



Best Practice Soil Management

Sheet 17.0a

Checking soil condition

Why change?

Soil is the most important resource on your farm. Check the condition of your soils regularly to help you match land use to erosion risk, and reduce costs by:

- avoiding soil compaction and related yield loss and disease problems
- improving soil structure to improve crop growth and yields
- improving ease of working
- improving availability of water and nutrients to crops
- minimising soil erosion risk
- reducing pest, weed and disease problems, e.g. slugs
- reducing waterlogging and improving drainage
- improve your carbon footprint



Waterlogging is one result of poor soil management

Steps to Success

1. **Check** the condition of the soils on your farm annually to help reduce soil damage, restore damaged soils and promote productivity and sustainable use of your soil resources. Remember that it is a requirement of cross compliance regulations that every farm in receipt of Basic Payment Scheme (BPS) must comply with the Soil Protection Standards (GAEC5) and Farming Rules for Water legislation.
2. **Develop** an action plan to check the condition of your soils:
 - inspect soils using inspection pits, at a range of sites across your farm. Be aware that soil characteristics can be highly variable both between and within fields so choose sites to reflect this variability
 - use a spade to expose a soil profile at each site to a depth of about 60cm
 - assess the condition of each profile. Look at the texture, structure, drainage and organic matter content of the soil. Soil texture refers to the balance of sand, silt and clay particles in the soil. Soil structure refers to the aggregation of soil particles.
 - Do a worm count in autumn or spring; higher numbers (more than 8 in a 5 minute visual soil assessment) can be an indicator of healthy soils
3. **Map** the risk of soil erosion on your farm. Understand the annual rainfall on your farm and the slope of your fields. Combine this information with your assessment of soil condition to identify areas of high, medium and low erosion risk.
4. **Manage** the condition of your soils. Correct any current problems and avoid the risk of future costs by:
 - adapting the layout of your farm to minimise soil damage and erosion
 - matching land use to erosion risk, e.g. avoid late sown winter cereals and grass re-seeds, potatoes and maize on high risk areas such as long steep slopes, particularly those leading down to watercourses
 - protecting your soils using best farming practices such as crop cover, vegetation and crop establishment techniques.
 - Carrying out sub-soiling in compacted areas or soil slitting in grassland and other soil amelioration techniques
5. **Review** your progress by checking soil conditions and by establishing simple practical steps and indicators to monitor improvements.

Practical examples

Erosion risk assessment

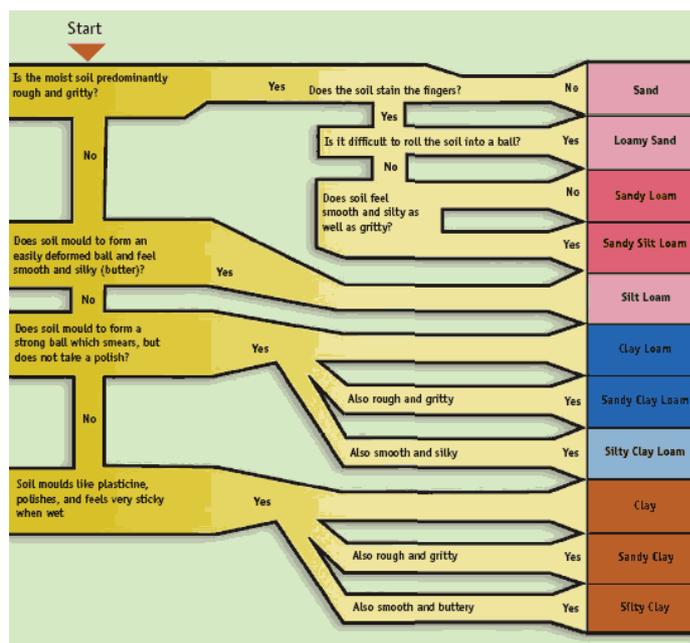
Use this table as a guide to the risk of soil erosion on your farm: Source DEFRA

SOIL TEXTURES	STEEP SLOPES >7°	MODERATE SLOPES 3-7°	GENTLE SLOPES 2-3°	LEVEL GROUND <2°
Sand	Very High	High	Moderate	Slight
Loamy sand				
Sandy loam				
Sandy silt loam				
Silt loam				
Silty clay loam	High	Moderate	Lower	Slight
Other mineral soils	Lower	Slight	Slight	Slight

- risks will be lower where average annual rainfall is less than 800mm
- risks will be higher on long, unbroken slopes and where slope patterns and local valley features channel flow.

Soil texture assessment

To work out the texture class of soils on your farm, moisten a dessert spoon of soil, knead it thoroughly between your finger and thumb, and follow the diagram below:



Remember

- Check the condition of your soils regularly to help save money and protect the environment.
- Aim to match land use to soil conditions to reduce soil erosion, improve soil structure and maintain a productive resource for the future.
- If soil erosion and run-off from your farm causes water pollution you could be liable to prosecution costs and fines under the Water Resources Act 1991.