



# 2019 MEMBERSHIP REVIEW

## 100 YEARS OF PLANT SCIENCE

We marked NIAB's centenary at many events throughout the year – highlighting the long history of NIAB and its close links with farmers and farming. It was great to see so many NIAB TAG members and partners at these shows and open days.

We were honoured to welcome Her Majesty The Queen to NIAB Park Farm in Cambridge in July as part of our celebrations. She had previously visited NIAB as our Patron in 1969 and 1994. The Queen viewed exhibits of variety evaluation in ornamentals and cereals, as part of the delivery of Plant Breeders' Rights legislation, research work on monocot grafting and cowpeas, a showcase of 'superwheat' plants in the glasshouse, and a colourful visual display of NIAB's history. She also spoke with some of NIAB's longest serving members of staff, each with between 40 and 50 years' service, before planting a tree which garnered a great deal of media coverage.

Our establishment in 1919 had a major impact on the industry – never before had agricultural scientists come together under one roof. Many of the major impacts that NIAB has had over the last 100 years are now taken for granted. For example, NIAB played a major role in the establishment of seed testing and seed certification around the world, with the Official Seed Testing Station becoming part of NIAB in 1921. NIAB developed and introduced the concept of 'Recommended Lists', the first wheat RL was published in 1944, and we continue to be the main source of advice on variety selection. NIAB has also supported the science of modern plant breeding since its creation and is now a global leader in crop genetics research and plant breeding.

We remain a unique, independent, science-based organisation ensuring that findings are transferred effectively onto farm. Science continues to be at the core of all of our work, ensuring that all recommendations and strategies are always science-based.

We welcome feedback, ideas and suggestions on all membership issues via the membership office ([mary.mcphee@niab.com](mailto:mary.mcphee@niab.com) or 01223 342495), directly with your Regional Agronomist or through your local technical committee representatives (contact details available via the membership office).

We are looking forward to a busy season ahead and we thank you for your continued support.

Best wishes,

**Bill Clark**

Technical Director

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## THIS YEAR'S HIGHLIGHTS

### Her Majesty The Queen

NIAB celebrated 100 years of plant science and a visit by HM The Queen

### Summer success

A packed and our busiest ever summer open day schedule

### New staff

Increased regional agronomy team to support membership

### Focus on new challenges

More research on adapting crop agronomy and increasing resilience to changing climate

### Future planning

Advice on CTL loss and new fungicide chemistry

### Pests and diseases

Improving information and finding solutions to increased flea beetle, yellow rust and septoria pressures



## Your membership service in 2019

The close relationship between NIAB TAG and its membership keeps our research relevant and services up-to-date and offering good value for money. NIAB continues to invest in new technology, new approaches and new thinking, delivering technical advantages to farming businesses all over the UK. Here we summarise how NIAB TAG has translated this research into practical information and advice during 2019 for the benefit of our members who sit at the heart of our industry and research network.

### Disease pressure

2019 was yet another unusual disease pressure year and we ensured members were kept informed of the latest advice and information. Active yellow rust was found in many wheat crops from January onwards. The disease continued throughout the year, with moderate/high levels on some previously resistant varieties and many only showing their 'adult plant' resistance very late in the season. NIAB continues to monitor yellow rust races via the UK Cereal Pathogen Virulence Survey (UKCPVS), looking for new or emerging races of the pathogen.

A late attack of septoria initiated by heavy rainfall in early June caught many by surprise with severe symptoms showing in early July. This was partly due to triazole-resistance issues, meaning that ear sprays (of triazoles) gave little or no control of septoria on the flag leaves, along with a loss of activity from the SDHI fungicides used at the flag-leaf stage

### Membership events

With record attendance at all of our members' and open events, we were lucky with the weather at all but the very wet national Cereals Event and our own Black-grass Open Day in Cambridge. There was lots to talk about, from new varieties and soils and rotation advice to plots showing the activity of new fungicides coming next year. The loss of chlorothalonil in 2020 was high on the list of concerns, with septoria and ramularia control in people's minds. The new fungicide chemistry looks very exciting, with older products fading rapidly.

### Black-grass research

In NIAB TAG trials, applying some pre-emergence herbicides in a water volume of 100 l/ha has been shown to be at least as effective as 200 l/ha. Occasionally higher water volumes were shown to be more successful but this was not a consistent. Our advice highlighted that water volume must to be considered alongside the time taken to spray all of the crop area required. Any extra control benefits from higher water volumes can be lost if spray timing is delayed or missed in the autumn.

### Cabbage stem flea beetle

Growers, particularly in the east, are facing a worsening problem, leading them down the road of considering dropping oilseed rape from the rotation. NIAB TAG research on alternative strategies such as cover crops, companion crops and mowing is ongoing. There are no easy solutions.



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members.niab.com/  
(for new members only)

## Loss of CTL

The loss of chlorothalonil in 2020 will undoubtedly weaken our armoury of fungicides. NIAB TAG membership trials have clearly shown the activity of alternative multi-sites in septoria control programmes, but at some significant cost. New fungicides in 2020, and future years, may not benefit from the addition of other multi-sites and multiple tank-mix options may be the answer. On a positive note some new SDHI fungicides look very promising for ramularia control and these will be tested further in 2020.

## New appointments

Syed Shah joined the regional agronomy team in early 2019, based in the south alongside Steve Cook and Poppy de Pass. His appointment brings the national team up to eight, allowing us to give an even greater focus to membership, providing a better service and more events to current and new members. This summer we also welcomed Kate Waite as our new contract trials co-ordinator, based in Cambridge and liaising with our trade members and customers.

*Left: NIAB TAG regional agronomy team; Patrick Stephenson (north), Emily Borton (south-west), Richard Overthrow (west), Steve Cook (south), Syed Shah (south), Andrew Watson (east), Poppy de Pass (south) and Keith Truett (south-east)*

## Agronomy Strategy

This summer we received some very positive and public feedback from members across social media platforms on the publication of the new season Agronomy Strategy Guides, this year each with their own new colour scheme. The four Strategy Guides are the most popular and well-read NIAB TAG Membership publications and it is good to hear we are getting it right.

## Climate and weather

2019 gave us some of the highest summer temperatures ever recorded, with Cambridge claiming the highest July temperature of 38.7°C. Such high summer temperatures appear to be becoming the norm – something we will have to learn to adapt to. The weather also led to one of the most severe brown rust epidemics ever seen. NIAB variety/fungicide interaction experiments have become increasingly important in helping to select varieties that are resilient in extreme as well as 'normal' seasons. This includes selecting varieties with drought tolerance, high nitrogen use efficiency and good disease resistance.



# PLANT SCIENCE INTO PRACTICE

The NIAB Group, which incorporates NIAB, NIAB TAG, NIAB CUF and NIAB EMR, is a leader in crop science research, services and technical advice. NIAB continues to build on its key translational platforms and, through a strategic programme of investment in people, facilities and partnerships, unlock the transformative potential of a rapidly advancing knowledge base in agricultural science. Highlights this year include:

## New buildings at Cambridge

It was the end of an era when NIAB's Huntingdon Road site was sold in late 2018. A new campus, accessed from Lawrence Weaver Road, is being built on the former site of the Old Granary and John Bingham Laboratory, and is on schedule to open in early 2020. The redevelopment and expansion of NIAB Park Farm in Cambridge finished this summer. The two new 'barns' provide new research laboratories and offices, seed processing facilities and analytical services laboratories for some teams, including OSTs, relocating from the Huntingdon Road site.

## New strawberries launched in 2019

The NIAB EMR breeding programme goes from strength to strength with the launch of two new strawberry varieties – Malling Allure and Malling Champion – at the Fruit Focus event in July. These are the first new varieties from the East Malling Strawberry Breeding Consortium (EMSBC) since the release of Malling Centenary in 2013 – a June-bearing variety which is now selling over 60 million plants annually.

## NIAB Centenary Cereals Cup

A one-off centenary special NIAB Cereals Cup was awarded to the winter wheat variety Robigus – named as the most influential UK wheat variety from the past 100 years. Varieties were assessed in terms of agronomic value, market influence and lasting impact, most notably in their use in plant breeding programmes. NIAB's new open access, wheat pedigree resource provided invaluable information on heritage and breeding programmes, demonstrating that over half of all wheat varieties on the UK Recommended List since 2014 had Robigus in their parentage.

## International work

NIAB staff are actively involved in many overseas projects in India, South America and Africa. Projects include nitrogen optimisation and introducing new genetic diversity into rice breeding programmes. The Cambridge-India Network in Translational Nitrogen (CINTRIN) is a collaborative virtual centre between the UK and India aiming to provide solutions to cereal crop N use via the translation of basic research into application on farm. We are also addressing some of the challenges emerging from climate change to rice production in Vietnam, e.g. salt tolerance, diseases resistance and drought resilience.

## Ergot in cereals

The European Commission Contaminant Working Group is proposing to impose a threshold of total ergot alkaloids in processed grain, including milling products. NIAB research is helping to understand how ergot alkaloids arise in grain samples. The research, funded by AHDB, has shown that ergot alkaloids can transfer within the ear of infected plants and to grain from ergots in a sample. It is now clear that a significant risk of transfer of ergot alkaloids to clean cereal grain exists within the cereal production chain, both at the stage of crop production and during transportation of harvested grain.

## NIAB TAG Centres

The delivery of successful field trials, including membership trials, is one of the most crucial elements of NIAB's operations. It is achieved by dedicated teams located at ten field trial centres in the major agricultural areas of England and Wales, combining experience with local knowledge to manage a wide range of crops. And for 2020 our Cirencester trials site officially becomes a regional trials centre led by Poppy de Pass.

The main contacts at each site are:

<b>Cambridge</b> 01223 342200 Hannah Parish and Sue Mann	<b>Herefordshire</b> (Callow) 01432 354779 Mike Perry
<b>Norfolk</b> (Morley) 01953 713200 Rebecca Owles	<b>Shropshire</b> (Telford) 07725 544331 Cathy Johnson
<b>Kent</b> (East Malling) 01732 843833 Alin Borleanu	<b>Yorkshire</b> (Headley Hall) 01937 832798 Jake Wild
<b>Hampshire</b> (Sutton Scotney) 01962 761166 Lauren Edwards	<b>Lincolnshire</b> (Benniworth) 01507 313960 Hayley Rhodes
<b>Gloucestershire</b> (Cirencester) 07900 166784 Poppy de Pass	<b>Lincolnshire</b> (Kirtton) 01205 724472 Shaun Coleman
<b>Devon</b> (Newton Abbot) 01626 833399 Mark Wavish	

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