

# Impact on soil

Outdoor pig farming can degrade soil through compaction, nutrient overload, and loss of structure caused by trampling and manure deposition.

## Key concerns

**Soil Compaction:** Heavy trampling by pigs and machinery traffic compress soil, reducing pore space. This leads to poor aeration, restricted root growth, and reduced water infiltration.

**Loss of Soil Structure:** Disturbance breaks down aggregates, making soil more prone to erosion and increases risk of sediment runoff into watercourses.

**Nutrient Imbalance:** Manure deposition can overload soil with nutrients (e.g., nitrogen and phosphorus). This increases the risk of nutrient leaching into groundwater and runoff to surface water.

## Why It Matters

Soil compaction restricts root development and plant growth, which limits land productivity.

Loss of soil structure increases erosion, removing fertile topsoil and reducing long-term soil health.

Excess nutrients from manure can disrupt soil balance, which can compromise crop performance and increases the risk of water pollution.

## Direct risks of outdoor pig farming to soil health

- **Heavy trampling, wallowing and rooting** causes soil compaction
- **Repeated disturbance** breaks down soil structure
- **Nutrient hotspots** around huts and feeders can lead to nutrient imbalance
- **Bare ground and lack of vegetation** leave soil exposed to wind and water erosion, accelerating degradation.

Check out the guidance documents below to see which measures can improve soil quality.

## Actions

- Site selection
- On-farm infrastructure
- Diet
- Equipment and machinery
- Green cover and buffer strips
- Stocking rate and grazing management
- Soil health and structure
- Manure management

## Links to further information

Good soil management practice for outside pig keepers: [ahdb.org.uk/knowledge-library/good-soil-management-practice-for-outside-pig-keepers](http://ahdb.org.uk/knowledge-library/good-soil-management-practice-for-outside-pig-keepers)

Soil Management Plan: [ahdb.org.uk/knowledge-library/soil-management-plan](http://ahdb.org.uk/knowledge-library/soil-management-plan)

Think Soils – Soil assessment to avoid erosion and runoff, Environment Agency, 2008: [ahdb.org.uk/thinksoils](http://ahdb.org.uk/thinksoils)

Guide to Better Soil Structure, National Soil Research Institute (NSRI): [www.landis.org.uk/downloads/downloads/structure\\_brochure.pdf](http://www.landis.org.uk/downloads/downloads/structure_brochure.pdf)

The soil health scorecard: [ahdb.org.uk/knowledge-library/the-soil-health-scorecard](http://ahdb.org.uk/knowledge-library/the-soil-health-scorecard)

Protecting our water, soil and air, Defra, 2011: [www.gov.uk/government/publications/protecting-our-water-soil-and-air](http://www.gov.uk/government/publications/protecting-our-water-soil-and-air)

The Code of Good Agricultural Practice (COGAP) for the prevention of pollution of water, air and soil, DAERA, 2008: [www.daera-ni.gov.uk/publications/code-good-agricultural-practice-cogap](http://www.daera-ni.gov.uk/publications/code-good-agricultural-practice-cogap)