

THE IMPACT OF PROLONGED RAINFALL ON SOIL STRUCTURE

The Sustainability Trial in Arable Rotations (STAR) project is a long-term large-scale ongoing rotational experiment, managed by NIAB. It has been exploring ways of improving the sustainability, stability and output of conventional arable farming systems on a clay loam (heavy soil) at Otley, in Suffolk, for over 15 years.

The impact of the abnormally wet 2023/24 season has affected the soil structure in the cultivation zone, particularly in the surface layers where capping has occurred.

Soil structure was improved with rotation; herbal ley compared to continuous wheat ($P = <0.05$). There was no significant affect between cultivation approaches on soil structure.

Rotational diversity can help to build resilience in an increasingly unreliable climate.

Weather data from September 2023 to March 2024 near the STAR trial site in Suffolk

Month	Rainfall (mm)	Volumetric water content at 25 cm (%)
September	75.4	37.1
October	167.6	40.4
November	69.2	42.1
December	81.4	42.4
January	65.6	42.5
February	98.1	42.7
March	39.5	42.5

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Visual Evaluation of Soil Structure (VESS) scores

Rotation with → Primary cultivation	Continuous wheat	Herbal ley
Plough	3.2	2.6
Deep	3.1	2.8
Shallow	3.2	3.0

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