



Funded by
the European Union



trans4num in the United Kingdom

Recycling nutrients, restoring soils: the UK's pathway to climate-smart farming



<https://trans4num.eu/en/>

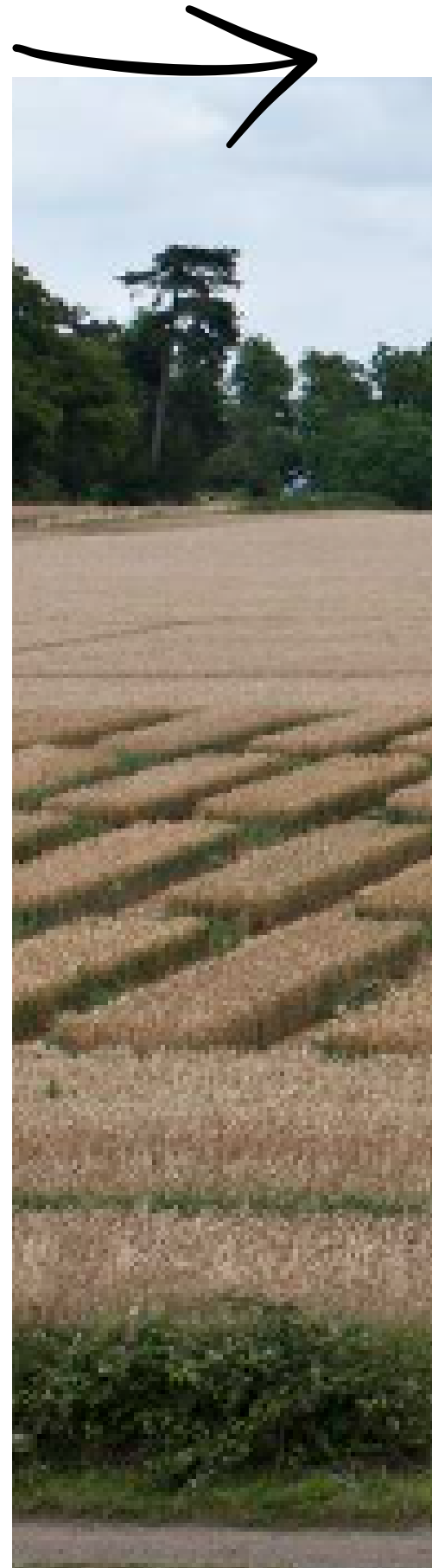
1. THE CHALLENGE

UK arable farming faces mounting pressure from climate change, rising input costs, and soil degradation.



Dependence on synthetic fertilisers and pesticides threatens both economic resilience and environmental sustainability.

There is an urgent need for solutions that maintain productivity while rebuilding soil health and reducing greenhouse gas emissions.





2. WHAT ARE WE TESTING?

At Rothamsted Research, trans4num is using two major field platforms to explore nutrient-smart farming:

- The Large-Scale Rotation Experiment (LSRE) tests combinations of compost, crop diversification, reduced tillage, and smart crop protection.
- The North Wyke site evaluates a novel phosphorus fertiliser (“Thallo”) made from recycled abattoir by-products, comparing it to standard mineral fertilisers.
- Together, they assess how NBS practices can enhance soil carbon, nutrient efficiency, and farm resilience.

3. YEAR 2 INSIGHTS

- Compost application improves soil structure and carbon storage, while supporting beneficial soil biodiversity.
- Early trials show that recycled phosphorus fertilisers can perform comparably to conventional P sources, offering a sustainable alternative.
- Farmer engagement is expanding through “Research Insight” days and workshops, which connect experimental data with real-world practice.
- The team is integrating modelling tools to explore how NBS can work across regions and cropping systems.





4. WHAT IS NEXT?

- Continue multi-season monitoring of compost, rotation, and fertiliser treatments.
- Adapt the Decision Support Tool (DST) to the UK's arable context in collaboration with FiBL and Aarhus University.
- Produce policy briefs highlighting how compost and waste-derived fertilisers can support net-zero agriculture goals.
- Strengthen dialogue with advisory networks to promote knowledge transfer to farmers.

5. WHY IT MATTERS?

The UK site bridges 150 years of agricultural research with 21st-century sustainability challenges.

By linking long-term experiments with new nutrient recycling technologies, Rothamsted and North Wyke are showing how waste can become a resource, turning circular economy principles into tangible farming solutions for a climate-smart future.



Follow



@trans4num



READ MORE



@trans4num



Funded by
the European Union

