Soil Association advice and support

Contact our Farming and Land Use Team
Scotland enquiries: 0131 370 8150
Speak to a farming advisor: 0117 314 5100
Email: producer.support@soilassociation.org

Find out more at www.soilassociation.org/our-work-in-scotland/

For more information on IPM and Reducing Inputs, see www.soilassociation.org/our-work-in-scotland/scotland-farming-programmes/current-scotland-programmes/reducing-inputs/

Do you know about Soil Association Exchange?

Developed to enable farmers to reap the rewards of sustainable farming that works with nature. Register today for updates and to have first access to a service that works with farmers to help evolve the way we farm for the better. **www.soilassociationexchange.com**

Further advice and information

Soil Association Saving our Soils Report www.soilassociation.org/media/24941/saving-our-soils-report-dec21.pdf

Advice for Farmers About Soil Health - www.Soilassociation.org/soilhealth

Visual Assessment of Soil Structure (VESS) www.sruc.ac.uk/media/xbrfn4x3/vess-colour-chart.pdf

Soil monitoring with SoilMentor https://soils.vidacycle.com/

FFBC Soils Booklet www.farmingforabetterclimate.org/wp-content/uploads/2018/02/Valuing_Your_Soils_PG.pdf

Soil Association Report: Fixing Nitrogen www.soilassociation.org/fixing-nitrogen

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Reducing Inputs

Supporting Soils

Soil health underpins our climate, our nature and our health; and healthy soils are critical to most, if not all our ecosystem services. As prices for synthetic inputs skyrocket and interest in organic, regenerative and agroecological approaches increases, more farmers than ever are looking to support soil health with fewer or zero chemical inputs.

This guide outlines seven key areas (based on Soil Association's Seven Ways to Save Our Soils) which combine to form a whole farm approach to building soil health, reducing reliance on external inputs, and providing opportunities to improve profit margins, reduce carbon footprints, improve ecological performance, protect natural capital, and increase farm resilience.

Know Your Soil

Measuring and monitoring soil health - through soil testing (for pH & key nutrients), assessing soil structure and organic matter content, and simple measures like worm counts - is key to improving health and fertility. The Scottish Government recently incentivised soil testing through its Preparing for Sustainable Farming scheme, to help farmers understand and lower carbon emissions.

Increase Soil Organic Matter (SOM)

Increasing the amount of plant and animal matter going back onto fields, whether from integrating livestock into arable rotations, establishing more diverse deep-rooting and herbal leys, applying farmyard manure (FYM) in a muck-for-straw agreement, or the use of green manures and cover crops, all build soil organic matter. It can be a slow process, but one which results in multiple benefits that extend far beyond the farm.

Reduce Tillage

Conventional tillage (ploughing) can have a negative impact on soil structure and beneficial microbial activity; and reduce earthworm abundance. There is increasing interest in and uptake of min-till and no-till practices; however, these largely still rely on herbicides, therefore support is needed for further research. An Innovative Farmers Field Lab is trialling a living mulch of clover under arable crops, to build fertility without livestock, tillage or synthetic inputs

Artificial fertilisers displace organic matter inputs that provide the food for soil life; and reduce beneficial microbes necessary for efficient nutrient cycling. Undertaking a 'farm-gate nutrient balance' of nitrogen and assessing the whole farm operation can help identify where reductions might be made, or alternative approaches deployed.

Keep Soil Covered

Plant roots hold soils together, reducing erosion and allowing air to penetrate in the spaces around them. Roots also encourage healthier soil communities through plant-fungal interactions. The benefits of continuous plant cover spread beyond the farm – with huge gains in terms of biodiversity, carbon storage, flood and drought control and water quality. Cover crops, green manures, and under-sown crops can provide the added benefit of improving soil fertility.

Reduce Compaction

Compaction can lead to increased surface run-off, drought stress, fewer grazing days, poor root growth and reduced overall yields. Issues can be caused by late harvesting, over cultivation, overgrazing and declining organic matter. Introducing cover crops or deep rooting grass species can help; as can adopting a Controlled Traffic Farming approach. Routine visual assessments can identify compaction issues and water infiltration tests can highlight areas of concern within a field.

Integrate More Trees into Farmland

Trees provide multiple benefits, and play a role in soil stabilisation, carbon sequestration and nutrient recycling. The right trees in the right place - as individual trees, hedges, agroforestry systems or farm woodland - can also improve water management, reduce flooding risk and enhance wider farming operations. Further benefits include providing habitats for birds, mammals and insects; sheltering crops and livestock from heat, cold and wind; and providing additional income from both wood and non-wood products.

Make Rotations More Diverse

Designing a longer, more diverse crop rotation can build soil health and fertility; and reduce costs for inputs including nitrogen fertiliser and pesticides. Using spring crops increases the opportunity to add cover crops and soil organic matter into the rotation; and growing crops with different rooting depths (e.g. intercropping) can take advantage of a soil's varying nutrient profile. Integrating livestock grazing into an arable rotation (or exchanging muck-for-straw) are also effective ways to increase SOM.