Niab

Landmark

Issue 61 • Summer 2026

Join the Niab team at Cereals, Groundswell and Open Days this summer

David Clarke and Aoife O'Driscoll check Niab's Cereals Event plots at Diddly Squat Farm

In this Issue

Niab

Events 2026

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Wednesday 10 & Thursday 11 June
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Groundswell
Wednesday 1 & Thursday 2 July
HERTFORDSHIRE

Fruit Focus
Wednesday 8 July
KENT

NIAB SUMMER EVENTS

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Niab
Plant Science into Practice

Mario Caccamo, Chief Executive, Niab • mario.caccamo@niab.com

A decade of change: closing a personal chapter at Niab

After a remarkable ten years, including almost five as CEO, I will be leaving Niab later this summer to pursue an exciting new opportunity with an organisation overseas. Leading Niab through a significant period of positive transformation has been both a privilege and deeply rewarding.

This period has also been one of profound change for UK farming. The impacts of climate change, with warmer, drier summers and wetter winters, have been accompanied by equally unpredictable changes in farming policy. Alongside these challenges, we were also required to respond to the COVID 19 crisis, which tested our resilience; at Niab, however, we demonstrated our capacity to deliver at times when the country needed it most.

In June 2016, just a few months after I joined Niab, the UK voted to leave the EU in a once in a generation referendum. Earlier that same year, Niab had completed the rescue of East Malling Research (EMR) from administration, without public sector support. This intervention protected an essential national asset for the horticulture sector: capability that would otherwise have been lost.

In 2017, I moved to East Malling to take on the role of Managing Director, with a clear mandate to expand Niab's portfolio for the benefit of UK horticulture. Working closely with the East Malling Trust and stakeholders in Kent, we focused on modernising the research station to reverse more than 30 years of under-investment. This effort culminated in the successful award of a Strength in Places Fund grant to create Growing Kent & Medway. In partnership with the East Malling Trust, we built new plant growth rooms and glasshouses to ensure Niab could support the horticulture sector with state of the art facilities.

During this time, we also oversaw the growth of the strawberry breeding programme, driven by the global success of *Malling™ Centenary*. Two years ago, we sold this programme to Bayer. This transaction not only recognised the exceptional quality of Niab's capabilities but also enabled future growth beyond the UK. Importantly, it secured inward investment, reinforcing East Malling's position as a global centre for horticultural innovation.

Since becoming Niab's CEO in 2021, we have built on the foundations established by my predecessors to strengthen the vital translational space between discovery and delivery. With this focus, we are unlocking a unique opportunity for the UK to lead the adoption of technologies that address some of the grand challenges of our time. Niab sits at the very heart of this translational space, driving real world impact from innovation.

One powerful example of this commitment has been Niab's leadership

Niab Chief Executive Professor Mario Caccamo originally joined Niab as the Head of Crop Bioinformatics in 2015, became NIAB EMR's Managing Director in 2017 and was appointed Chief Executive in 2021. A computer scientist by training, Mario has over 25 years' experience in life science research and big data, including specific projects to apply the latest DNA sequencing technologies and bioinformatics methods to advance scientific understanding of crop genetics and the interaction of agricultural crops with their environment. He is currently a Director of the Oxford Farming Conference.

in championing the implementation of new legislation for precision breeding. The evidence is clear: proportionate, enabling regulation unlocks innovation, accelerates the adoption of transformative technologies, and attracts long-term investment. This was a critical step forward, and now we must build on it with greater ambition and at pace.

Over the past decade, Niab has demonstrated its value to UK agriculture and horticulture by anticipating and responding decisively to emerging threats. Our team at East Malling was the first to identify and report the presence of spotted wing drosophila (SWD) on UK soft fruit crops. This early warning proved critical. We pioneered an integrated response, combining cutting edge research, national monitoring networks, and emergency use insecticides to confront this novel pest. While effective management strategies have so far safeguarded the sector, continued research is essential to secure long term resilience.

More recently, Niab was first to detect, through our northern field trials team, a breakdown in the protection conferred to wheat varieties by a yellow rust resistance gene (*Yr15*). This marked the first recorded failure of *Yr15* and represents one of the most significant losses of genetic resistance facing the sector. Reliance on single, high value resistance genes carries systemic risk. We are now working with colleagues at the John Innes Centre to understand the molecular basis of this change and to support the development of more durable resistance strategies.

We have also been key players in supporting the adoption of more sustainable approaches to farming. Regenerative farming has emerged as a defining movement in UK agriculture and horticulture. For Niab, this is neither a fleeting buzzword nor wishful thinking, but a necessary evolution in how we farm. We believe that regenerative agriculture must be grounded in rigorous, evidence based science, embracing innovation, large scale data, and biotechnology, while restoring soil health and environmental resilience. Done properly, it allows profitable, high yielding crop production to go hand in hand with a reduction in agriculture's environmental footprint.

In this context, I would like to highlight our soil health studies in the East of

England, delivered with the support of the Morley Agriculture Foundation (TMAF). This work is only possible through long term funding, something that is all too rare, but where TMAF's approach has been exemplary, allowing research to extend beyond conventional five year horizons.

Niab's role in the translational space is to bring coherence to the innovation system: de risking adoption, accelerating progress from research to field, and empowering farmers and growers to build more resilient and competitive businesses. In doing so, we complement the discovery science delivered by universities and research organisations.

The Crop Science Centre, our alliance with the University of Cambridge and launched in October 2020, exemplifies the strength of this innovation pipeline. At the time, we were still in the midst of the COVID 19 pandemic, yet Niab continued to deliver critical support to farming, which is essential to safeguarding the UK's food security. During this period, Niab's crop characterisation team maintained a strong focus on supporting breeders, enabling them to continue making progress in the development of new varieties despite the challenging circumstances.

As this is my final *Landmark* column, I would like to express my sincere gratitude to Niab staff, current and former Board members, and our sponsors for their dedication, professionalism, and support over the past decade. Above all, I want to recognise the farmers and growers who work with Niab through our Membership programme. Our close relationship with them defines who we are and underpins the strength and resilience of the organisation. I would also like to thank the Council for Awards of Royal Agricultural Societies for the recent Associateship (ARAgS) award; I am truly honoured and humbled by this recognition.

When I took on the CEO role in 2021, I set out to cement Niab's position as the 'go to' organisation for agricultural and horticultural innovation. Together, we have made substantial progress towards that ambition. I am immensely proud of what we have built, and confident that Niab will continue advancing its mission to put plant science into practice.

Niab launches Strategic Programmes to future-proof UK farming

Farmers are dealing with extreme weather, the shift to more sustainable practices such as regenerative agriculture, and the need to help maintain biodiversity. Key challenges include navigating policy changes (such as potential tax changes, ELM schemes and other support initiatives), labour shortages, ensuring financial viability, and adapting to new technology.

These pressures are not isolated; they are also forcing organisations and businesses throughout the industry to rethink how they operate. At Niab, this has meant adapting in step with the sector. We are in the process of evolving our structures, investing in people and infrastructure, and changing how we work to remain relevant, resilient, and able to support farmers through this period of transition.

Since Niab was founded in 1919, the organisation has provided a unique place where agricultural scientists have come together with a focus on promoting the improvement of crop varieties in the UK, supporting the development of new husbandry methods, and advancing the nature and merits of treatments, inventions, improvements and processes that may benefit the industry.

Over the past year Niab, its staff, customers, stakeholders and industry, have come together to reflect on the challenges facing UK farmers and growers and develop a new Niab framework with four Strategic Programmes. These have been designed to deliver the practical tools, trusted evidence, and crop innovation UK farmers need to stay productive, profitable, and resilient in the years ahead.

At the heart of our vision of driving change through research and innovation, Niab continues to build on a long history of improving agricultural and horticultural crop production, by bringing together the specialist knowledge, skills and facilities required to understand the performance and quality of crop varieties and seeds. Our recently launched corporate vision highlights the central role Niab plays in enabling a "thriving world powered by crop science". To deliver this in practice, Niab has reshaped its delivery and developed our four new co-ordinated Strategic Programmes focused on the needs of the agri-food supply chain – including farmers, growers, agronomists, plant breeders and other input suppliers, agritech companies and the food, feed, fuel and fibre markets that they all ultimately supply. The goal is simple: ensuring the flow of science-led innovations that solve real problems and help drive growth and profitability across the sector.

These Strategic Programmes are part of Niab's wider transformation in 2026, as the organisation works to bridge the long-standing 'valley of death': the space between early-stage, promising research and real-world use. Too often, innovations such as improved crop traits, digital technologies, and sustainable farming methods never make it into the farm field. Farmers' voices are rarely heard in the early phases of developments such that innovations may not be fit for the systems for which they were intended.

The new programmes – *Productive and Profitable Cropping*, *Climate Smart Farming*, *Resource Use Efficiency*, and *Underutilised and Functional Crops* – reflect Niab's strategic shift to ensure we continue to best meet the sector's changing needs. They are designed to focus effort where it will have the greatest impact in the coming years, delivering practical outcomes that help agricultural and horticultural businesses strengthen profitability, boost productivity, build resilience, and achieve sustainable growth.

The programmes set out Niab's shared vision of what we do and why collaboration is essential to address the sector's most pressing challenges. From volatile input costs and regulatory complexity to unpredictable weather and shifting market demands, these issues require a collective, joined-up response. Each programme brings together Niab's expertise in agronomy, genetics, crop health, data science and systems modelling, transforming cutting-edge crop science into practical, field-ready solutions.

Niab's Strategic Programmes are built on the organisation's long-standing reputation for robust and independent research and trusted data-based insights. Core capabilities include:

- crop genetics, trait identification, pre-breeding genetic resources and precision breeding for crop improvement;
- forecasting, modelling and AI enabled decision support for pest and disease management;
- independent validation and certification through our crop trials platform (for field and protected cropping systems), together with seed certification and analytical services;
- agronomy, crop protection, soil health and post-harvest management supporting diverse, resilient and sustainable UK cropping systems;
- training, information and advice services tailored to meet industry need.

The programmes are designed to ensure farmers and growers benefit from the best available science and innovation to help to inform their decision making – from improving crop performance and reducing inputs to preparing for a changing climate and opening up new crop opportunities. Each programme draws from Niab's core capabilities; for example, Niab is working with partners to develop precision-bred crop varieties with enhanced disease resistance, and to evaluate the wider agronomic performance of precision-bred material in field trials.

UK agriculture and horticulture need science that is responsive, reliable, and relevant. These programmes are our commitment to giving farmers exactly that – not in five years' time, but right now.

Productive and Profitable Cropping

"Providing farmers with the genetic tools, agronomy, and farm-ready innovations needed to boost both yield and margin."

Bringing together Niab's unique capabilities across the crop pipeline, ***Productive and Profitable Cropping*** will equip farmers with the latest genetic tools, advanced agronomy, and farm-ready innovations to maximise crop yields, quality, and profitability. By enhancing production levels and boosting UK self-sufficiency through improved crop choices and novel genetics, Niab is helping to ensure that higher crop productivity and resilience does not come at the expense of environmental sustainability. We deliver crop trials to develop data packages that help breeders and agrochemical manufacturers achieve the most from new products. This includes understanding how they are positioned on farm, and the supporting advice given to growers and agronomists on how to use them. Similarly, we work to help growers and agronomists 'experiment' on-farm to evaluate new approaches. Niab's membership service offers tailored advice and exclusive access to demonstration trials, supporting a growing community of forward-thinking farmers. Overall, ***Productive and Profitable Cropping*** will accelerate the journey from scientific discoveries to field-ready solutions, supporting faster uptake of new technologies.

Activities within this programme include:

- assembling genetic resources of pre-breeding material and development of precision breeding tools for the introduction of yield and quality traits to economically important crops;
- adapting crops and crop management approaches for new cropping systems and markets;
- data collection, performance evaluation and subsequent development of models to predict and optimise on-farm decision making for improved productivity and profitability;
- providing independent information to support on-farm decision-making and locally targeted advice, including integrated management of weeds, pests and diseases.

Case Study

At Niab, as part of the 'Designing Future Wheat' inter-institute research project, genetic resources have been created and characterised that capture diversity from wheat's parent species and wild relatives. This diversity is now in elite wheat backgrounds and has been made available for exploration by the wheat research and breeding communities. Working with partners from academia and plant breeders, Niab also deployed high-throughput field technology and the genetic dissection of key traits to help screen such diversity enriched germplasm for better yield and disease resistance, as well as other traits such as drought resilience and improved digestibility. This work has led to the rapid and precise detection of genetic regions underlying the variation of yield and the traits that interact to genetically control yield components such as tiller number, ear size, and thousand grain weight. Commercial breeders say that Niab has provided the parents and grand-parents for some of their most recent wheat candidate varieties.

Climate Smart Farming

> "Focused on resilience, futureproofing cropping systems, reducing emissions, and identifying opportunities for carbon capture in soils and crops."

Climate change is reshaping the farming landscape, as the UK sees increasingly unpredictable weather and seasonality. Emerging long-term patterns point to rising temperatures in both summer and winter, fewer frost days, and altered rainfall – bringing drier summers, wetter winters, and more frequent extremes. While these changes may open up new cropping opportunities, they also increase the risk of emerging pests and diseases and change the profile of the abiotic stresses UK crops will regularly be exposed to. To adapt, the sector will need new approaches to identify and assess crops and varieties that are more resilient to such future pressures, ensuring UK growers can continue to succeed in an increasingly uncertain climate.

Niab is working to support the transition to low emission farming by reducing direct and indirect greenhouse gas emissions, with a focus on nitrous oxide in field and polytunnel cropping systems, together with the need to redesign cropping systems on drained peat soils to minimise carbon dioxide emissions; and also by identifying and supporting opportunities for carbon capture and fossil fuel displacement in soils and crop products.

Activities undertaken as a part of this programme include:

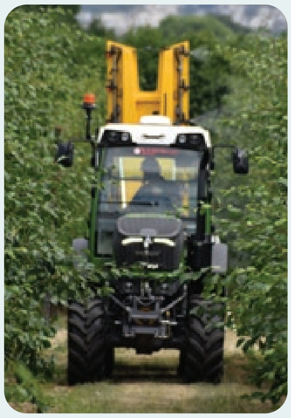
- supporting development of climate-adapted varieties through pre-competitive science and independent pre-breeding selections, helping farmers stay one step ahead of changing conditions;
- collecting and integrating long-term crop performance across a nationwide field trial network to provide growers with actionable insights and solutions that stand up to real-world pressures;
- using integrative system modelling coupled with targeted observation, to support decision-making on-farm and to inform strategies for change across UK cropping systems.

Case Study

Niab led the 'Soil Biology and Soil Health Partnership', funded by the Agriculture and Horticulture Development Board (AHDB) and British Beet Research Organisation (BBRO), which developed and tested a scorecard to measure and manage soil health on farms. The project explored the key drivers of biological functioning and gave UK growers their first access to clear benchmarks for soil carbon (as organic matter, along with other measures). This farmer-facing approach has been further developed to support potato growers to measure and improve soil resilience. The scorecard has been adapted for use in orchards, with Niab leading work on the below-ground carbon storage potential of apple trees. In partnership with industry, Niab is evaluating how soil-improving practices, such as cover crops, can be integrated into profitable cropping systems.

Resource Use Efficiency

"Giving growers the knowledge and tools to use every litre, every unit, and every pass more efficiently."



Farms are under increasing pressure to "grow more with less". Niab delivers science-based guidance and technology to help farmers reduce use of synthetic fertilisers, crop protection products, water, energy, and labour, all while maintaining or improving output and optimising land use. The ***Resource Use Efficiency*** programme drives innovation in water, nutrient, and light-use efficiency whilst building resilience against more challenging growing environments, for field crops and protected cropping systems.

Within field cropping, Niab is helping to understand the factors that underpin the most efficient systems, so that more sustainable growing systems can be developed in partnership with farmers and agronomists. Specifically, Niab will support the selection and management of rotations, soil management, water use, crop nutrition and crop protection strategies. For protected crops, Niab is focusing on raising the bar for the highest achieving, sustainable, and resilient varieties and production systems through optimisation of factors associated with light-use efficiency, root system architecture, nutrient and water use as well as substrate reuse, recycling, and re-purposing.

A key part of Niab's work is to deepen our understanding of the interplay between genetics, environment and management in farming systems. Precision breeding will increase the speed of the variety development pipeline to enable growers to select varieties tailored to specific growing conditions and systems, maximising resource use and sustainability.

Activities undertaken as a part of this programme include:

- delivering field trials evaluating new crop input technologies (including recovery and reuse of nutrient inputs), and more targeted nutrient application;
- developing new grower-facing tools to help to improve on-farm resource use efficiency, productivity, and profitability in new and recycled substrates for protected crops;
- developing and optimising mathematical models and AI tools for interrogation and utilisation of input response data;
- identifying traits associated with resource use efficiency and their genetic control;
- developing pre-breeding material with favourable resource use efficiency traits for commercial exploitation.

Case Study

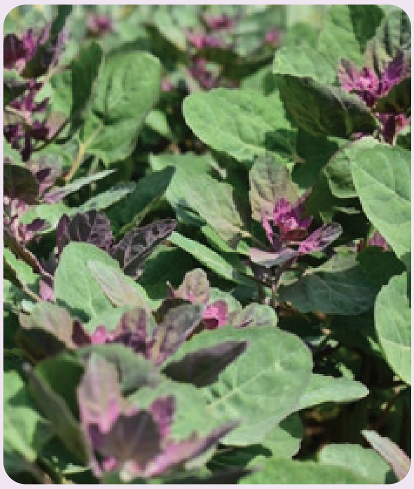
Niab worked with a consortium of industry partners to develop the Water Efficient Technologies (WET) Centre, which provided a semi-commercial scale centre of excellence in protected cropping systems. It allowed evaluation and demonstration of the latest growing systems, including irrigation equipment, substrates, sensors, nutrient formulations, biostimulants and agrochemicals. Also included were tunnel technologies to optimise light availability whilst capturing rainwater for storage and re-use.

Even in very dry and hot summers, it was shown that rainwater harvesting and reuse, coupled with precision irrigation, could deliver 95% self-sufficiency in water use. Niab also demonstrated how variable the growing environment can be within commercial-scale polytunnels, and quantified these effects on cropping potential and resource use efficiency so that growers could better mitigate to ensure high and consistent cropping across the growing area. The WET Centre led the industry to reducing the average water use per tonne of fruit produced. It generated benchmark data for realistic net-zero targets, and provided comparative performance analysis of other growing environments including glasshouse and total controlled environment agriculture or vertical farming systems.

New projects are taking this work forward include the design, test and produce sensors to detect plant stress in woody crops before visual symptoms appear, allowing growers and agronomists to apply interventions earlier, thereby minimising yield losses and maximising efficiency. Work is also ongoing to develop and test a low-nitrogen growing strategy for commercial out-of-season strawberry production in total controlled environment agriculture.

Underutilised and Functional Crops

> "Helping farmers diversify with crops that offer new market opportunities, better nutritional qualities, or improved suitability for UK growing conditions."



UK farmers currently depend on a relatively small number of plant species. New crops and crop types have emerged with an expansion of growing range, for example grain maize, or by identification and enhancement of key characteristics that increase the market opportunity whilst also enabling effective agronomy, such as the development of oilseed rape in the 1980s.

Niab works with the industry to develop varieties and agronomic approaches that bring improved crop quality for food and human nutrition, or other uses, whether grown in the field or in protected environments. This programme has a specific focus on crops that are currently underutilised or not fully exploited. Through expertise in agronomy, crop health, genetics, and precision breeding, Niab promotes the development of new varieties and improved crop quality for both food and non-food uses. Our breeding and variety evaluation programmes support the industry to bring new crops and varieties to market and help farmers to tap into new market opportunities, enhance nutritional profiles, and identify crops better suited to their own growing conditions. Niab's analytical services team offer growers valuable insights into crop performance, market potential, and quality benchmarks, making alternative crops a viable and profitable option – not just a risky experiment.

Activities undertaken as a part of this programme include:

- identifying traits (and their genetic control) associated with nutritional benefit (including reduced anti-nutritionals) and those that support the introduction of alternative crops, crop types or varieties into the UK cropping environment, such as post-harvest processing needs;
- assessing varieties of such crops for both their quality (consistency as well as potential) and agronomic performance in current and future climate scenarios;
- Developing and optimising agronomic approaches for growth of the relevant crops in the UK, and the effective realisation of their quality potential;
- Identifying harvest and post-harvest infrastructure or preprocessing strategies that will enable farmers/growers to effectively add such crops to a sustainable rotation.

Case Study

Niab is combining agronomy, plant breeding and biotechnology approaches to improve existing crops and adapt novel crops to UK conditions, thus reducing reliance on imported sources. A key focus is on legumes, as pulses – including chickpeas, lentils, beans, peas – are increasingly driving the alternative protein market. They are a valuable break crop in arable rotations and are used as sustainable, versatile, and cost-effective ingredients for the development of plant-based meat and dairy alternatives, crucially delivering dietary fibre, vitamins and minerals as well as protein.

Niab led a recent project to develop chickpea as a novel source of domestic UK protein. A diverse collection of chickpea material was assembled and evaluated in field nurseries, complemented by a unique population of novel induced variants developed together with a biotechnology start-up. These new sources of diversity fed into a cycle of new crosses which have kickstarted the development of UK-adapted material. The project took a multi-faceted approach, with variety trials, agronomy testing and end-use quality assessments ranging from small plots up to field-scale evaluation carried out by Niab and industry partners. A new project is now taking place on farm to explore further agronomic options to improve harvesting reliability, to measure the impact on crop rotations, and to work with the supply chain to explore processing, functionality and flavour traits.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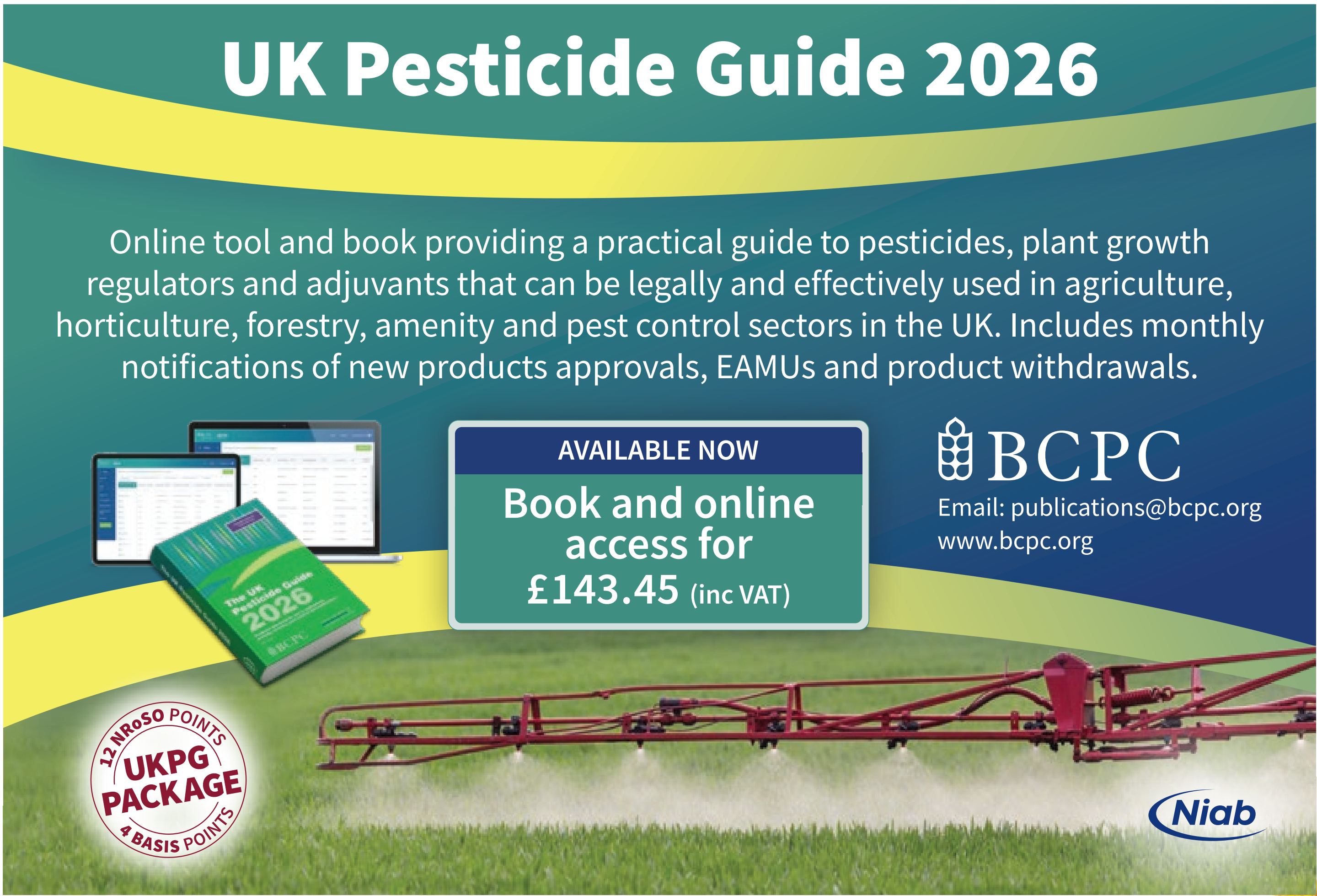
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New cereal varieties to look out for in 2026/27

Once again, it is time to review the cereal candidate varieties currently in trial and some, without doubt, will appear on next year's AHDB Recommended Lists. For some crops the choice is large but as the season progresses these choices will become clearer.

Clare Leaman has worked in variety evaluation at Niab for over 30 years. For the majority of this time Clare has worked with combinable crops, with a focus on cereals. Much of Clare's work revolves around knowledge transfer within the industry both through the Niab membership as well as to a much wider audience. Translating data and trial information into a digestible format for the growers and agronomists to use on the front line is a high priority. Clare is widely regarded as a key source of independent cereal variety advice to growers.

Wheat

Winter wheat has a bumper crop of 23 candidates in trial this year. With last year's changes in the yellow rust population, we will all be looking for varieties to plug the resistance gaps in the currently available varieties, ideally without having to compromise elsewhere.

Starting with the varieties with breadmaking potential we have **KWS Voyage** (KWS). The variety has a treated yield up with the best current feed variety, a good septoria rating and orange wheat blossom midge (OWBM) resistance. It offers potential Group 2 quality, but it is rated as a 5 for yellow rust which may not be enough. **Gibson** (Senova), another potential Group 2 variety, has a similar yield to KWS Extase both treated and untreated. It has good resistance to both yellow rust and septoria and looks to have a similar earliness of maturity. **LG Windmill** (Limagrain) has a similar quality and treated yield potential and an excellent 8 rating for septoria but is only rated as a 5 for yellow rust. **KWS Melesie** (KWS) looks to have better quality and will be hoping for Group 1 approval. It offers a competitive yield and good resistance to both yellow rust and septoria, which leaves the quality needing to stack up and for this we will have to wait.

Next, we look at varieties with biscuit-making potential. **Sunspire** (Elsoms) offers a competitive yield, both treated and untreated, and a solid set of 7s across the diseases with the exception of eyespot. **Lucifer** (Elsoms) also has a competitive treated yield, but has a more moderate disease profile albeit without a major flaw. It looks to be a late maturing variety. **LG Spear** (Limagrain) offers a good yield, both treated and untreated, with excellent yellow rust resistance as well as good resistance to septoria. All three varieties offer OWBM resistance.

The soft feed section is currently topped by **NOS Beast** (Senova) offering high yields in both treated and untreated. It has impressive resistance scores for both of the rusts as well as for septoria, and an excellent specific weight. It looks to be a later maturing variety and has seen some lodging in untreated trials, although it appears to respond well to plant growth regulator. **SY Mirage** (Syngenta) has a good treated yield, good resistance to yellow rust and septoria as well as OWBM resistance. **RGT Hydra** (RAGT) also has a good treated yield, good septoria and OWBM resistance. **Dreadnought** (Elsoms) is slightly lower yielding but offers good yellow rust resistance as well as resistance to OWBM.

Finally, the hard feeds and arguably the sector where good yellow rust resistance will be most keenly welcomed. **KWS Checkmate** (KWS) offers a high treated yield and shows promise of an exceptionally high untreated yield. It has very good resistance to both yellow rust and septoria as well as a good specific weight. **Bastion** (Agrovista) has a high yield, both treated and untreated, as well as good resistance to both yellow

rust and septoria, and looks to be a late maturing variety. **RGT Kraken** (RAGT) offers a high treated yield with good yellow rust resistance. The septoria resistance is moderate and its specific weight is at the lower end of the range. **Percy** (Frontier) has a good treated yield as well as good resistance to mildew, yellow rust and septoria as well as a good specific weight but it is susceptible to brown rust. **Girton** (Senova) has respectable yields and good septoria resistance while **Bluebird** (Elsoms) is similar but has the advantage of early ripening which can be a big draw for some growers. **RGT Griffin** and **RGT Gorgon** (RAGT) both offer barley yellow dwarf virus (BYDV) resistance as well as resistance to OWBM. RGT Griffin offers the best combination of treated and untreated yield with good resistance to both yellow rust and septoria, and later maturity. RGT Gorgon looks to have slightly less yield potential but similar disease advantages and is earlier to ripen. The final four varieties – **LG Chieftain** (Limagrain), **LG Wraith** (Limagrain), **LG Stonehaven** (Limagrain) and **RGT Dragon** (RAGT) – are still waiting to complete statutory testing.

With plenty of new wheat varieties to consider it is pleasing to see good levels of disease resistance without compromise elsewhere. Some of these candidates will be available to view on our winter wheat variety demonstration plots at the Niab Open Days and at the 2026 Cereals Event.

There are two spring wheat candidates this year, both feed varieties. **KWS Bugle** (KWS) offers high yield and good yellow rust resistance whilst **WPB Hayden** (KWS) offers slightly more yield coupled with good brown rust resistance. Both varieties have a good specific weight.

Barley

Harvest 2026 sees eight winter barley candidates in trial. **Inferno** (Elsoms Ackermann) is a two-row feed variety offering very high yields, both treated and untreated, along with good resistance to both rhynchosporium and brown rust. **KWS Lemuris** (KWS) is another two-row feed offering very high yields, both treated and untreated, as well as good resistance to rhynchosporium and the added benefit of BYDV tolerance. **LG Caprice** (Limagrain), **KWS Blis** (KWS) and **Paquita** (Senova) are all two-row feeds, all offering BDYV tolerance alongside a competitive yield. KWS Blis has an exceptionally high specific weight but looks less suited to the north whilst Paquita yields particularly well in the east region. These last four varieties clearly demonstrate the rapid progress made by breeders in getting BYDV tolerance into more competitive varieties.

There are three six-row hybrid candidates. Both **SY Fastnet** (Syngenta) and **SY Fisher** (Syngenta) offer very high treated yields, a good range of disease resistance ratings as well as good specific weights. **Idrys** (KWS) is slightly lower yielding with a good specific weight.

The spring barley crop offers three malting candidates, although **RGT Spacewalk** (RAGT) and **SY Pendant** (RAGT) are both still waiting to complete statutory testing. **LG Dynamo** (Limagrain) is a high yielding variety with a moderate disease profile. Quality is of course key for these varieties and a full assessment of this is likely to take a further year. Additional to these varieties is a null-lox variety **CB Sceptor** (CB23-0287) (Secobra) which is also still caught up in statutory testing.

Oats

In winter oats there is one candidate to be considered for recommendation in the autumn. **Maunsell** (Senova) is high yielding, both in treated and untreated, and has good resistance to crown rust although it is susceptible to mildew. The kernel content looks very promising, and it will be interesting to see how it is received by the millers in further testing.

There is one spring oat candidate: **Clyde** (Angus Wheat Consultants) offers high yields and good resistance to mildew. It looks to have good grain characteristics and will be undergoing further quality evaluation after harvest.

Productive and Profitable Cropping · Resource Use Efficiency · Climate Smart Farming

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Yellow rust update: what the shift in the pathogen population means for UK wheat

UKCPVS

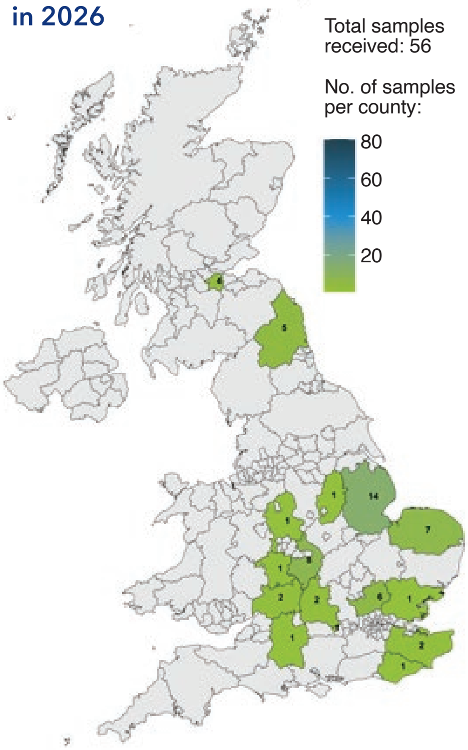
A rapid shift in the yellow rust population, including the emergence of virulence to *Yr15*, is changing the risk picture for UK wheat and reinforcing the need for close monitoring, diverse resistance and a rapid research response.

When a major resistance gene starts to fail, the impact is felt quickly in the field. That is now the case with yellow rust in UK wheat. Following the confirmed breakdown of *Yr15* resistance in 2025, early observations this spring show that yellow rust remains active on varieties previously regarded as highly resistant. Infections have already been reported across eastern and central England and parts of Scotland, underlining that this is not a localised issue but a national one.

The latest evidence from the UK Cereal Pathogen Virulence Survey (UKCPVS) shows just how quickly the picture is changing. In early spring 2025, nearly all samples sourced through UKCPVS came from the north-east of the UK, particularly Northumberland, North Yorkshire, Sunderland, East Yorkshire and Lincolnshire. This year, by contrast, samples have come from a far broader area. By the end of March 2026, 56 wheat yellow rust samples had been received, with the highest numbers from Lincolnshire, Warwickshire, Norfolk and Hertfordshire, and submissions spread across a much wider geographic area than at a similar point last season (Figure 1), pointing to more widespread early-season yellow rust activity. Of these, 34 samples (61% of the total) came from varieties carrying *Yr15*. The most frequently sampled *Yr15* varieties include Mayflower, Champion and SY Cheer, showing that infection is affecting several widely grown varieties rather than being confined to a single genetic background. Together, these findings indicate that the *Yr15*-virulent strain is now established, widespread and active early in the 2026 season.

Field observations are now beginning to support that survey picture. Under field conditions, Niab is seeing a pattern broadly similar to that detected though the survey, with yellow rust developing on a number of varieties carrying *Yr15*. Varieties such as Champion, KWS Aintree, KWS Dawsum, KWS Palladium, LG Beowulf, LG Typhoon, and Mayflower, all shown symptoms (Figure 2). These are also signs that symptoms are appearing earlier than they did last season, although this may reflect a combination of factors, including closer vigilance, the milder winter, or a greater area of *Yr15* varieties drilled in autumn 2025. As in 2025, some varieties carrying *Yr15* appear to be more affected than others, suggesting that agronomic responses will need to remain variety specific rather than assuming a uniform level of risk

Figure 1. UK map showing the counties that submitted wheat yellow rust samples in 2026



Dr Kostya Kanyuka leads UKCPVS and heads the Plant Pathology Department at Niab, managing strategic and applied research on the biology, detection, surveillance, epidemiology and management of diseases and pests of field crops, working with a wide range of academic and commercial partners and customers. Kostya's overall research interest is to understand how pathogens cause disease on plants and how plants resist pathogens at the mechanistic and molecular level with the aim of developing sustainable solutions for disease control in crops.

Dr Mark Fletcher joined Niab in July 2024 as Head of Agronomy Services. He leads Niab's team of agronomists who deliver technical and consultancy services across the country. This includes overseeing the translation of Niab's wide-ranging research programme, including member-funded agronomy trials, into on-farm advice to support productive, resilient, regenerative farming for members, customers and stakeholders. Mark is the primary contact in Niab's external interactions relating to strategic agronomic issues, alongside dealing with technical enquiries and production of the portfolio of agronomy publications available to subscribing members.

Figure 2. Pre-T0 yellow rust in LG Typhoon drilled after temporary grass, Hartlepool, County Durham, 20 March 2026

across all backgrounds. Some varieties without *Yr15*, such as KWS Extase, are also showing yellow rust symptoms, although generally not to the same extent as the more affected *Yr15* varieties.

Control options

From a management perspective, early intervention has so far proved effective. Eradicant chemistry, such as tebuconazole, has already reduced disease levels in affected crops and has delivered sufficient control at the first spray timing. Looking ahead, where varieties are prone to yellow rust, a programme combining protectant chemistry such as strobilurins and prothioconazole with actives that also contribute to rust and Septoria control such as benzovindiflupyr, isoflucypram, fluxapyroxad and fenpicoxamid, is likely to be the most prudent approach. As always, choice of product and programme will need to reflect label restrictions and resistance management guidelines. Only two strobilurin applications are permitted per crop, and tebuconazole is limited to two applications per product; where further eradicant treatment is needed, it will therefore be necessary to switch to an alternative product. Keeping spray intervals to no more than three to four weeks is likely to be important in maintaining control where yellow rust pressure remains high this season.

For growers and agronomists, the message is straightforward: previous expectations of varietal protection may no longer hold in the same way. A variety with *Yr15* in its resistance package is not automatically secure under the current pathogen population. That does not make resistance ratings irrelevant, but it does mean crops need to be watched closely and assessed on what is happening in the field, not just on historic performance. Yellow rust risk should not be underestimated. The latest AHDB Recommended List yellow rust ratings should be used to guide variety choice and management. High-yielding varieties with good yellow rust resistance remain available, and candidate varieties are likely to provide further options for autumn 2026. Choosing greater varietal diversity has never been more important in reducing future risk. Crops should be monitored closely and action taken promptly where infection is detected. At T1, T2 and T3, fungicide programmes should include both protectant and curative activity, with intervals of no more than three to four weeks, to maintain control. Tebuconazole currently remains a useful curative option.

The continued presence of rust on *Yr15* varieties is also a timely reminder of the risks of over-reliance on single major resistance genes. More durable protection will depend on greater diversity, including gene stacking and combinations of all-stage resistance and adult-plant resistance, combined with timely and appropriate fungicide programmes.

Alongside surveillance, the research response is moving quickly. A new BBSRC/Defra rapid-response programme, coordinated by the John Innes Centre with Niab and Rothamsted Research, is aimed at identifying new sources of resistance that breeders can bring into future wheat varieties. The project is drawing on the hidden diversity within the Watkins landrace collection, where promising new resistance sources have already been identified, and links this work to practical disease monitoring and industry engagement. Within that programme, Niab's Plant Pathology team is focusing on two priorities. The first is to monitor *Yr15*-virulent yellow rust isolates for any early signs of reduced fungicide sensitivity, combining molecular analysis through the MARPLE diagnostics pipeline with established assays on wheat seedlings. The second is to screen wild wheat relatives, including wild emmer and goatgrass (*Aegilops tauschii*), for novel resistance sources that could broaden the genetic base available to breeders. Together, this work is designed not only to respond to the current *Yr15* breakdown, but also to strengthen the long-term resilience of UK wheat.

For now, the priority is vigilance. UKCPVS continues to test representative isolates on AHDB Recommended List varieties and candidate lines, and further rust sample submissions remain essential for tracking how the population is evolving. The take-home message is that yellow rust risk in 2026 needs careful attention, especially where *Yr15* varieties are in the ground, and the value of strong surveillance and rapid research has rarely been more obvious.

Productive and Profitable Cropping

Resource Use Efficiency

Underutilised and Functional Crops

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Chocolate spot in winter beans

Chocolate spot is one of the most significant foliar diseases affecting winter field beans (*Vicia faba*) in the UK. In the prolonged wet weather conditions, symptoms can rapidly progress from minor spotting on the leaves to severe canopy loss which can cause yield losses from 30 to 50% or higher. It is therefore important to understand pathogen biology, the environmental conditions conducive for epidemics, variation in crop physiology varietal effects and fungicide options for effective management of this disease.

Chocolate spot is caused by a disease complex comprising the fungi *Botrytis fabae* and *Botrytis cinerea*, with *B. fabae* acting as the primary source of infection in the UK. The disease cycle typically begins with primary infection from overwintering sclerotia (resting structures) in soil and crop debris, which release airborne spores (conidia). Spores land and penetrate the leaf, resulting in small, chocolate-brown spots (Figure 1); this stage of the disease is referred to as the 'non-aggressive phase'. In favourable conditions, new spores are produced from lesions within four to five days; spores are dispersed by wind and rain splash allowing rapid secondary infection in the crop, as disease can move quickly from lower leaves to the upper canopy.

Figure 1. Non-aggressive phase of chocolate spot on field beans

Dr Syed Shah has worked in the UK agri-industry for over fifteen years as an agronomist and crop researcher. He joined Niab in 2019 as a regional agronomist in the south of England and Technical Innovation Lead, providing agronomy advice to Niab members, alongside organising field days and trials plot demonstrations. His main interest is testing innovative products and techniques to reduce reliance on pesticide and fertiliser inputs without compromising yield.

Dr Tom Wood is deputy head of plant pathology at Niab. He manages a range of research activities and commercial trials, integrating classical pathology, genetics and genomics approaches to investigate crop pathogen diversity, identify new and novel sources of host-resistance and develop enhanced pathogen detection and diagnostics strategies. The ultimate goal is to help improve crop protection efforts and to enhance productivity and quality. His current research is focused on developing novel sources of resistance to protect against legume diseases and understand more about virulence mechanisms in these important pathogens.

Chocolate spot is also transmitted by infected seed and volunteer plants, increasing the risk of infection in the crop and confounding management options. Under optimal conditions in susceptible varieties, the disease can enter an 'aggressive phase' (Figure 2) where lesions coalesce into large necrotic areas, leading to severe defoliation, stem, flower and pod infection, and yield loss. Once the aggressive phase is reached, disease progression becomes exponential,

Figure 2. Aggressive phase of chocolate spot on field beans

making control extremely challenging. Pathogen populations can vary in virulence, leading to variation in the severity of infections.

Disease development

The speed at which chocolate spot develops is determined by the interaction between pathogen pressure, environmental conditions, and crop genetics and physiology. Infection can establish rapidly, with new spores produced within days. Severe epidemics can develop within a few weeks or even days, particularly around flowering. The disease thrives at temperatures of 15-22°C, high relative humidity (>90%), rainfall and prolonged leaf wetness. While wet spring conditions are particularly important, high rainfall and humidity during autumn and winter can also lead to significant infection.

Observations from this season and winter 2023 show that persistent leaf wetness with limited drying accelerates disease development. Cool and wet winters and early springs increase the risk of early infection and rain splash from lower canopy leaves spreads the disease to new growth. Under the current UK climate, prolonged spells of mild, wet weather early in the year have led to earlier and more severe outbreaks.

Agronomic factors increasing risk include dense crop canopies due to early drilling or higher seed rate resulting in poor air movement through the crop and increases in susceptibility due to damage from frost. In winter beans, early sown crops often show more severe disease due to the increased exposure to favourable conditions facilitating disease development on lower leaves.

Effect of variety

Varietal resistance plays a role in reducing disease severity, however resistance in commercial winter bean varieties is partial and quantitative rather than complete, affording limited levels of protection. Resistance is also often polygenic which means that multiple genes are involved, complicating breeding efforts. In day-to-day agronomy, varietal resistance should be viewed as a risk-reduction tool rather than a standalone control measure, especially in high-pressure seasons. Therefore, fungicide application and agronomic approaches are key considerations for effectively managing chocolate spot in field bean in addition to genetic resistance.

The speed of development in winter bean varieties, particularly the rate of new leaf emergence, is a critical factor influencing chocolate spot and is often overlooked as a strategy for helping to manage the disease. Fast-growing varieties can reduce disease impact through a mechanism often described as "disease escape" where new leaves emerge more rapidly than disease can cycle, older, infected leaves become less important to overall canopy function, and the crop effectively dilutes disease severity over time. In these scenarios, even if infection occurs early, its impact is reduced, fungicides are better able to protect new, clean growth and yield loss is limited because key photosynthetic tissues remain healthy.

Based on on-farm agronomy experience, the variety Tundra has shown a rapid growth habit and quickly produced new leaves during a warm spring, helping it to "grow-away" from infection under moderate disease pressure. Contrastingly, slower-growing varieties are more prone to disease as infected leaves persist longer and contribute to ongoing spore production. This makes early crop protection and careful management via crop nutrition essential.

In seasons where crop growth is slowed by cold or water logging stress, or lack of nutrition, chocolate spot tends to become more severe because the pathogen can keep pace with or exceed leaf emergence rate. Therefore, nutrition such as sulphur, phosphate and potash, appropriate tillage and husbandry avoid compaction and water logging, and protectant fungicides all help to reduce the risk of infection on newly emerged crops and prevent significant yield losses in high disease pressure years. The most effective control strategy combines varietal choice, agronomy, and fungicide timing. This is because the interaction between crop growth and pathogen development is central to disease control in winter beans.

Earliness, flowering timing, and growth habit

Other important physiological traits which can reduce the impact of disease are the earliness of spring re-growth, rate of canopy expansion, speed to flowering, determinacy, and autumn vigour. Early flowering varieties may avoid peak disease pressure if conditions worsen later whereas late-flowering varieties may encounter higher inoculum levels. However, early flowering can also coincide with cooler, wetter conditions, and increased susceptibility if fungicide protection was not available.

Examples of commonly grown winter bean varieties include:

- Tundra – a widely grown, high-yielding type with rapid spring development
- Vespa – good standing ability with steady, not overly rapid development, higher chocolate spot resistance than other varieties
- Wizard – older variety, slower and less vigorous in spring.

It is important to note that exact disease incidence vary by season and site, these examples only illustrate the range of growth habits seen in practice.

Disease control

Fungicides remain a cornerstone of chocolate spot control, but their effectiveness depends on timing, coverage, and pathogen sensitivity. Earlier, prolonged wet periods in recent seasons have required fungicide applications to be brought forward from the traditional timing at flowering to as early as February or early March to protect crop growth.

Several fungicides are widely used in winter beans:

- Azoxystrobin (Amistar) – provides broad-spectrum activity, including chocolate spot; best used in preventative programmes as sensitivity shifts in some pathogen populations may reduce reliability under high pressure
- Tebuconazole (Tebucon, Tebucur 250, Deacon) – triazoles with activity on a range of fungal diseases provide protective and some curative activity, but limited against aggressive *Botrytis* infections
- Boscalid + pyraclostrobin (Signum) – specifically strong on Botrytis species. Provides long-lasting protection and is widely regarded as a key product at flowering timings, also protecting against rust (*Uromyces fabae*)
- Benzovindiflupyr + prothioconazole (Elatus Era) – strong triazole component combined with SDHI () for enhanced control. Effective as part of a robust programme rather than standalone. Provides strong control of chocolate spot and rust, and is often used at T1 (first pod) timing in winter beans.

These products function as protectants, meaning they prevent infection rather than cure of established disease.

There is increasing concern about reduced sensitivity of some *Botrytis* isolates to commonly used fungicides, particularly in strobilurins (e.g. azoxystrobin) and triazoles (e.g. tebuconazole, prothioconazole). The use of mixtures, combining different modes of action, and alternation of modes of action is therefore essential to delay resistance development.

Effective chocolate spot control relies on early intervention by applying fungicides before disease becomes established, combining different modes of action to reduce resistance risk and protecting new growth by ensuring fungicide coverage keeps pace with canopy expansion.

Varietal growth rate should directly influence fungicide planning. Fast-developing varieties require protection of new growth, so spray intervals may need to match rapid canopy expansion as missing a timing can leave substantial amounts of unprotected leaves. Slow-developing varieties require early intervention with a focus on reducing initial inoculum and longer persistence may be needed from fungicides. In both cases, fungicides such as Signum or Elatus Era are most effective when applied before disease becomes established, but the timing window differs depending on growth rate.

Chocolate spot remains one of the most challenging diseases in winter bean production due to its rapid development under favourable conditions and the limited resistance available in commercial varieties. The disease is driven by the interaction of a highly adaptable pathogen, conducive environmental conditions – particularly cool, humid weather – and crop factors such as canopy density and growth rate. While fungicides such as azoxystrobin, tebuconazole, prothioconazole, or products including Signum and Elatus Era provide effective control, their performance is increasingly influenced by reduced sensitivity in some pathogen populations and the need for precise timing. As a result, successful management requires an integrated approach combining varietal choice, agronomy, and carefully designed fungicide programmes. In seasons with prolonged wet weather and slow crop growth, vigilance is essential, as chocolate spot can move rapidly from minor infection to severe canopy loss, threatening both yield and crop viability.

Practical agronomic takeaways

- Match variety to risk level
- High disease risk: choose vigorous, fast-developing types
- Lower risk: more flexibility in choice
- Consider canopy management
- Avoid overly dense crops (seed rate, early drilling)
- Maintain airflow
- Align fungicide timing with growth
- Fast crops: protect new growth
- Slow crops: early spray to protect early
- Monitor growth stage closely
- Calendar-based spraying is less effective than growth-based decisions.

Bob Froud-Williams
Stephen Moss
Jim Orson

Stubble management and black-grass control

Black-grass remains one of the most intractable challenges facing modern arable farming, demanding both scientific rigour and practical innovation in its control. In this issue, Landmark welcomes three of the UK's most respected authorities on weed science as guest authors – Dr Bob Froud-Williams, Dr Stephen Moss and Jim Orson – bringing their decades of research and field experience to bear on the problem. Now retired from their formal academic and advisory roles, they offer a rare, reflective perspective that cuts through short-term fixes and revisits the fundamental principles of integrated weed management.

This article sets out the principles for optimal management during the gap between successive annual crops in order to maximise the loss of viable freshly shed black-grass (*Alopecurus mysosuroides*) seeds (i.e. shed in that season). It is readily recognised that this may not be a prime objective or that the suggested approaches may not always be feasible. However, understanding the principles may lead to better decision making.

It is acknowledged that other cultural measures are also essential to contain black-grass, including later drilling of autumn-sown crops, spring cropping and, in some cases, fallowing or establishing grass leys.

The principles set out in this article are based solely on the results of detailed research on black-grass seed behaviour and field observations. This is because field trials have not provided clear guidance. This is partly due to them not including treatments that have taken into account scientific knowledge or field experience. For example, the non-inclusion of undisturbed stubble as a treatment. This is despite the fact that it has long been observed that zero disturbance direct drilling often results in less black-grass plants in the succeeding autumn-sown crop than other forms of minimal tillage.

Of course, there may be other weeds to consider. For example, in the absence of ploughing, a very different approach to stubble management needs to be adopted to maximise the loss of viable freshly shed sterile (barren) brome (*Anisantha sterilis*) seed.

Dormancy

The last black-grass seeds to mature, towards the base of the inflorescence (head), are more viable and dormant than earlier maturing seed. Therefore, there are potential pitfalls in sampling in order to get a precise measure of dormancy of

the seed shed. After the seeds develop, they go through a period of after-ripening. It is only after individual seeds ripen that they can

Dr Bob Froud-Williams started his career at Letcombe Laboratory working on minimal tillage before spending eight years in the Weed Biology Department at the Weed Research Organisation (WRO). After the closure of the WRO he was appointed Senior Lecturer in Weed Science at the University of Reading, a post he held for 28 years. He has served on many industry committees including being president of the European Weed Research Society.

Dr Stephen Moss has been involved with weed research since 1975, originally working at the Weed Research Organisation near Oxford, then at Long Ashton Research Station near Bristol and, from 1990, at Rothamsted Research. His research included the agro-ecology of grass-weeds, factors affecting herbicide performance, herbicide resistance and integrated control strategies. He was awarded the Royal Agricultural Society of England's Technology Award for 2009.

Jim Orson spent his whole career closely involved with the science and practice of growing profitable arable crops whilst working for ADAS, Morley Research Centre and Niab. His interest in weed science was reinforced whilst working as the Liaison Officer at the Weed Research Organisation in the early 1980s. He was regularly invited to give talks on cereal agronomy and weed control throughout Europe, Australia, New Zealand and Canada.

become non-dormant. Germination of newly ripe non-dormant seed will be enhanced by at least a brief exposure to (a flash of) daylight at a time when other conditions, notably temperature, have been satisfied.

Above average temperatures from mid-June to mid-July hasten the ripening process. This typically results in a healthy majority of seed being non-dormant by the time of seed shed. Cooler than average temperatures during this period typically result in a significant majority being dormant at the time of seed shed. However, in individual years, dormancy at the time of seed shed can vary very significantly between samples collected from different farms. Typically, freshly shed seed will have ripened and broken innate dormancy i.e. they will germinate in suitable conditions, by sometime in October, provided they have been exposed to daylight.

A field study held in two separate years suggested that a 'low dormancy' seed stock produced significantly more black-grass seedlings in an undisturbed stubble than a 'high dormancy' seed stock, particularly where there was sufficient moisture for germination. Although there are other reasons for the loss of viable freshly shed seed, this suggests that leaving the stubble undisturbed may be more successful in increasing losses in 'low dormancy' years. As a corollary, it also suggests that it may be particularly advantageous to plough down freshly shed seed in 'high dormancy' years when compared to a non-inversion approach.

Fate of buried seed

Black-grass cannot emerge from a depth of more than 5 cm in a settled and reasonably consolidated soil. 70-80% of seed buried deeper than 5 cm in reasonably consolidated soil will be lost between harvests. This is due in part to microbial degradation and some or all non-dormant seed germinating and dying because they cannot emerge. Viable seeds that have survived a year or more of burial when returned to the top 5 cm of soil in the autumn can germinate, even in the absence of daylight. However, these seeds will still need the stimulus of a flash of daylight to germinate in the following springs.

Impact of soil conditions

Low and high soil temperatures prevent germination as do waterlogged soils. Hence there is no emergence in the summer or in the depths of the winter. Waterlogging induces dormancy which may result in a light requirement even when buried seed after the previous harvest is returned to the surface layers. This is unlike seed shed in previous years that has not experienced waterlogging and which does not require light for germination when returned to the surface layers of the soil. This induced dormancy increases the chance of seed surviving in the soil and may partly explain why higher numbers of black-grass plants are often associated with the heaviest soils or those parts of fields that are more frequently waterlogged.

Minimising the number of freshly shed viable seeds after harvest

There are two approaches. Of the two, ploughing them down to a depth from which they cannot emerge is preferred particularly so in 'high dormancy' years. The best alternative is to encourage viable seed loss by leaving the seed on the surface for as long as possible and killing the resulting seedlings with cultivations or glyphosate before sowing the succeeding crop. This approach may be more effective in 'low dormancy' years, particularly if there is sufficient moisture for germination.

Ploughing

Ploughing down seed can be a very effective cultural option, especially if delayed for a time after harvest. This is on the proviso that:

- the seed is buried more than 5 cm deep in settled and consolidated soil.
- there are only modest numbers of viable seed returned to the top 5 cm of soil. These will not have a light requirement for germination except for those induced into dormancy by waterlogging.
- a further shallow cultivation (5 cm) a couple of weeks later may be required to expose to daylight more seed buried in previous years in waterlogged prone areas in order to enable their germination.

Minimising freshly shed viable seed survival in non-plough tillage, step-by-step

This approach will particularly be required where there are very high numbers of freshly shed seed but where ploughing is not possible/desirable. Unfortunately, a higher proportion of seeds is likely to be viable where there have been high populations of seed heads. This is because there is likely to have been a more complete cross-pollination.

Step 1: leave the seed on the soil surface for as long as practicable

There are several reasons why leaving freshly shed black-grass seed on the soil surface after harvest is advisable:

- there is a high rate of loss of freshly shed seed from the soil surface after harvest, possibly due to predation by birds, invertebrates and also microbial activity.
- a higher proportion of freshly shed seeds will become ripe and more likely to germinate because exposure to daylight after ripening is essential to break dormancy.
- in dry weather the seed is more likely to imbibe water from dews and light showers whilst lying in the crop trash on the soil surface rather than in a dry cultivated soil.
- germination occurs more readily if the seed experiences a few wetting and drying cycles rather than being constantly moist. This suggests that seed on the soil surface and more exposed to variations of weather will germinate more readily.

Obviously how long cultivations are delayed depends on the quantity of seed that has been freshly shed and on other crop management objectives.

Step 2: initial cultivation

The initial cultivation should ideally be to a very shallow depth (max 5 cm) when the soil surface layers are moist in order to expose to light any ripe freshly shed seed that has been totally shaded whilst lying on the soil surface.

Step 3: cultivate to the desired depth

Cultivate soil to the desired depth for the succeeding crop. Any seed shed in previous years that is returned to the top 5 cm of settled soil will not require light to enable germination but will require time to emerge before treating with glyphosate. Unfortunately, seed shed in previous years that is returned to the top 5 cm of settled soil and has been induced into dormancy by waterlogging may need a flash of daylight to be ready for germination. This will increase its chance of survival, particularly where no further shallow cultivations are possible.

It is accepted that this ideal step 1-3 approach may well conflict with other objectives and compromises may have to be made.

Where deeper than 5 cm cultivations must be adopted without undue delay after harvest, it will still be advisable to leave the freshly shed seed on the soil surface for as long as practicable. Should these deeper cultivations be carried out when a significant proportion of the freshly shed seed is unripe and dormant (say before late September to October) there may be some value in cultivating the top 5 cm after a week or two in order to increase the possibility of exposing any then ripened seed to light to enable the breaking of innate dormancy. This later cultivation may also encourage a more complete germination of seeds shed in previous years and returned to the surface layers of the soil that has been induced into dormancy by waterlogging.

Spring sown crops

For spring sown crops, whether black-grass seed has been shed the previous summer or in earlier years, exposure to daylight is required to enable germination. However, for most spring-sown crops there is insufficient time for 'stale seedbeds'. Hence, germination of black-grass seed is not desired and so the crops should be sown with little or zero soil disturbance to minimise the number of black-grass seeds exposed to a flash of daylight.

Conclusions

- germination of newly ripe non-dormant black-grass seed will be enhanced by exposure to light on the soil surface.
- the loss of freshly shed black-grass seeds from the soil surface after harvest can be very significant.
- 70-80% of viable black-grass seeds buried by more than 5 cm in a reasonably consolidated soil will die before the following autumn. This means that ploughing is preferred to no plough tillage in reducing the number of viable freshly shed seed, particularly so in high dormancy years.
- viable seed shed in previous years when returned to the top 5 cm of soil will not require light to enable germination in the autumn unless it has experienced waterlogging. However, it will still require exposure to daylight to germinate in the spring.
- the moisture status of the surface layers of the soil will have to be considered when taking some decisions.

Monogram Conference highlights advances in cereal research

Developing more resilient cereal crops will depend on close collaboration between researchers, breeders, growers and industry. That was a clear message from this year's Monogram Network annual conference, held in Cambridge and co-organised by Niab's Kostya Kanyuka and Stéphanie Swarbreck, which brought together the UK small-grain cereal research community.

A major theme was improving disease and climate resilience traits. *Septoria tritici* blotch remains one of the most damaging wheat diseases, and the conference highlighted the risk of relying too heavily on single major resistance genes. The *Stb16q* gene, once considered a strong source of broad-spectrum resistance, was rapidly overcome after widespread deployment in France, showing how quickly pathogen populations can adapt. Durable resistance depends on understanding how genes work, how long they remain effective and how they can be combined to reduce breakdown risk. Niab research showed the value of broadening the wheat gene pool. Synthetic hexaploid wheat (SHW) lines, also referred to as diversity-enriched, wheat, showed high levels of resistance to Septoria, with genetic analysis identifying multiple resistance regions. Similar approaches are being applied to viral disease, with collaborative work involving researchers and breeding companies identifying wheat lines carrying wild-relative introgressions with reduced BYDV accumulation under controlled conditions. These lines are now being tested in field trials and could support BYDV resilience in elite wheat varieties.

Early career researchers attended a pre-conference workshop on wheat breeding at Niab in March

New phenotyping technologies are improving understanding of crop performance below ground. X-ray CT scanning is being used to study wheat root architecture in three-dimensional soil environments, including interactions with black-grass. Results showed that these interactions depend on substrate, nutrient availability and wheat variety. Linked field trials found that deep non-inversion tillage reduced blackgrass aboveground biomass, particularly under high nitrogen, while black-grass growth also varied by wheat variety. This points to the value of combining variety choice, nutrition and cultivation in integrated weed management.

AI is becoming an important tool for crop assessment. One study used smartphone images taken in the field to identify wheat varieties through an AI-driven pipeline combining variety prediction with interpretable spike traits. Tested across different environments, the model achieved ~90% accuracy in identifying 80 winter wheat varieties. Its trait based "fingerprint" could support breeding, variety protection, seed certification and traceable supply chains, while flagging uncertain samples for expert checks or genotyping.

The conference also highlighted the need to link genetics with agronomy and end-use value. In barley, research on naked spring barley identified natural variation in grain β-glucan, a dietary fibre associated with cholesterol regulation, glycaemic control and gut health. Genetic analysis identified regions that could support food focused barley varieties. This is relevant in the UK, where barley is widely grown but not used directly as a major food crop. In wheat, work on flowering time and vernalisation explored how varieties respond to temperature and daylength, helping breeders develop varieties better adapted to future winter conditions.

Although Monogram is often strongly focused on wheat and barley, there was also growing interest in underutilised cereals and grasses, including tef, pearl millet and fonio millet. While these crops are currently most associated with dryland agriculture, some have traits that may be valuable in the UK context. Tef, for example, combines tolerance to flooding at emergence with terminal drought tolerance, and also has nutritional interest as a gluten-free crop rich in micronutrients.

Supporting early career researchers was another important part of the meeting. A pre-conference workshop at Niab gave participants practical insight into wheat crossing, with contributions from commercial breeders, followed by discussion on grant applications and careers across academia and industry. The programme also included a Women in Crop Sciences and Allies session, reflecting the importance of building an inclusive and connected crop science community.

Together, the conference underlined the importance of maintaining a strong pipeline from fundamental crop science through to breeding, variety testing and on-farm application.

News from Niab

Dr Tom Passey awarded Niab enterprise and innovation award

Principal Scientific Assistant Dr Tom Passey has been awarded Niab's annual Bentley Nelstrop Award for Enterprise and Innovation.

The in-house award, initiated by former Niab Trustee Bentley Nelstrop, celebrates exceptional contribution to innovation and enterprise by an individual or a team from within Niab. Dr Passey joins the previous recipients in receiving a unique medal, crafted by sculptor Janet MacLeod, wife of former Niab Director Professor John MacLeod.

Tom was nominated by his colleagues for providing exceptional leadership of the East Malling pathology technical team with sustained contributions to innovation, operational excellence, integrity, and project delivery, as well as to stakeholder confidence within Niab.

Niab CEO Professor Mario Caccamo added: 'This is a well-deserved award for Tom. As always it is a difficult decision for Bentley to select the award winner, and it was no different this year with some worthy staff and teams nominated. What stood out for Tom was his sustained contribution to Niab added to his dedication to ensuring trials and research projects run smoothly, efficiently and produce trusted results. His work directly strengthens Niab science, business, and reputation. Congratulations Tom!'.

Niab Fruit 2026 Annual Review

First published in 2023, Niab's much sought after Annual Review highlights our extensive fruit research portfolio supporting the UK and global horticulture industry. Collated and edited by Niab Horticultural KT manager Scott Raffle the 2026 Review provides a portfolio of Niab's current and recently completed fruit research projects, providing short summaries of the results and key findings for the industry. There are short snippets on new projects along with details about how Niab supports the fruit industry through a range of services.

This year also includes summaries of projects aimed to increase yields of strawberry in controlled atmosphere conditions, match water and nutrients to plant demand in strawberry and plum, harness beneficial insects for pest control, develop novel solutions to pests and diseases in apple and soft fruit, and improve the management of bees and pollinators.

And finally, there is further information about Niab's involvement in new genetic research to aid private soft fruit breeding programmes, and a summary of how Growing Kent & Medway has been supporting the food, drink and horticulture sector.

The Niab Fruit 2026 Annual Review is now available at Niab offices in East Malling and Cambridge, at industry and Niab events throughout the summer or download your digital copy at niab.com.

Colin Peters • colin.peters@niab.com
David White

ADOPT – supporting trialling of new technology and practices on farm

***Landmark* will be shining a spotlight on ADOPT projects, where Niab plays a key role, in this and future editions. Each article will include a Q&A offering practical insights and perspectives. The first instalment in this series focuses on the role of chickpeas in efficient farming systems.**

Chickpeas in efficient farming systems

What is the idea? What is your project aim?

The main aim of the project is to address some of the agronomic challenges faced by growers looking to incorporate chickpeas into crop rotations as a profitable and sustainable alternative break crop. Ultimately, the project aims to give farmers more confidence to try growing chickpeas and raise the profile of UK-grown chickpeas as a healthy and nutritious ingredient with consumers and the food sector.

Who is in the project team?

Two farms are involved. The project is led by David White (Hawkmill Farm, Little Wilbraham), a farm with sandy loam soils (over chalk). After 40 years of conventional farming and contracting on a larger scale, David is entering his tenth year practising regenerative agriculture, no-till direct drilling into catch and cover crops farming "forever green". He is a long-time member of Base-UK, which has provided opportunities to learn from many experienced no-till regenerative farmers at speaker meetings and farm visits in the UK as well as Europe. David has a keen interest in specialist supply chains for more niche crops direct to consumers with particular expertise in growing pulse/cereal bi-crops using minimum tillage approaches.

Trials will also be carried out at Shimpling Park Farms (Suffolk), an organic farm with soils formed on chalky boulder clay. The farmer, John Pawsey, is a leading innovator of research into bi-cropping and was also part of an Innovative Farmers' trial researching the use of livestock to manage weeds without chemicals.

Hodmedods are the leading specialist processor and retailer of predominantly UK-grown pulses and specialist grains. They are passionate about educating consumer and supply-chain partners alike about the opportunities for specialty crops within fairer food systems.

Niab is supporting the monitoring of the field trials and will lead the evaluation of sequential swathing trials at harvest. Colin Peters, Niab's break crop specialist, is the project facilitator.

What problem are you tackling?

The broadening and diversification of crop rotations is a key part of building resilience in UK cropping allowing growers to spread workloads, restore soil health and fertility and explore different market opportunities. Regenerative and organic farmers are often open to trying new approaches and innovations including alternative crops. Pea and field (faba) bean are grown commonly, but are not well optimised for human consumption. Chickpea is a promising break crop for UK conditions, well suited to sustainable growing practice. It has a robust bushy growth habit, fixes atmospheric nitrogen and, as far as we know, requires few inputs to manage pests and diseases. In a recent Defra-funded feasibility study into UK

What is ADOPT?

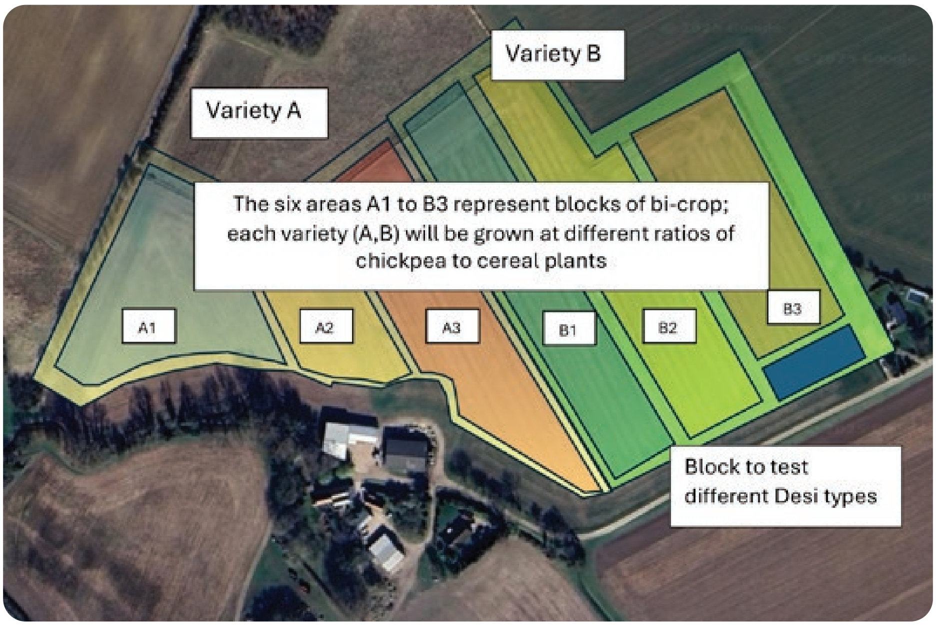
The UK Government has committed significant funding for agritech and innovation. ADOPT (Accelerating Development of Practices and Technologies) is a competitive grant programme that funds one to two year projects that are:

- Using innovations, practices or technologies that have the potential to address on-farm productivity and sustainability challenges.
- Based around farmer-led groups
- Collaborative – involving farmers, industry, researchers
- Scientifically based trials with significant measurement and recording
- Willing to share results and learnings with others

Find out more about ADOPT funding

- Funders website: https://farminginnovation.ukri.org/adopt/
- ADOPT support hub: www.farmpep.net/adoptsupport
- ask Niab directly via adopt@niab.com

Figure 1. Proposed on-farm field trial to test two varieties of chickpeas with cereal bi-crops to determine impacts on growth and ripening



production, Niab showed that while chickpea had a strong market potential, it can face challenges around harvesting, especially in cooler wetter summers.

As the crop is currently semi indeterminate, it will continue to produce flowers unless the weather is very hot and dry. The project will assess different rates of a cereal bicrop, grown in each variety to assess the physiological behaviour of the chickpeas with the different competition levels from the cereals and whether the use of the bicrops helps with improving the evenness of senescence.

What are you planning to do?

Firstly, we will be testing chickpeas as bi-crops with range of cereals during 2026. Other pulse/cereal bi-crops such as beans/oats and peas/barley are gaining popularity as a way of increasing productivity using reduced inputs. Previous experience suggests that chickpea/cereal bi-crops will grow well, ripen together and be amenable to separation through screening and cleaning. The trial planned for 2026 involves the use of two varieties of chickpeas – Flamenco and Rondo – which were sourced from France, and are known to be "early" senescing varieties.

We will see how this works out in practice at harvest 2026. We hope that by testing two different chickpea varieties at different component ratios within bi-crops, we will get a better understanding of the optimum planting mixture. The trials will be carried out in large field blocks (Figure 1). The crops at Shimpling Park Farm will have higher rates of the cereal bicrop as the soils will have lower nitrogen levels. Both farmers have an expert knowledge of their own soils and are integral to the design of the trials which will remain somewhat dynamic as there will be adjustments depending on the weather and how the different crops respond. Secondly, we wish to compare the effectiveness of mechanical swathing and direct combining. Swathing is expected to hasten chickpea senescence and make the crop easier to harvest, but possibly at the expense of yield.

In our main plots we will grow Kabuli types of chickpeas which typically have plumper seeds with a thin translucent testa and are commonly used in Mediterranean and Middle Eastern dishes. We will also trial small plots of Desi types which have smaller seeds with a thicker brown or black testa, a nuttier flavour, and are more typical in South Asian cuisine (Figure 2). The quality and marketability of chickpeas will be measured – combining on-farm data captured at harvest together with processing and quality results from Hodmedods. We will also quantify the benefits of chickpea cropping by assessing soil/tissue nitrogen levels together with other measures of crop and soil health in the following cereal crop in 2027.

The farmers will lead in peer-to-peer dissemination through field visits and open days. This will be backed up by demonstration plots and presentations to growers, advisors the seed trade at Niab technical events and through Hodmedod's newsletters, blogs and through cookery demonstrations.

What will the outputs be?

- More information on growing chickpeas in UK conditions
- Identification of the best cereal bi-crop to use with chickpeas.
- More understanding of the factors affecting crop ripening and the effectiveness of harvesting

Projects approved from submissions in further Rounds are also now beginning to come on stream. The trials on farms across all of England's regions explore new ideas in real working farm conditions, from lower emission machinery to digital tools that support day-to-day farm management. Niab is pleased to be part of the teams delivering a number of interesting projects (see separate box). Niab staff continue to work with farmers to develop proposals for future rounds. Throughout the ADOPT programme, Landmark will feature regular updates and outcomes from ADOPT tests and trials. You can also follow the projects via the ADOPT support hub: www.farmpep.net/adoptsupport.

Figure 2. Chickpeas of two types: Kabuli (K), pale coloured, and Desi (D) with dark testa

Live projects from ADOPT Rounds 2, 3 and 4 where Niab is playing a key role

Chickpeas in efficient farming systems

Farmer lead: Hawk Mill Farms

The challenge: Chickpeas are a crop with potential for UK production as a viable alternative break crop but there can be harvesting issues due to uneven and delayed ripening particularly during cooler summers.

The solution: Growing chickpeas as a bicrop with cereals is expected to restrict the duration of chickpea flowering and hastening senescence. Trials with different cereal:chickpea ratios will explore the impacts. The role of swathing the crop ahead of harvest will also be explored to provide better harvesting guidance for the future.

Match-making organic amendments for soil health and yield resilience

Farmer lead: Berry Farming

The challenge: As a tenant farmer, long-term investment in soil health can be hard to justify. Farm-waste derived biochar has been proposed as a solution but it can lead to nutrient lock-up if not combined with other inputs. There are also challenges for application at field scale.

The solution: Testing a range of pelleting approaches initially developed for poultry bedding, and also evaluating whether co-application or activation of biochar with cultivated seaweed products can overcome any short-term impacts on nutrient supply while delivering long-term benefits for soil health and crop yield.

Potatoes as a dual-purpose food and fibre crop: de-risking stem harvesting for the farmer

Farmer lead: Sentry Limited

The challenge: Potato stems are potentially a source of high quality textile fibres which are attractive as sustainable fibre sources. The adoption of this additional harvesting step may come with risks for the main tuber harvest and impacts on yield and quality of the tubers.

The solution: Optimising pre-harvest management and harvesting approaches with a new stem harvester across soil types to provide robust guidance to allow the approach to be taken up by the potato industry.

Mill-IT

Farmer lead: Nonnington Farms Limited

The challenge: Proso-millet could be a viable, nutritious, sustainable break crop for human consumption in the UK. More work is needed both to develop effective husbandry and, in parallel, to explore new recipes that deliver high nutritional quality and flavour.

The solution: Millet will be cultivated in monoculture, and with a companion crop and following both a legume fallow and a wheat crop on two farms. In particular, it will be harvested without pre-harvest desiccation using glyphosate. Post-harvest processing will include chitting and part-germination of seed to mobilise phytic acid ahead of culinary testing.

Targeted supramolecular nutrition for low P&K high-performance wheat

Farmer lead: Heritage Farming Partnership

The challenge: A large proportion of P and K applied to soils become unavailable to the crop, leading to higher costs, and unnecessary C emission from fertiliser manufacture and transport.

The solution: A targeted foliar supramolecular nutrition programme applied at flag-leaf, anthesis and grain-fill stages will be tested in replicated tramline trials over two years on two farms.

Evaluation of camera-based systems for crop counting and assessment

Farmer lead: Allpress Farms Limited

The challenge: While the number of leeks planted is known accurately, the subsequent performance of each plant is currently assessed by manual crop walking which only gives a snapshot across a crop. Cro monitoring and yield forecasting is essential in field-scale vegetable production to improve resource use efficiency in crop production and harvesting.

The solution: Advanced optical sensing technologies adapted from the security sector, will be assessed to improve how leeks are counted and assessed during the growing season. By integrating these systems onto existing farm machinery, we aim to investigate whether they can offer better crop insights, help reduce waste, and support productivity.

Low volume ProBandz bait sprays for pest control in fruit crops

Farmer lead: New Farm Produce Ltd

The challenge: Spotted wind drosophila (SWD) is the most economically damaging pest of soft and stone fruit crops in the UK and increasingly important in vineyard grapes. Few insecticides are effective against SWD, and there are limits on the number of insecticide applications growers can make.

The solution: ProBandz is a phagostimulant bait adjuvant, which when mixed with insecticides, enables up to 90% reduction in insecticide use whilst maintaining effective pest control. The project will provide robust, field-scale evidence across a range of fruit crops that the use of ProBandz and modified spray technology reduces insecticide use, input costs, and environmental impact, with improved pest control.

Francesca Elliott • francesca.elliott@niab.com

ADOPT

The complex and changeable parasitoid composition of SWD

Niab has begun work on Defra ADOPT *ABC – Adopting Biologicals to Control Spotted Wing Drosophila on Soft Fruit*, a collaborative project led by W B Chambers Farms Ltd and facilitated by British Berry Growers (BBG). It aims to build on previous projects by evaluating the potential of UK-native parasitoids as a sustainable biocontrol option for the invasive *Drosophila suzukii* (SWD) within integrated pest management (IPM) programmes.

Francesca Elliott is a senior research technician in pest and pathogen ecology at Niab's East Malling site in Kent. Her work focuses on optimising insect pest control strategies and enhancing pollination in horticultural crops using sustainable methods. She has worked on a range of key pests, with a particular focus on Spotted Wing Drosophila.

Since its arrival in the UK in 2012, SWD has been a major challenge to soft fruit production. Its capacity to infest ripening fruit has driven increased reliance on chemical controls, prompting urgent demand for sustainable alternatives. Niab has played a leading role in advancing the understanding of biological control options, including parasitoid wasps, in the UK.

Parasitoids lay eggs on or within a host, which the developing larvae consume and ultimately kill. They range from generalists to highly host-specific species, the latter making them valuable for pest species-targeted biological control. Many parasitoids specialise on host eggs, larvae or pupae. However, SWD larvae have a unique ability to encapsulate and kill parasitoid eggs, making it a challenging parasitoid target. There is hope - some parasitoids overcome encapsulation by suppressing the host immune response or by using venom during oviposition to cause host mortality.

Between 2017 and 2020, Niab collected the first field-based evidence of parasitism of SWD in south east England, by UK native parasitoids. SWD emergence was reduced by ~ 21% in the field when parasitoids could access larvae and pupae. Six generalist species were identified: two larval parasitoids, *Leptopilina heterotoma* and *Asobara*

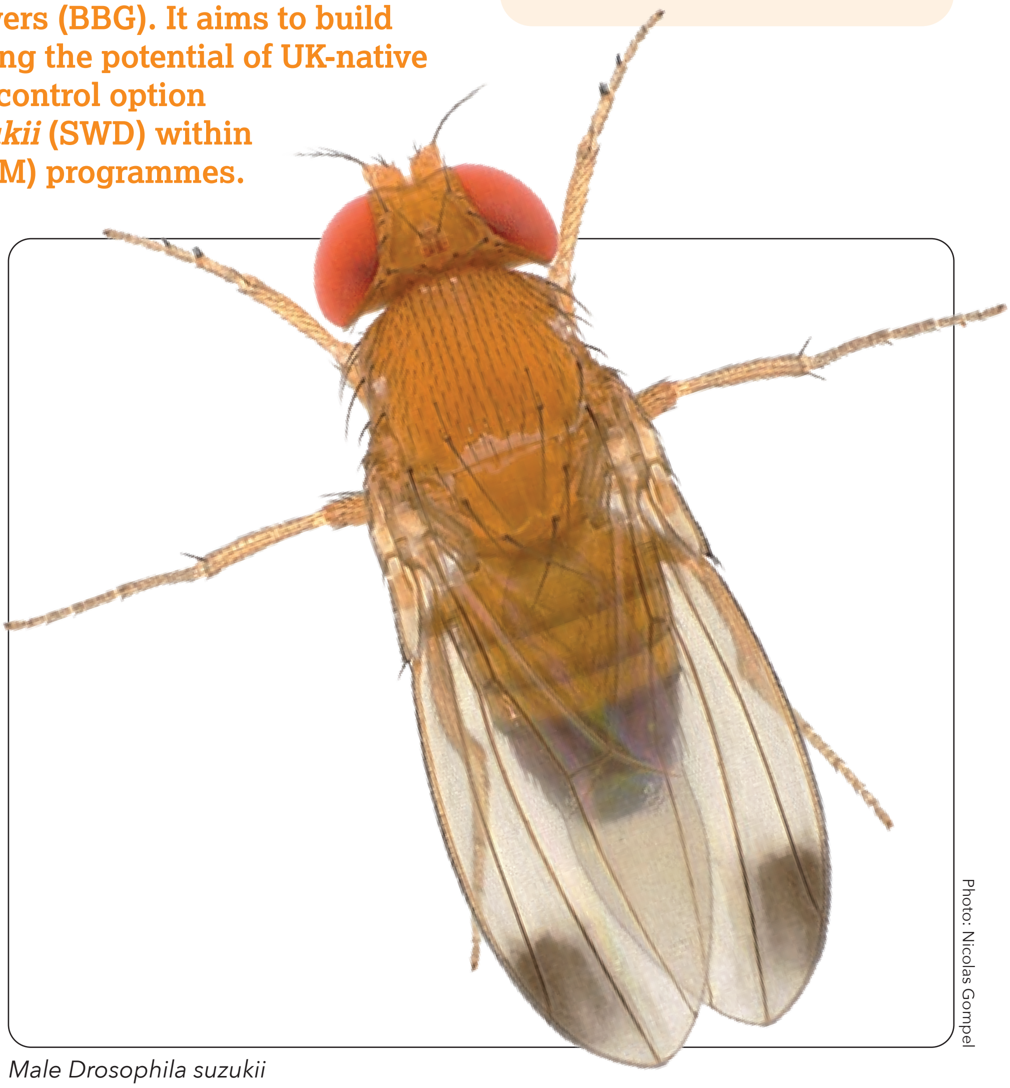


Photo: Nicolas Gompel

Male Drosophila suzukii

Photo: Nicolas Gompel

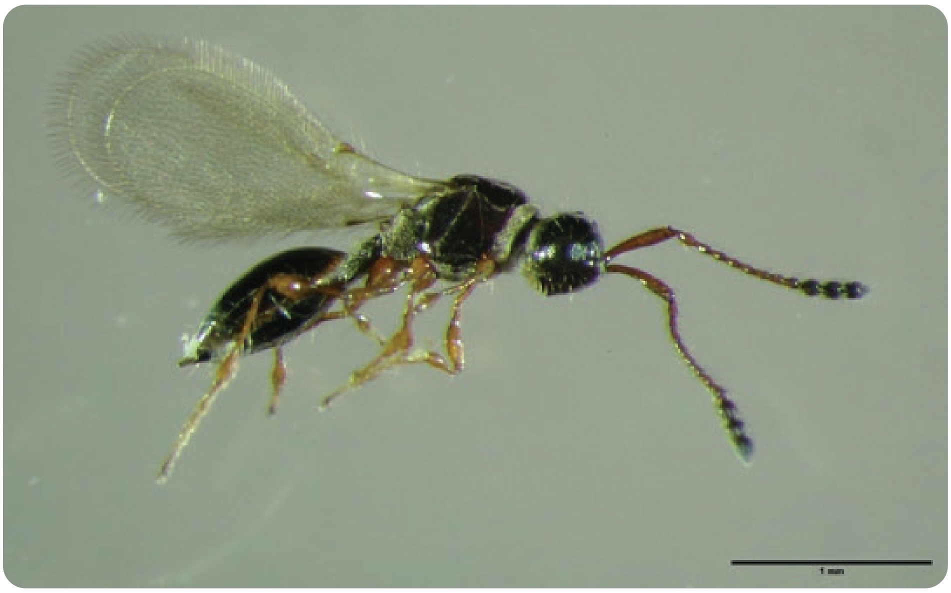
Female Drosophila suzukii

tabida, and four pupal parasitoids, *Pachycrepoideus vindemmiae*, *Spalangia erythromera*, *Trichopria modesta* and *Trichopria prema*. Parasitoid activity was recorded from May through to October, coinciding with commercial fruit growing. These findings suggest that local parasitoid communities may be adapting to this invasive pest. Additionally, the study demonstrated it was possible to increase *P. vindemmiae* numbers in the laboratory, making it a potential candidate for biological control. The identification of *P. vindemmiae* by Niab entomologists in the UK, with the help of Fera and BBG, led Defra to approve commercial releases of this biocontrol agent for the first time in the UK in 2025.

However, due to crop hygiene and pest control sprays, releasing parasitoids inside fruit crops is not successful. Nevertheless, as SWD resides in woodlands and hedgerows surrounding crops, these areas have potential for repeated parasitoid release to reduce the reservoir of SWD entering the cultivated area. Niab partnered with BBG during 2024–2025, in a UK Research and Innovation (UKRI) and Growing Kent & Medway-funded project, to develop and test augmentoria structures designed to retain and enhance parasitoid populations. A further element of this project was to determine if previously unrecorded non-native parasitoids had established in semi-natural habitats on UK soft fruit farms.

Although the short project did not conclusively prove that the augmentoria consistently reduced SWD populations in woodlands adjacent to crops, we identified, for the first time on UK fruit farms, two additional SWD parasitoids: the larval parasitoid *Leptopilina japonica* (native to Asia) and the pupal parasitoid *Trichopria drosophilae* (commercially available in other parts of the world). Additional samples of both parasitoids have also been recorded and identified in the UK. Together, these findings mark a significant milestone in UK SWD control. NB: *L. japonica* and *T. drosophilae* are not registered for commercial release in the UK.

The new ADOPT ABC project in collaboration with UK fruit growers and British Berry Growers will evaluate the effectiveness of repeated, season-long releases of native *P. vindemmiae* in woodland habitats adjacent to crops, targeting SWD populations at their source. By boosting parasitoid numbers early in the season, when natural populations are typically low and SWD begins reproducing, the approach aims to suppress pest build-up in areas adjacent to fruit crops and reduce fruit damage. The study will measure impacts on crop yield, assess reductions in SWD populations in both woodland and crop environments, and evaluate effects on non-target *Drosophila* species. Results will be reported in 2027.



Female Trichopria drosophilae – a pupal parasitoid

Trial in SWD woodland habitat adjacent to soft fruit crop production, March 2026

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Strawberry grower attitudes to landscape complexity revealed

With the continuing decline in fast-acting crop protection products authorised for use in fruit crops, Niab's pest and pathogen ecology team at East Malling has channelled its energies into harnessing naturally occurring organisms from the surrounding environment and developing novel approaches to deliver crop protection that does not rely on conventional crop spraying. In so doing, increasing thought is being given to the management of natural habitats in and around fruit crops and the impact that landscape complexity has on pest control.

Dr Michelle Fountain is Niab's head of pest and pathogen ecology at the East Malling site, specialising in the minimisation of pesticide use in fruit horticulture, improving pollination in fruit crops and incorporating modern fruit growing practices with Integrated Pest Management.

Niab has been one of seven partners in an EU-funded project entitled *'AgroBioConnect: Connections in the landscape. Role of landscape complexity in agroecosystem sustainability'*. The project has investigated the connection between landscape complexity, measured using satellite remote sensing, on above- and below-ground ecosystem services in a range of agricultural landscapes. The general objective of Niab's research was to examine how the landscape surrounding strawberry crops influences beneficial organisms (Figure 1). The teams measured the response of two beneficials; aphid parasitoid wasps, and wild bees that pollinate the crop. The intention was to gauge whether being in a better landscape (i.e. one with more habitat diversity or better connectedness) results in more beneficial insects on farms.

The data is currently being analysed for publication, with this article summarising the results of a survey of strawberry growers who hosted the study sites to understand:

- How strawberry growers considered the landscape when making crop management decisions.
- If they had ideas on how the landscape contributes to fruit production.
- What recommendations they thought would encourage the uptake of wider habitat management.

Figure 1. Landscape heterogeneity shapes the composition of beneficial organisms

To help us achieve this, seven of the 11 strawberry growers who took part in the project were asked five questions.

1. How much does the wider landscape influence your farm?

It was clear that there have been shifts in opinions on this in recent times. While many growers used to consider the surrounding landscape to be a source of insect pests and diseases, it is now seen as a source of control, to the point that newer fruit farms are designed with biological control in mind, incorporating flowering hedgerows, woodland, grassland and ponds. Some growers are giving thought to plant species that might host pests and diseases of fruit and are removing these to reduce reservoirs of inoculum, whilst simultaneously encouraging habitats that boost beneficial organisms. There is also an awareness that local houses, gardens and woodland might harbour damaging pests.

Growers are also more mindful of the impact of the landscape on drought in summer and flooding in winter, and the risks of soil and habitat erosion. There is an understanding that winter rain needs to be recycled and water runoff (Figure 2) managed through the levelling of fields and establishment of reed beds. Increased planting of hedgerows is also considered important to reduce soil erosion, although growers recognise that this might provide habitat for new pests and diseases.

2. How important are landscape features?

There was an overriding view that landscape diversity is less important than good management of specific

Figure 2. Water runoff needs better management on strawberry farms

habitats on the farm. Most importantly, growers feel that connecting corridors of wildlife and beneficial insects is essential, allowing their movement around the farm. Habitat quality including the presence of semi-natural areas like woodlands and flower-rich meadows are also considered important. Some, but not all, feel that smaller fields provide improved levels of aphid control. One grower prefers to establish dedicated wildflower areas to support beneficial insects, but finding suitable land is a challenge. It is generally agreed that more advice is needed to match the size and quality of habitats to cropping areas and where to site these habitats.

3. How does the landscape benefit your business?

There is a feeling that enhancing and protecting the landscape benefits wildlife and biodiversity rather than having a direct positive impact on the fruit business. However, some did see the benefits that such management would have on populations of beneficial insects and their impact on biological control, although much reliance is still placed on introduced predators. It was perceived that it is difficult to quantify the financial impact although the implementation of integrated pest management programmes is actively reducing reliance upon conventional spray control products, whilst also helping to reduce the risk of residues in fresh produce.

Some growers simply derive personal satisfaction from enhancing the number of insect, mammal and bird species around the farm rather than gaining financial benefits. This suggests that some do not associate biodiversity with farm profitability and should businesses come under increasing financial pressure, continual efforts to enhance habitats and associated biodiversity might stop.

4. What are the barriers to landscape diversity in your business?

Several responses highlighted the need to maximise income for business survival, and this necessitates intensive production from the highest proportion of land space available. This leaves little room for establishing different habitats. Administrative burdens and time constraints limit the ability to manage the landscape surrounding strawberry production areas. Some growers are considering hiring an additional person dedicated to managing biodiversity efforts, but finances may prevent such an appointment. Weather conditions are also blamed for limiting the ability to create ditches and prepare land for wildflowers, while there is a lack of knowledge on the best wildflower mixes to sow that will enhance beneficial insects without attracting insect pests.

Figure 3. Growers need more practical guidance on the choice of wildflower species to sow on their farms

Growers generally need more practical guidance and advice tailored to their own specific farm conditions (Figure 3). It was felt that there is a lack of education on how to transition to 'greener' production methods. One grower wishes that retailers would take a more active role in educating consumers over the benefits of sustainable farming and the presence of beneficial insects in harvested produce.

5. If you could implement just one activity to increase diversity of landscape around your farm, what would it be?

Many answers focused on 'low-effort' or 'quick-win' activities. Labour permitting, replanting windbreaks and hedgerows or improving these with a diversity of both woody and wildflower species was popular as was biennial hedge-cutting and reducing alleyway mowing. There is also interest in deploying more plant species to attract natural enemies and different predators either through mixed planting or banker planting.

Although there is a reluctance to remove cropping areas in favour of new wildlife habitats due to loss of income, one grower is considering creating wildflower meadows, to demonstrate a commitment to biodiversity and improve relations both with the public and retailers. There is also a desire to develop devices that will assess the impact of landscape diversity on pests and pollinators in cropping areas and quantify the overall benefits, while clearer guidance and tailored advice is required from agronomists and advisory bodies.

Conclusions

Nine key conclusions were drawn from growers opinions on landscape complexity.

- Water management, including recycling and runoff control, is a growing concern due to water shortages and flooding.
- Most important features for growers on farm include habitat quality corridors.
- Perceived benefits of landscape complexity include pest control, pollination and enhanced wildlife.
- Improved landscape features can improve public relations and retailer engagement.
- Biodiversity is valued for its intrinsic benefits rather than direct economic returns.
- Major constraints include the cost of land, limited space, available time, labour and demand for a premium fruit product.
- Growers need clearer guidance on crop specific wildflower mixes.
- Reducing mowing and replanting windbreaks/hedgerows can be achieved with little additional effort.
- Growers need more advice and guidance from agronomists and advisory bodies to help them implement changes.

A new generation of crop scientists

For graduate students interested in studying for a PhD Niab has excellent resources for research in molecular plant science, quantitative genetics, breeding, transgenic technology and plant pathology both at our Cambridge and East Malling sites. The majority of our PhD studentships, in partnership with UK universities, are funded by grants from leading business, charities and other research providers. Niab also partners with European and overseas universities, hosting international students. More information is available on niab.com.

In this issue, *Landmark* is providing an opportunity for Niab PhD students Jasper Kanomanyanga, Denis Florentin-Sfrangeu, and Deborah Babalola to introduce themselves and summarise their research.

Jasper Kanomanyanga

Google Scholar:

Understanding and promoting weed seed losses in regenerative agriculture to achieve more resilient integrated weed management.

University of Lincoln.

November 2022 to November 2026.

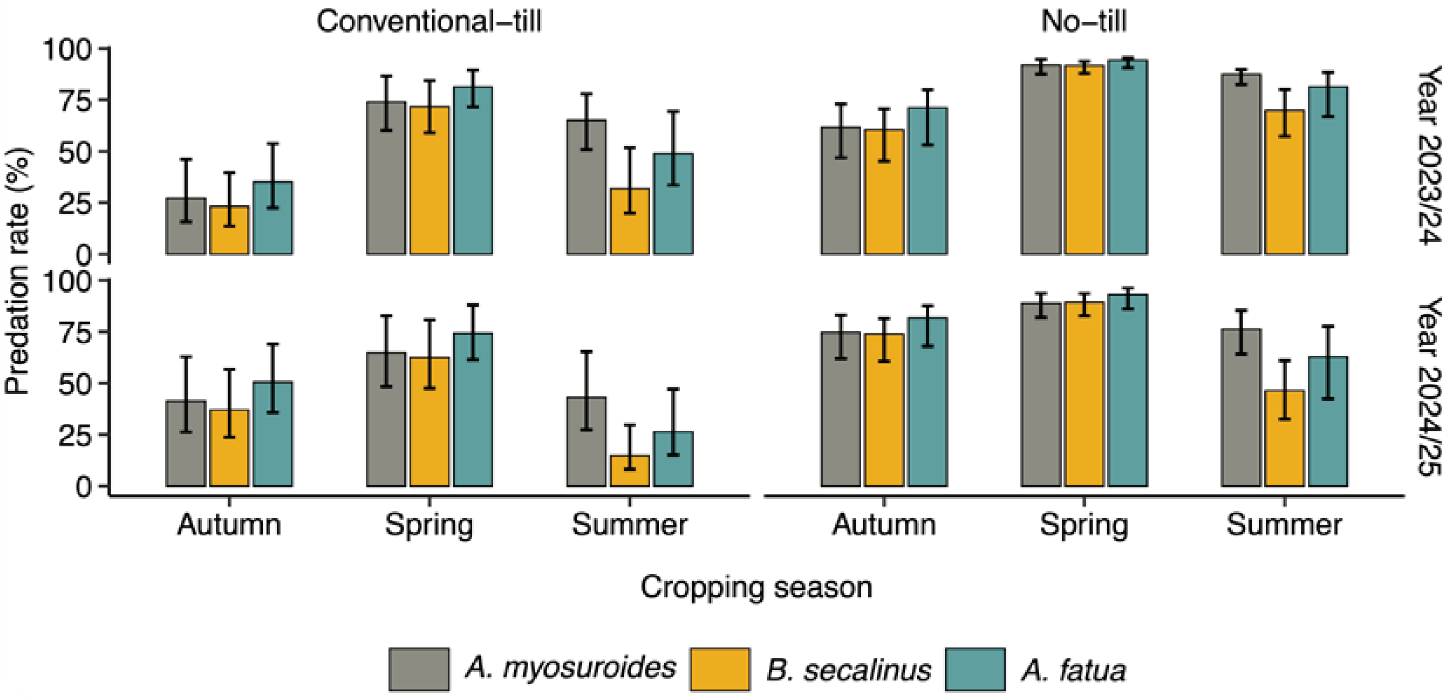
Weed control is often judged by what happens above ground in each growing season. But the real long-term battle is fought in the soil seedbank. Each year, weeds produce and shed fresh seeds, replenishing the soil seedbank, allowing infestations to persist, and increasing the risk of herbicide resistance. Reducing these annual seed inputs is therefore one of the most important ways to suppress weed populations over time.

To achieve this, my research explores several complementary weed seed loss mechanisms in UK arable systems, including weed seed predation (consumption of seeds by animals) and top-cutting (also known as weed-surfing), focusing on problematic grassweeds such as black-grass (*Alopecurus myosuroides*) (Figure 1). Together, these two processes target weed seeds at different stages of the life cycle. Predation removes seeds after they are shed onto the soil surface, whereas top-cutting prevents seeds from returning to the seedbank by removing seed heads before shedding and crop harvest.

In the predation study, I quantified weekly weed seed removal in six arable fields over two years, comparing long-term regenerative no-till (only direct drilling) with conventional tillage (inversion) (Figure 2). Weekly predation rates were consistently greater in no-till fields, averaging 76-79%, compared with 46-52% in conventional systems. Although the magnitude of this effect varied by years, seasons, and weed species, the overall pattern was clear:

Figure 1. Winter wheat field infested with black-grass

Figure 2. Weed seed predation rates across species as influenced by tillage system and season



reduced soil disturbance strengthened a valuable natural weed-control service. Predation was highest in spring, and no-till fields consistently showed greater seed losses to predators, thereby reducing the number of seeds remaining on the soil surface. Therefore, reduced tillage, among other regenerative practices (such as reducing chemical inputs, crop residue retention, and cover cropping), can enhance weed seed predation.

The second strategy, top-cutting, acts before weed seed shedding. This method mechanically removes seed heads that extend above the crop canopy, intercepting seeds before they mature and disperse (Figure 3a,b). In a two-year field experiment involving four grassweeds across two winter wheat varieties (KWS Dawsum, short-strawed, and LG Redwald, long-strawed), efficacy depended strongly on weed species, variety, cutting frequency, and year (Figure 3c). A single cut at early flowering was generally ineffective, removing less than 39% of seed heads. Repeated cutting was far more successful, with three cuts removing 92-96% of seed heads in wild oats (*Avena fatua*), 69-80% in Italian ryegrass (*Lolium multiflorum*), and 37-75% in black-grass. Rye brome (*Bromus secalinus*) was the least responsive, especially in the drier year, which resulted in fewer seed heads extending above the crop canopy. It is therefore important to select the appropriate crop type/variety and critical top cutting timing to achieve high efficacy, as these factors vary with weed species and year.

The broader message is clear. Sustainable weed management should not rely only on controlling emerged weeds. It should also aim to prevent seeds from being produced, shed, and carried over into future seasons, while enhancing seed losses once seeds reach the soil. Predators can remove many of the seeds that reach the soil surface, while top-cutting can substantially reduce seed return to the seedbank. Neither tactic is a stand-alone solution, but together they show how ecological and mechanical seed-loss pathways can be integrated to reduce seedbank replenishment, slow population growth, and support more resilient weed management in regenerative agriculture. To read the full papers, scan the QR code above.

Figure 3. (a) Experimental simulation of a top-cutting machine showing cutting height threshold indicated by a string set above wheat canopy, (b) Zürn's commercial Top-Cut Collect machine, and (c) top-cutting efficacies by species, averaged across wheat variety, cutting treatments, and seasons

Denis-Florentin Sfrangeu

Investigating the role of the 3D soil matrix in mediating root to root interactions between wheat and blackgrass.

RootED Doctoral Network (Niab and University College Dublin) in association with The Morley Agricultural Foundation.

September 2023 to September 2026.

Google Scholar:

Grassweeds are a major constraint to global cereal production, causing agronomic and economic damage. Black-grass (*Alopecurus myosuroides* Huds.) is a notorious grassweed that competes with wheat (*Triticum aestivum* L.) for water, nutrients, and light, and is estimated to cause annual losses up to 0.8 million tonnes in yield, and £400 million in profit in the UK alone. The primary black-grass control method is via herbicide applications, though cases of herbicide resistance have been confirmed. An complementary approach to conventional control methods comes in the form of more competitive wheat varieties, i.e. crops that would either suppress black-grass or be able to maintain yield even under some level of infestation (Figure 1).

While previous research has shown that black-grass inhibits the growth of wheat lateral roots, the exact molecular mechanism is unknown. My PhD aims to understand better how the presence of black-grass affects wheat root architecture and gene expression in different growing conditions.

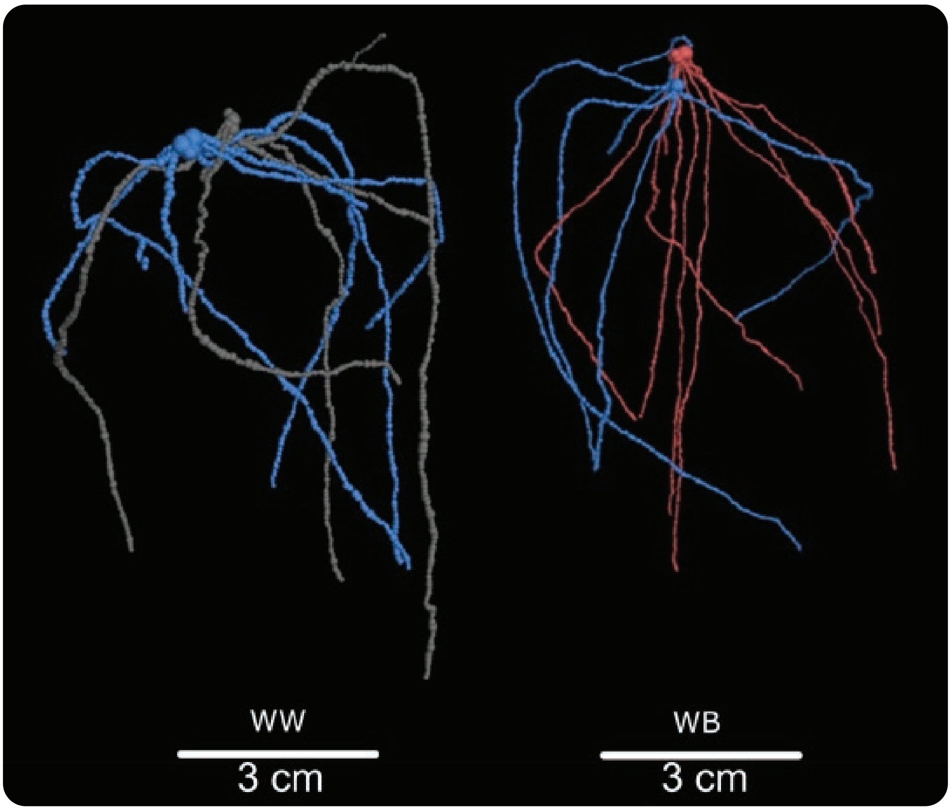
X-ray CT scanning was used to study how wheat and black-grass roots grow around each other in a 3D system. For this, wheat and black-grass were co-cultivated for 11-days in pots. A reduction of the volume of seminal roots was measured when wheat is neighboured by another wheat (WW), but not when it is neighboured by black-grass (WB), suggesting that wheat can distinguish between species as neighbours (Figure 2).

The wheat response to black-grass was further explored under two nutrient levels using a high-throughput method to study gene expression. Results demonstrated that wheat responded to the changes in nutrient levels – which are closely tied to fertiliser applications on the field – with black-grass amplifying these responses even further. The results showed that wheat lateral roots can detect the presence of black-grass roots and respond at the gene level.

Finally, varietal differences in black-grass suppression was investigated using a field trial at Childerley, Cambridge, during the growing season 2024-2025. In this trial, tillage was conducted either

Figure 1. Black-grass plants

Figure 2. X-ray CT scan



through direct drill or deep non-inversion methods, fertiliser applications were at either low or optimal nitrogen rates, while the winter wheat varieties were both commercial and diversity enriched (SHW) wheat lines. Black-grass plants were sampled when winter wheat was at the stem elongation stage, and black-grass at flowering before seed shedding. Black-grass shoot biomass was significantly lower in deep non-inversion plots, compared to direct drilled plots. Varietal differences in wheat's ability to suppress black-grass biomass was recorded with a few diversity enriched (SHW) wheat lines being better at suppressing black-grass shoot biomass, compared to commercial varieties.

Further research on root-to-root interactions, as well as exploiting the innate ability of winter wheat to compete with black-grass, are critical to developing black-grass-resilient wheat varieties.

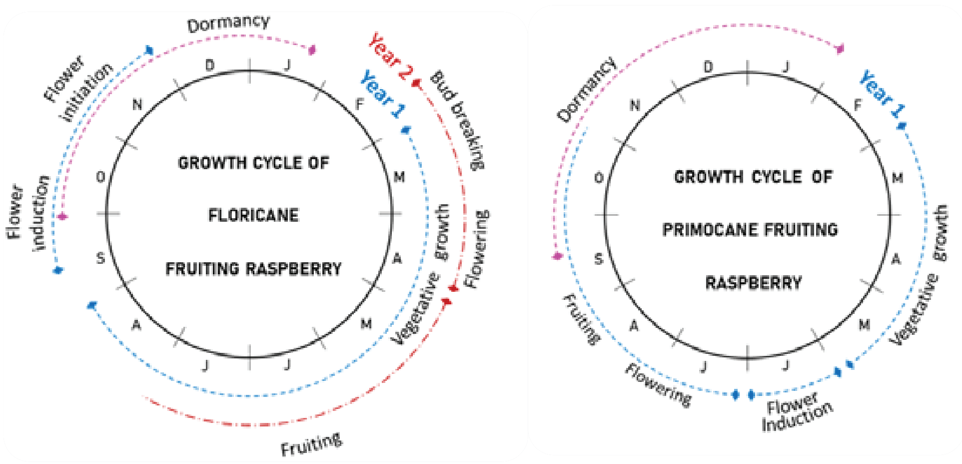
Deborah Babalola

The genetics of primocane fruiting habit in raspberries.
Collaborative Training Partnerships for Fruit Crop Research.
February 2023 to January 2027.

Raspberry is the third largest berry crop in the UK with production valued at £184 million in 2024 with domestic raspberry production accounting for 15% of the total fruit supply in the UK in the same year. Alongside challenges from pests and diseases, variable weather frequently affects fruit set and yield. In a botanical sense, raspberry is predominantly biennial bearing. This means that it only produces flowers and fruits on second-year canes ('floricanes'). However, primocane fruiting types have been bred which are able to produce fruit on first-year canes ('primocanes') and these primocane varieties are now widely grown by UK raspberry growers as they offer opportunities for season extension and show lower sensitivity to temperature and photoperiod effects on flowering and fruiting. Many UK breeding programmes now focus their efforts on developing primocane varieties.

There is a primary difference between the growth habits of each variety type (Figure 1). Floricane varieties require low temperature and short daylength to induce flowers, which usually takes place just before the onset of winter dormancy with flowering itself occurring the following spring. In contrast, primocane varieties can induce flowers without the requirement of low temperature and short daylength allowing the process to take place early enough for flowering and cropping to occur within the first growing season. How reliably and how early in the summer this occurs varies widely, and has important implications for management practices, labour requirements, fresh fruit availability, and the timing of fruit production.

Figure 1. Growth cycle of floricane and primocane-fruiting cultivars



Niab's most recent variety releases, Malling Bella and Malling Charm (Figure 2), are two examples of primocane varieties; the latter crops almost exclusively in the first growing season (strict primocane fruiter) whilst in the former a (variable) proportion of the yield can only be realised in year 2 (commonly known as a 'double cropping'). This proportion varies from year to year and in different growing conditions.

Despite decades of focused breeding, the genetic mechanisms underlying primocane-fruiting expression and the complex genotype x environment (GxE) interactions that affect it remain unclear. An understanding of the genetic control of this habit would provide breeders with

Figure 2. Malling Charm produced upright canes

the necessary molecular tools to fast-track the development of varieties that combine predictable primocane-fruiting patterns with agronomic and end-user traits of interest.

My PhD research focuses on understanding the genetic control of the primocane fruiting habit in raspberry, combining classical plant breeding with genomic techniques to identify the associated gene(s). In an existing breeding population segregating for fruiting habit, multi-year data was collected on flowering intensity (i.e. the percentage of the lateral buds that flowered along the entire length of the cane) and the rate of progress from visible flower bud until fruit ripening. Quantitative trait loci (QTLs) associated with these phenotypes were mapped primarily to Chromosomes 1, 3, and 5, suggesting multiple genes are involved. The QTLs harbour several genes, including those with known roles in flowering regulation and dormancy induction.

Due to the complex pedigree of the existing populations, three new segregating populations were developed by crossing less-developed floricane-fruiting and primocane-fruiting varieties, which produced progenies with a range of fruiting behaviour. Over the last two years, the populations have been grown out and evaluated for the time of first flowering, the rate of progress of flower bud development, and flowering intensity (on first-year canes). In the F_1 populations (Figure 3), around 50% of the progenies initiated flowers early enough to ripen their fruits before winter (first open flower by early September), suggesting a recessive mode of control. Rather than forming two distinct groups, the pattern across the populations showed that fruiting habit in raspberries forms a continuum. As the temperature cooled and day length became shorter in autumn, flowering slowed until halting in November, September and October in the three populations, respectively. The ongoing genotyping analysis of these populations is expected to provide further genomic information.

The evaluation of the expression levels of key flowering genes during the transition from vegetative to reproductive development, as monitored in two raspberry varieties differing in fruiting habit, identified differentially expressed genes, suggesting their conserved functions across plant species. This work will serve as a bridge to understanding fundamental scientific mechanisms and enable raspberry breeders to use precision breeding and selection tools in the future.

Figure 3 . Two F_1 individuals from a family segregating for fruiting habit: (a) primocane-fruiting (b) floricane fruiting. Both canes have overwintered, dormancy has broken, and the lateral buds that did not flower during the first year are growing out. In the variety to the left the upper part of the cane has completed fruiting

Ros Lloyd • ros.lloyd@niab.com

Connecting research and innovation with farmers and industry

Every summer, Niab's open days and attendance at trade events, including the Cereals Event, Groundswell and Fruit Focus, offer a unique opportunity for growers, agronomists, researchers and industry partners to meet, share knowledge and see cutting edge agricultural science in action.

In between exploring the nooks and crannies of Clarkson's Diddly Squat Farm, joining the festival vibe at Groundswell, or watching the spins and twirls of a Duxford Spitfire flying above us during the Hinxton variety plot tours the 2026 Niab programme brings together a wide range of technical agricultural activities across multiple sites and national events, creating a vibrant platform for discussion, learning and collaboration. With a full calendar of open days, innovation showcases and appearances at major industry shows, Niab aims to support farmers in navigating the challenges and opportunities of a rapidly changing agricultural landscape.

Open days are a cornerstone of Niab's commitment to advancing productive, sustainable and resilient farming. While research papers, technical reports and digital tools all play an important role in sharing data, nothing compares to seeing trials directly in the field. These events provide visitors with real-world evidence, hands-on demonstrations and immediate engagement with the Niab experts behind the science.

For growers and advisers, open days offer genuine agronomic value. They give visitors access to demonstrations that reflect real challenges – from emerging pests and diseases to the latest varieties, a first look at a new crop species that may feature on-farm in the near future to tools and advice to combat increasingly unpredictable weather patterns. Trial plots, demonstration areas and guided tours help translate complex research into practical applications. Visitors can ask questions, compare varieties, discuss management strategies and take home insights that can inform decisions on their own farms.

For Niab staff, the events enable meaningful two-way dialogue. They help ensure that research remains relevant to industry needs, encourage collaborative problem-solving, and strengthen connections between Niab's scientific teams and the communities they serve. Open days also create opportunities to gather feedback, explore new ideas and showcase long-term research that shapes the future of crop production.

Across the open days and wider summer events, Niab will present an extensive mix of trials, demonstrations and technical sessions. These include:

- crop variety demonstrations – visitors can explore side-by-side comparison plots of commercially available wheat varieties and candidates. These plots highlight differences in vigour, disease resistance, maturity, lodging and yield potential.

With over 25 years of experience in farming and scientific communications, Niab's Head of Communications Ros Lloyd manages and produces Niab's PR and communications, conveying to many different audiences all aspects of work carried out by Niab, through various channels including events, online, social media, publications and press to meet member and stakeholder needs.

- agronomy and rotational trials – Niab will showcase research into sustainable soil management, nutrient-use efficiency, cover cropping, cultivations, rotations and integrated pest management.
- pathology and disease management – Niab's pathology specialists will walk visitors through disease development, treatment efficacy, varietal response and emerging threats.
- meet the experts – specialists from across Niab will be available throughout each event to discuss specific crops, regional issues, technological developments and long-term research aims.

Summer 2026 Open Days

The 2026 summer event schedule reflects Niab's commitment to supporting a forward-looking, research-led agricultural industry. Each event offers something different, from regionally relevant agronomy at Sutton Scotney to visionary systems thinking at Morley and the broad national showcase at Cambridge. Combined with high-profile appearances at Cereals and Groundswell, Niab's programme ensures that growers, advisers and partners have access to the latest evidence, innovation and practical guidance. Whether you are seeking variety insights, agronomy support, sustainable farming strategies or technological innovation, Niab's 2026 summer events provide an invaluable opportunity to learn, connect and explore.

Central Open Day - Cambridge Hinxton - 2 June 2026

The Central Open Day, at our Hinxton trials site just south of Cambridge, offers a comprehensive look at Niab's national research programme, where visitors can explore extensive variety plots, crop protection trials, agronomy demonstrations and innovation projects. The Cambridge site also hosts specialists across multiple disciplines, making it an ideal event for those seeking detailed technical conversations.

Farming Systems Open Day - Lincolnshire - 4 June 2026

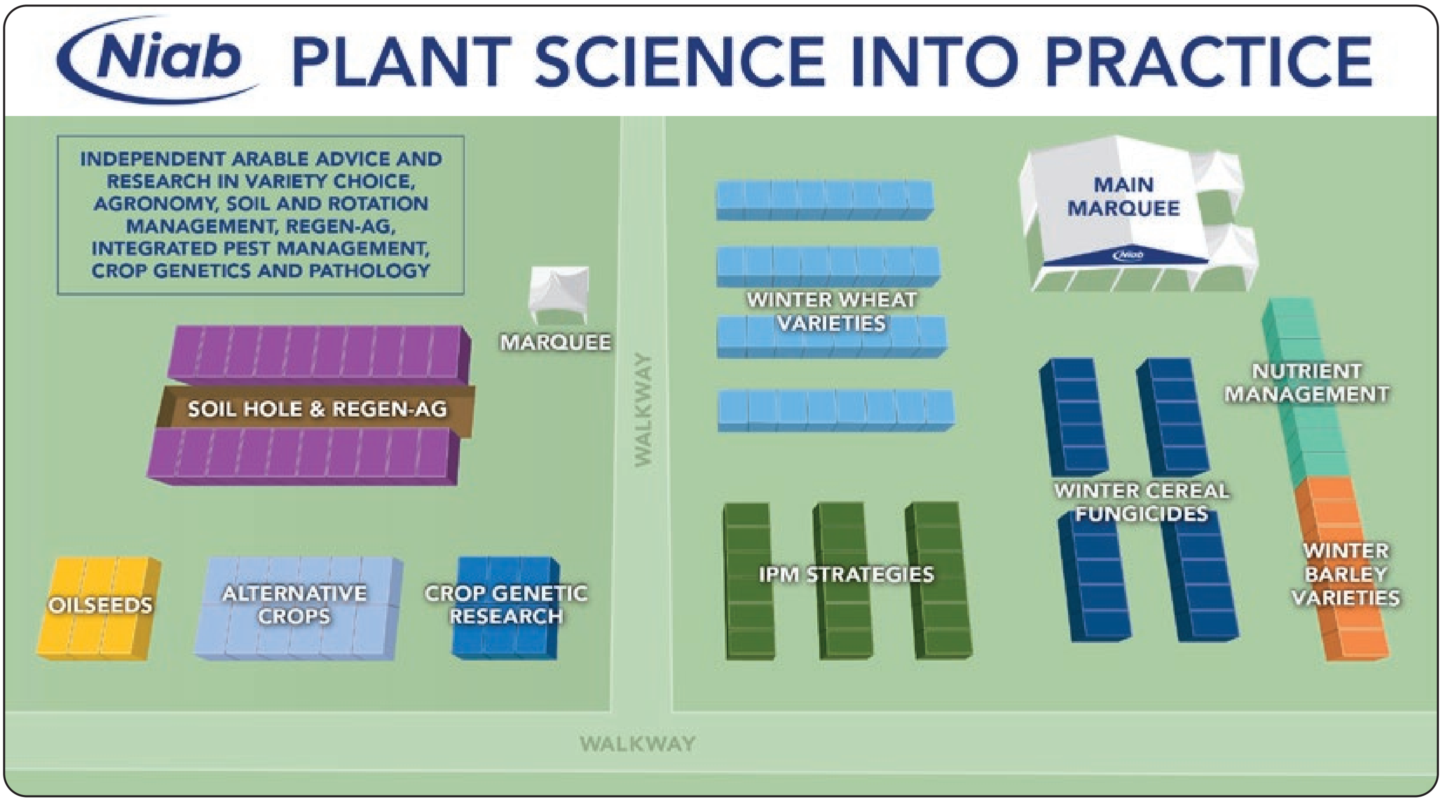
New for 2026 Niab is opening up its Lincolnshire weed trials site to members and non-members with demonstrations covering black-grass management, a dive into disease pathology, a look at the opportunities with the Defra-funded ADOPT programme for on-farm research and an examination of how improving crop production helps tackle climate change.

South Open Day - Sutton Scotney, Hampshire - 16 June 2026

Niab's South Open Day focuses on research and agronomy tailored to farming conditions across the region. Visitors will gain insights into variety performance, fungicide comparison work, nutrient management and rotational studies suited to the region's climate and soils. Technical demonstrations highlight strategies to address local pest and disease pressures, making this event especially valuable for growers and advisers working in the South.

Morley Innovation Day - Norfolk - 18 June 2026

The TMAF Morley Innovation Day offers a forward-looking programme centered on systems thinking, regenerative agriculture and integrated sustainability. The Morley site is home to several long-term research projects examining soil health, reduced tillage, rotational diversity and resilience-building practices run by Niab. And Niab will also run its traditional winter wheat and



Niab's 2026 Cereals Event stand

barley variety demonstration tours plus fungicide programme plots. Visitors can also engage with collaborating organisations, reflecting Morley's role as a hub for partnership-led research and knowledge exchange. This event is particularly popular with those exploring new ideas or seeking to future-proof their farming systems.

In addition to hosting its own events, Niab will also have a strong presence at two key national shows.

Cereals Event – 10-11 June 2026

As the UK's leading arable event, Cereals attracts a wide range of visitors from across the agricultural sector. Niab's presence includes extensive demonstration plots, crop protection updates, agronomy insights and variety performance briefings. Specialists will be available throughout the two-day event to discuss trial results, emerging issues and research developments.

With over 25 different crop species across 130 plots planned on the Niab stand, and its neighbouring *Soil Hole* exhibit sets the standard for 'plant science into practice' at the 2026 Cereals Event on 10th and 11th June.

The Niab stand at the Cereals Event is known for providing the latest technical advice and research in variety choice, independent agronomy, soil and rotation management, crop genetics and data science. The full list of exhibits planned for 2026 includes:

- winter cereal variety demonstration plots – providing expert advice on winter wheat and barley choice for 2026/27 with 32 established and new candidate wheats and a selection of barley varieties;
- advice on crop protection and nutrition including the latest information in new fungicide chemistry, new strategies and a comparison of wheat, barley and oat fungicide programme options and a demonstration of wheat variety blends;
- nutrient management strategies in winter wheat;
- plots demonstrating integrated crop management strategies including the use of bi-cropping options, wheat and bean trap crops, biofungicides, and winter wheat blends;
- weed management options in SFI herbal grazing leys
- regenerative agriculture research and information covering variety choice, nitrogen management, rotations, cultivations, tillage and soil management;
- as part of the Centre for High Carbon Capture Cropping (CHCx3) platform a look at some of the UK's under-utilised or novel crops that may feature on farm in the future in response to our need for a more resilient agricultural system, e.g. herbal grazing ley mixtures alongside triticale, flax, quinoa, buckwheat, and hybrid barley and rye;
- uncovering the benefits of protein crops, including lupins, peas, beans, lentils, chickpeas and soya;
- showcasing research into the genetic control of yield, yield components, disease resistance and quality traits in cereal crops using new plant breeding tools and technologies to help shape the future of our crops.

Groundswell – 1-2 July 2026

Groundswell is the UK's premier event for regenerative and conservation agriculture. With growing interest in soil health and sustainable land management, Niab's data-driven research provides evidence-based insights into regenerative practices. Demonstrations will focus on cover cropping, soil measurement, reduced tillage strategies, rotations and system-wide sustainability approaches with crop demonstrations in large crates. Niab will also be rolling out a varied seminar programme for visitors with short 15 minute presentations throughout the day in the Niab marquee.

Staff profile – Tim Henshaw

tim.henshaw@niab.com

With more than three decades of experience across the agricultural sector, Tim Henshaw is Niab's Technical Manager for Seed Certification, based at Cambridge. He also plays a vital part in training the next generation of crop inspectors.

What does your role involve?

I joined Niab in 2018 as a technician in the crop characterisation team. Moving to Niab allowed me to combine my practical agricultural background with technical and regulatory work and I transferred into my current position the following year.

Now my role primarily involves managing seed certification. This requires communication with all aspects of the seed trade and the Animal and Plant Health Agency (APHA) giving technical advice and application of the seed marketing regulations. I also cover trial and rotation planning as well as plot agronomy. I am a fully qualified seed crop inspector and deliver training for crop inspectors across all species groups, both as a lecturer and co-ordinating exams and course plots. I enjoy the challenge of making technical information accessible and relevant, and ensuring inspectors are well prepared for the demands of the role.

I am chair of the Herbage Seed Technical Working Group, facilitated by Niab in collaboration with Defra and APHA. This involves contributing to wider industry discussions around herbage seed production and standards. It is an opportunity to share practical experience, feed into technical guidance, and help shape best practice across the sector.

What most excites you about your role?

I enjoy being part of the team at Niab – we work closely together to get things done and support one another. I find it rewarding to share my experience, help colleagues, and contribute to building skills across the team, the organisation, and the wider agricultural industry.

How has your career led to Niab?

I have more than 30 years' experience in the agricultural industry. I started working on farms before leaving school and steadily gained experience across a range of roles, eventually progressing to management level.

I worked for several years as a technician at the University of Cambridge Veterinary School within the farm animal department. I was involved in teaching students about practical aspects of cattle lameness and lambing protocols. That experience developed my teaching skills, which has proved invaluable in my current training responsibilities at Niab.

What qualifications do you hold?

I hold an HND in Agriculture. While formal qualifications are important, I think the combination of education and long-term practical experience has been key to my career.

What motivates you looking ahead?

I really enjoy being part of a supportive team, where I can share my experience and help colleagues develop. I find it especially rewarding to uphold high standards across the industry while supporting people at the same time, balancing both is what keeps the work engaging and meaningful.

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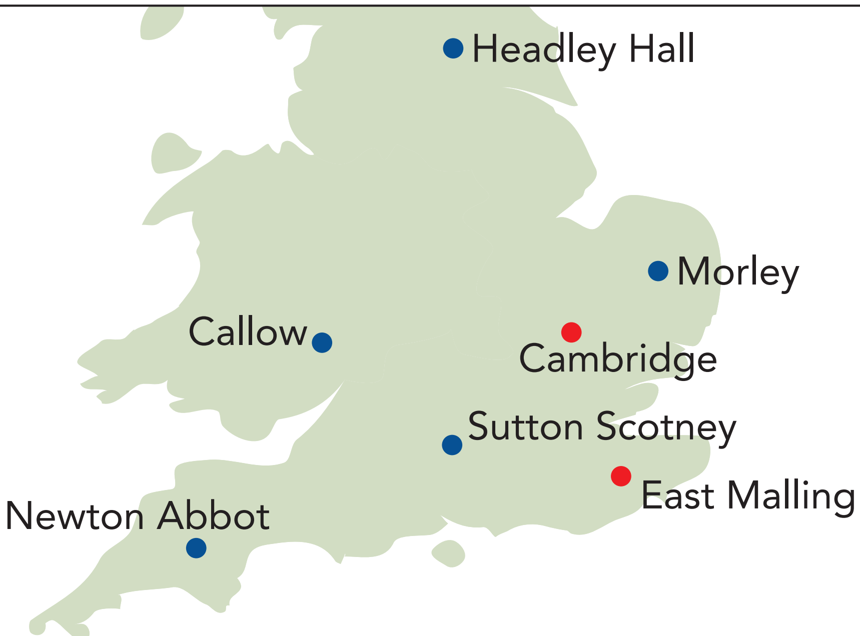

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