

Impact on soil

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

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

Soil Management Plan: ahdb.org.uk/knowledge-library/soil-management-plan

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

Guide to Better Soil Structure, National Soil Research Institute (NSRI): www.landis.org.uk/downloads/downloads/structure_brochure.pdf

The soil health scorecard: 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

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