

# Permaculture Research: Soil Test Record Sheet

Chris Warburton-Brown and Tom Kemeny

2015



With special thanks to the Sustainable Lush (Slush) Fund, for vital financial support.

This booklet should be used with the accompanying *Soil Tests Handbook* and *Soil Advice Booklet*, downloadable for free:

<https://www.permaculture.org.uk/research/soil-yield-and-biodiversity-tests-project>



The Permaculture Research: Soil Record Sheet.  
First published in 2015 by the Permaculture Association.  
Hollybush Conservation Centre, Broad Lane, Kirkstall, Leeds, LS5 3BP.  
Website: <https://www.permaculture.org.uk/>  
Telephone/Fax: + 44 (0)845 458 1805 (calls charged at local rate)  
E-mail: [research@permaculture.org.uk](mailto:research@permaculture.org.uk)  
E-mail: [research@permaculture.org.uk](mailto:research@permaculture.org.uk)

This document is copyrighted under a Creative Commons license, specifically a “Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported” licence. This means that we keep our copyright but allow other people to copy and distribute the work provided they give us credit. Commercial use of the work is not allowed, and no modifications can be made to it.  
For more information about the license see <http://creativecommons.org/about/licenses/>

The Permaculture Association's vision is an abundant world in which we care for the earth, each-other and future generations, whilst living within nature's limits. Our mission is to empower people to design thriving communities across Britain, and contribute to permaculture worldwide.

The Permaculture Association is a company (05908919) and a registered charity (1116699 and SC041695)

**Site details**

Name of site:

Name of person doing tests:

Location of soil test area within the site:

Current use of this area:

Other use/s of area in last five years:

**Preliminary tests**

**1) Anaerobic conditions and pollution**

**The smell test**

Sour, putrid or chemical smell		Do not proceed with tests
No smell		Proceed with tests
Earthy, sweet or fresh smell		Proceed with tests

**2) Waterlogging and dryness**

**The squeeze test**

Dry soil		Do not proceed with tests
Moist soil		Proceed with tests
Wet soil		Do not proceed with tests

**Main Soil tests**

**1. Drainage**

How long did it take, in minutes, for the water to completely drain away?

**2. Earthworms**

How many earthworms did you count?

*The more earthworms, the better. They indicate a high level of soil biology*

**3. Top soil depth**

How deep is your soil?

Very shallow (<15 cm)	
Shallow (15-30 cm)	
Moderately deep (30-60 cm)	
Deep (>60 cm)	

*The deeper your soil the better. It holds more water and supports deep roots.*

#### **4. Soil texture**

What texture is your soil?

#### **5. Soil structure**

##### **The visual inspection test**

Is your soil:

Soft	
Cloddy	
Platey	

Is there a pan in your soil? Yes/ no

*Soft soil is good. Pans are undesirable, blocking root and water penetration.*

##### **The slaking and dispersal test**

Record the state of slaking in the jar:

	After 2 hours	After 24 hours
None		
Partial		
Complete		

*The slower the soil breaks up, the better; this indicates a high degree of organic matter which holds the soil together.*

#### **6. Soil pH**

What is the pH of your soil?

*A pH between 6 and 7 is best for most plants to grow.*

#### **7. Soil compaction**

What is the bulk density score of your soil?

*In sandy soil, a bulk density score below 1.6 is desirable, higher than 1.8 is a problem.*

*In silty soil, a bulk density below 1.4 is desirable, higher than 1.6 is a problem.*

*In clay soil, a bulk density below 1.1 is desirable, higher than 1.5 is a problem.*