

Project overview

The NFS use of soil amendments study examines the use of green compost in three rotation approaches, based ostensibly around winter wheat and spring sown break crops, with or without the use of a brassica cover crop ahead of the spring cropping, and a third approach based on continuous wheat.

The experiment is a factorial design, with four replicates, that received annual additions of green compost (ca. 35 t/ha) over a four year period between 2007/08 and 2010/11. Recent findings have demonstrated greater water infiltration rates and soil nutrient/organic matter levels associated with the use of compost and yield improvements from specific approaches. For example, in the continuous wheat rotation the compost treatment has resulted in average yield responses over the project of around 7% compared to the non-compost treatment.

A further replicated study in the NFS programme, started in 2011, is comparing the use of green compost with manure (turkey muck) and paper crumble use and evaluating these materials against the use of 'bagged nutrients' and 'untreated' plots.



New Farming Systems

Further information

For further information on the New Farming Systems Project please go to the NIAB website (www.niab.com) or email info@niab.com.

The New Farming Systems Project

is managed by NIAB TAG in conjunction with an independent advisory group and supported by The Morley Agricultural Foundation and The JC Mann Trust. The NFS project also contributes to a range of other research programmes.



NEW FARMING SYSTEMS

The use of soil amendments

The New Farming Systems (NFS) project is a series of experiments and system demonstrations. The project aims to explore ways of improving the sustainability, stability and output of conventional arable farming systems. The research is being undertaken on a sandy loam soil at Morley in Norfolk.



New Farming Systems

Use of soil amendments

This study is comprised of three rotational systems with and without the annual application of 35 t/ha of green compost, applied between 2008 and 2011. It uses a shallow non-inversion establishment with the specific method varying according to season and crop but typically targeting 15 cm depth using disc and/or tine based approaches.

The study is being undertaken on large plots (6 m x 12 m) and employs a fully replicated factorial design. Further detail of the treatments and the design is presented in the following table; in total the experiment has six treatments.

Treatment and rotational progression details

Cropping											
Rotation	Compost use	2008 (Year 1)	2009 (Year 2)	2010 (Year 3)	2011 (Year 4)	2012 (Year 5)	2013 (Year 6)	2014 (Year 7)	2015 (Year 8)	2016 (Year 9)	2017 (Year 10)
Spring breaks	X	wwt	sosr	wwt	sbns	wwt	sbly	wosr	wwt	soat	wwt
Spring breaks and brassica cover crop	X	wwt	sosr	wwt	sbns	wwt	sbly	wosr	wwt	soat	wwt
Continuous wheat	X	wwt	wwt	wwt	wwt	wwt	swt	wwt	wwt	swt	wwt
Spring breaks	✓	wwt	sosr	wwt	sbns	wwt	sbly	wosr	wwt	soat	wwt
Spring breaks and brassica cover crop	✓	wwt	sosr	wwt	sbns	wwt	sbly	wosr	wwt	soat	wwt
Continuous wheat	✓	wwt	wwt	wwt	wwt	wwt	swt	wwt	wwt	swt	wwt

Cropping key: wwt (winter wheat), swt (spring wheat), sosr (spring oilseed rape), sbly (spring barley), wbns (winter beans), sbns (spring beans), wosr (winter oilseed rape), soat (spring oat)

