

Trials delivery at Morley

THE
MORLEY
AGRICULTURAL FOUNDATION



East Anglia, the bread-basket of England, is a well-deserved moniker. Probably more than any other UK region, it has embraced larger scale food and farming production and the widespread take-up of technology and new farming methods. And it is renowned for its strong agri-tech research base; the corridor stretching from Cambridge to Norwich incorporates most of the UK's leading agricultural science organisations. So, it is an ideal location for NIAB's East Region Trials team, continuing over a century of on-farm research work that began with the Norfolk Agricultural Station, through to the Morley Research Station and more recently The Arable Group which became part of NIAB in 2009. Regional manager Hannah Parish and centre manager Rebecca Owles explain.

The team, based at The Morley Agricultural Foundation's (TMAF) headquarters at Morley Farms near Attleborough, is responsible for an extensive range of crop trials across a wide geographical area – from the north Norfolk coast, across Suffolk and down into Essex. With over 8,500 crop plots, including 2,000 at Morley Farms, the centre is also home to NIAB's Farming Systems research team who specialise in soils and longer-term rotational research.

The trials programme includes combinable crops, roots and forage species for statutory testing, levy funders, NIAB TAG membership and many commercial and charitable customers/partners. Overall, research themes include crop inputs, crop nutrition, pest impact and management, variety evaluation, wider agronomy interaction studies and novel systems. While the team works closely with colleagues at Cambridge for access to specialist equipment, transport and resources the centre has its own tractor (JD 5820) with RTK

GPS, a bespoke disc drill for plot establishment, a new 12 m tractor mounted sprayer and a plot combine.

The average farm rotation uses a range of crops and cultivation approaches, so it is important that research considers the rotation as a whole and the interaction of the individual elements. As our landlord and host farmer, alongside a valued shared history, TMAF is a key funder of NIAB's wide range of long-term farming systems research projects, along with the other funders JC Mann Trust and the Felix Cobbold Trust. Research programmes include:

- New Farming Systems – a series of long-term studies seeking to develop bio-sustainable cropping systems for conventional arable cropping
- STAR – a fully replicated field-scale study examining the interaction between four cultivation methods and four rotations
- Morley Long Term Trials (LOTS) – a continuation of the original National Agronomy Centre and MENTOR work, covering many of the long-term strategic field trials, including the Saxmundham Experimental site (est.

1899) and long-term wheat, barley and sugar beet fungicide response trials

- In 2018, TMAF set up the Morley Soil and Agronomic Monitoring Study (Morley SAMS), delivered through NIAB. A network of 30 monitoring sites across the farm have been identified using ten years of yield maps. A comprehensive set of soil and crop specific agronomic measures aim to link soil health and its impacts on yield, profitability and resilience at Morley.

Within these projects NIAB's work at Morley, and sites across Suffolk and Norfolk, includes amendment use, cover crops, crop rotations, cultivations, long-term nutrient management, soil biology and structure, and trafficking. In addition to our main programme of sow, grow, assess and harvest trials, much of the work done in conjunction with the Farming Systems team requires more complex and often very labour-intensive assessments.

However, one labour saving device, for the farming systems work, that has pride of place at Morley is the Wintex 3000 soil corer mounted on a converted Suzuki Jimny. This takes thousands more



soil cores than we can manage manually – extracting and splitting cores at three predetermined depths in under 30 seconds. The two-seater Suzuki is fully road legal, removing the need to unload and load the rig onto a trailer. It is also fitted with all terrain tyres, providing a small footprint on a cultivated and winter drilled fields. In its first season it took over 1,000 0-90 cm scores, equating to 3,000 cores by hand.

Recent years have seen an increase in NIAB's winter oilseed rape work in Norfolk as we tried to relocate trials away from the cabbage stem flea beetle hotspots around Cambridge. However, it would appear the A11 corridor has become a flea beetle superhighway and, in combination with this season's early autumn drought and resulting crop failures, several of our host farmers are removing OSR from their rotation.

The rain came too late for the OSR but a bit too soon for the wheat drilling and a difficult autumn became an even more frustrating winter. The team worked hard and didn't miss a single opportunity, ensuring our autumn trials programme was established before Christmas. But then it was a depressingly similar story in the spring, too wet, too wet, too dry! The much-needed rain may have arrived just in time for the sugar beet and forage maize crops which were struggling in an unseasonably warm and dry April. With spring drilling behind us we are now into the hectic phase of treatment applications and assessments on our trials as they romp through the growth stages and our data gathering picks up pace.

Of course, none of this compares to the challenges we are all facing through the Covid-19 situation this year. Fortunately, the Morley team, as with all the NIAB trials teams, has found ways to ensure we can continue to deliver our trials programmes and support the most up to date, in-season agronomy in safe, socially distanced ways. Often this means jobs take longer to do and the logistics are more complicated, but we are as confident in the delivery of our trials information this year as any other.

One of the highlights of the year is our field demonstration at the Morley Innovation Day in June. Our staff are on



hand to meet over 200 farming visitors who come to hear the latest information on varieties and agronomy and find out more about our ongoing research programmes. One of the best things about working in agricultural research is that every year is different and brings its own new challenges. Although the event's cancellation this year is disappointing, the trials teams are working hard to ensure the science continues. All the data will be available, and we will be involved in NIAB's virtual activities, bringing the technical content from these events and trials to you in the comfort of your own home, office or tractor cab!



Suzuki Jimny with soil corer



NIAB East Region trials team

- Rebecca Owles – Centre Manager
- Will Watling – Trials Agronomist
- Chris Whyles – Trials Manager
- Hannah Parish – East Regional Manager
- Andrew Watson – East Regional Agronomist

NIAB Farming Systems team

- Dr Nathan Morris – Farming Systems and Soils Specialist
- David Clarke – Soils and Farming Systems Technician
- Stephen Walker – Trials Officer
- Dan Hewitt – Weed Research Assistant
- Julie Phillips – Office Administrator