annual basis. These are the first steps to developing a healthier, more sustainable soil.

Poor:	0 - 4
Medium:	5 - 8
Good:	9 - 12

Photocopy the sheet overleaf for all your fields to build up a map of your soil health across your farm.

After assessing your best and worst fields to work out your soil strengths and weaknesses, make a clear plan for the whole farm and set out a five year timescale to ensure that you are making your soils work for your business.

Your Soil Score (please photocopy for each field you are testing)

Field Name:				
Soil Type/Texture:				
	Score (0, 1 or 2)	Value		
	Year:	2011	2012	2013
STEP 1				
Soil Structure (VSA Score)	(a)			
Step 1 Total	(a/1)			
STEP 2				
Drainage	(b)			
Water Movement	(c)			
Step 2 Total	(b+c)/2			
STEP 3				
Topsoil Compaction	(d)			
Subsoil Compaction	(e)			
Step 3 Total	(d+e)/2			
STEP 4				
Soil Organic Matter Status	(f)			
Step 4 Total	(f/1)			
STEP 5				
Soil pH	(g)			
Nutrient Status (P & K)	(h)			
Step 5 Total	(g+h)/2			
STEP 6				
Earthworms	(i)			
Living Organisms	(j)			
Smell (in Spring)	(k)			
Plant Residues	(l)			
Step 6 Total	(i+j+k+l)/4			
Overall total score	Total values of Steps 1-6			

Additional useful documentation is available through the **LEAF website** www.leafuk.org/leaf/farmers/inforesources

- A Guide to Better Soil Structure. Cranfield University
- The Cross Compliance Guidance for Soil Management (2010 edition)
- Fertiliser Manual (RB209). Defra
- Improving Soils for Better Returns. Eblex
- The LEAF Audit. LEAF
- LEAF Green Box. LEAF
- Soil Management Initiative - www.smi.org.uk
- Väderstad & SMI Visual Soil Assessment

Other useful websites include:

- www.defra.gov.uk
- www.environment-agency.gov.uk/business/sectors/soils.aspx
- www.nutrientmanagement.org
- www.smi.org.uk
- www.soil-net.com

About LEAF



LEAF (Linking Environment And Farming) promotes environmentally responsible farming. We help farmers to produce good food, with care and to high environmental standards, identified in-store by the LEAF Marque logo.

We build public understanding and trust of food and farming in a number of ways, including Open Farm Sunday and visits to our national network of Demonstration Farms.

Membership

LEAF is a membership organisation. LEAF members receive a range of benefits including the LEAF Audit, reduced rates for field events, visits to Demonstration Farms as well as regular newsletters and e-briefs. Becoming a LEAF member is also the first step to becoming LEAF Marque accredited. Join LEAF and make your business more sustainable.

Speak Out – the LEAF communications initiative



LEAF's 'Speak Out' initiative encourages farmers to improve their communication skills and provides them with the know how to explain 'what they do and why they do it.' Speak Out is a self-help CD-Rom that has already helped thousands of farmers tell their story. LEAF also arranges communications training events for farmers.

Making your Marque – The LEAF Marque



LEAF Marque is an assurance scheme based on LEAF farming principles. You can buy food grown on some of our members' farms in retail outlets across the country. Food carrying the LEAF Marque logo has been grown by farmers who are committed to improving the environment for the benefit of the countryside. LEAF Marque operates both in the UK and globally.

Technical Tools

LEAF produces a range of practical management tools for farmers to help them take up Integrated Farm Management (IFM). These include the LEAF Audit (www.leafaudit.org) and the Handbook for IFM. The LEAF Green Box is a simple toolkit to help farmers capture wildlife and resource management observations on farm and monitor any year on year change. The Green Box also encourages the involvement of local communities to help farmers with their monitoring work. See www.leafuk.org/greenbox

Let nature feed your senses



LEAF and the Sensory Trust are working together on this flagship project to connect disengaged groups and individuals with nature and the countryside, through food and farming. The project involves sensory rich visits to farms and nature reserves across England and is part of Natural England's Access to Nature programme, which is funded by The Big Lottery Fund's Changing Spaces programme. This project will finish in October 2012. See www.letnaturefeedyoursenses.org

Virtual Farm Walk

A fantastic online resource for schools to learn all about food and farming from the classroom. Children can learn about animals, crops, biodiversity, soil and lots more. Teachers have a whole range of worksheets to choose from either as a stand alone activity or as part of the preparation or follow up to a real farm visit. See www.virtualfarmwalk.org

Open Farm Sunday



The farming industry's annual open day that gives everyone the chance to meet the farmers who grow their food and care for the countryside. Open Farm Sunday is organised by LEAF and benefits from huge cross industry support to help farmers put on great events for the public. See www.farmsunday.org

For more information

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