RHIZOCORE TECHNOLOGIES

UKRI Biotechnology and Biological Sciences Research Council

ROSLIN INNOVATION CENTRE

Nature-based solutions for poultry waste management and natural water filtration

Rhizocore Technologies

Rhizocore Technologies is a biotechnology company based at the Roslin Innovation Centre, focused on developing scalable, fungi-based solutions to restore ecosystems and advance sustainable land use. Their locally adapted mycorrhizal fungi pellets improve tree growth, and carbon sequestration by reintroducing critical underground fungal networks.

In parallel, Rhizocore is pioneering fungal biotechnologies for nutrient recovery, mitigating water pollution through myco-remediation. Driven by a circular bioeconomy mission, the company integrates cutting-edge science and environmental stewardship to enable regenerative forestry, sustainable agriculture, and resilient rural landscapes.

The poultry industry generates large volumes of spent chicken litter and nutrient-rich wastewater that can cause environmental harm if unmanaged. Spent litter contains valuable nutrients but is mixed with undigested lignocellulosic material (wood and straw), poultry manure and dust, reducing its fertiliser effectiveness. Meanwhile, excess nitrogen, phosphorus, and microbial waste can escape from farms into nearby watercourses, contributing to pollution, eutrophication, and regulatory pressure on producers.

The challenge is to develop biological or natural solutions that both **enhance the agronomic value of chicken litter** and **prevent nutrient pollution** in the surrounding watercourse.

A promising approach is to explore whether fungi screening can be used to break down litter to improve nutrient availability and to filter or metabolise pollutants in farm runoff

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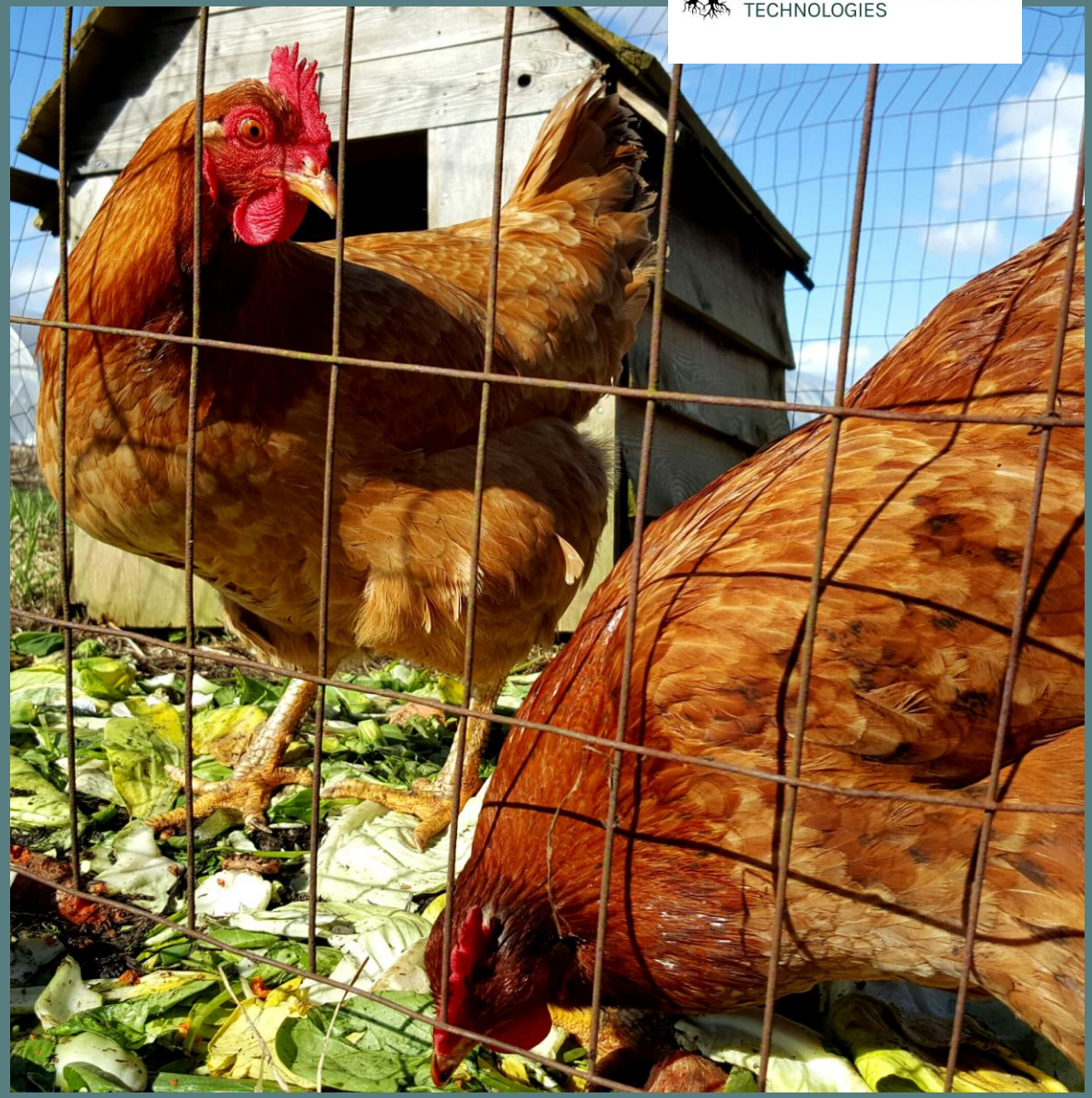

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The Campus Innovation Award enabled a proof-of-concept project to assess the potential of saprotrophic fungal digestion being utilised to improve the value and efficacy of spent poultry litter as an agricultural fertiliser, by increasing nutrient availability. Another component of the project was to design, produce and install a 'fungal-filter' in a stream on a local poultry farm. Paired upstream and downstream water samples were collected over several weeks and analysed for pH, nitrate and phosphate to assess its impact on water quality.

The project generated a valuable pilot dataset, identifying several significant nutrient shifts that suggest improved fertiliser potential following fungal digestion. In parallel, the pilot fungal filter showed early signs of reduced phosphate concentrations and stabilising local water chemistry.

Overall, the award enabled the exploration of emerging nutrient-recovery and bio-remediation biotechnology with promising relevance for the poultry industry. This represents a new market that complements their core forestry focus on locally-adapted mycorrhizal inoculants supporting tree health, survival, and carbon sequestration.

One year on…

The project generated essential proof-of-concept data that helped secure a £1 million follow-on project "Fungal Filters for Agricultural Run-off" funded through DEFRA Farming Innovation Programme with Innovate UK. This subsequent project scales the technology, extends field trials, and further demonstrates the commercial potential of fungal filtration systems, with Rhizocore leading the consortium.

The grant also supported the recruitment of three additional staff and produced further data that was incorporated into the company's pitch deck for investment rounds.

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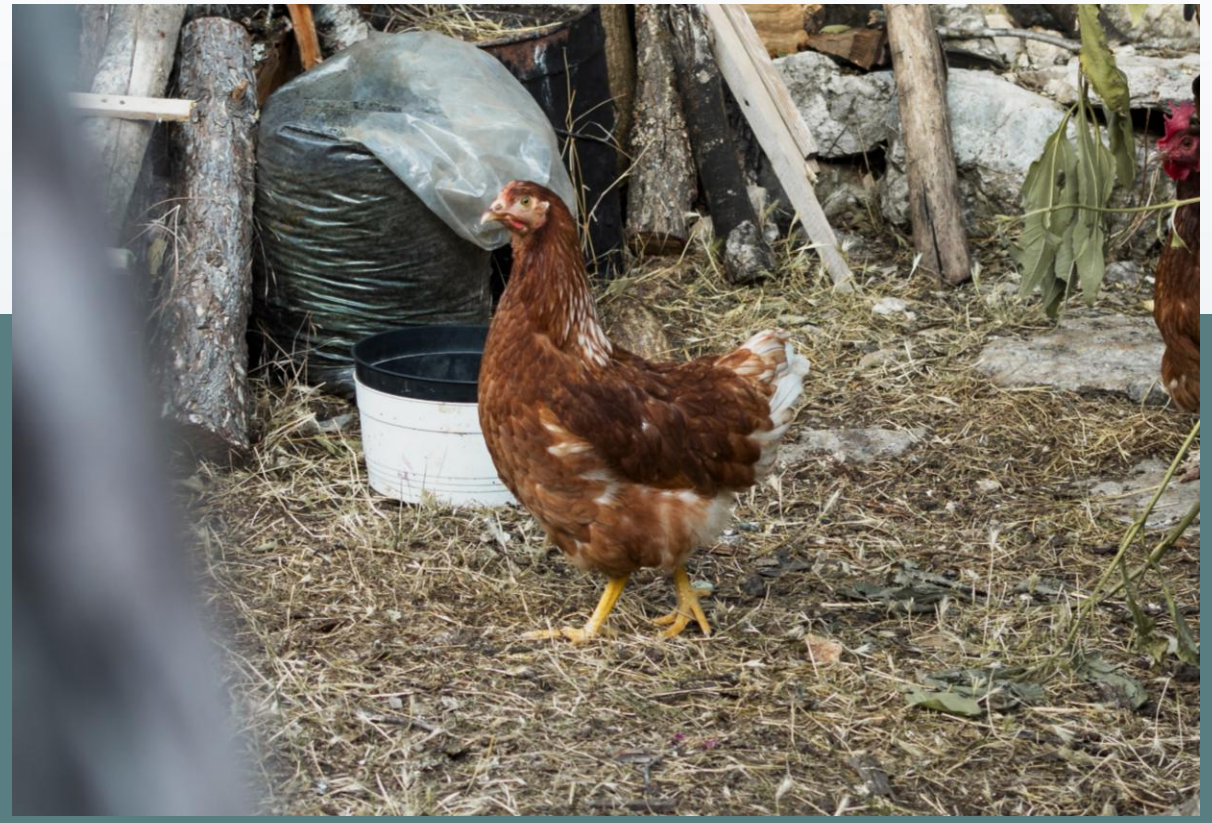

"This funding helped us accelerate one of our R&D workstreams, leading to a follow-on grant and development of a new product line."

Dr. Toby Parkes, CEO & Co-founder of Rhizocore Technologies