

For farmers and their agronomists



CPM

CROP PRODUCTION MAGAZINE

July 2026

BYDV SURVEY RESULTS

Your thoughts on the
aphid-vectored virus

VARIABLE RATE NITROGEN TRIALS

What VR actually
delivers for you

EVENT REPORTS

Highlights from Cereals
and Groundswell

WILDLIFE SENSORS

Helping to quantify
biodiversity



The boomerang break crop

Until recently, the future looked far from bright for oilseed rape. However, with two seasons of improved performance under its belt, will you be rolling the golden dice once more? We look at tips and tricks for improving the odds.

£10
Where
sold



Fundatis®

herbicide

FMC

powered by
ISOFLEX® active



Every farmer's new favourite colour

HERBICIDE

- Fundatis® brings two new active ingredients and one new mode of action to the autumn cereal herbicide market
- Effective control of a wide range of grassweeds and broadleaved weeds in winter wheat and winter barley
- For more information on Fundatis®, please scan the QR code

Fundatis® herbicide powered by Isoflex® active contains 200g/L bixlozone and 125 g/L beflubutamid. Use plant protection products safely. Always read the label and product information before use. Unless otherwise indicated, trademarks with ® or ™ are trademarks of FMC.

 @FMCagroUK

 FMC United Kingdom and Ireland





“Regardless of regulatory change, farmers will always require effective weed control”



POINT OF VIEW

There are numerous exciting developments in agri-tech at the moment. However as farmers know, many of the fundamentals stay the same, like the challenge from pests, weeds and diseases. Even with advancing technology such as image-sensing, robotics and biologicals, herbicides still have a pivotal role to play in weed control in the years ahead.

Getting future-ready depends on investing in research and innovation in the here and now. From identifying a promising compound to bringing an approved herbicide to market, can take a decade or more. Along the way, there's a host of work in the laboratory, glasshouse, field trials, plus the intricacies of the approval and registration system; it's a long-term commitment. R&D teams are looking ahead, already thinking about farming in 2040 so that products meet farmers' needs and regulatory requirements in the future.

While long-term innovation is essential, many farmers are understandably focused on more immediate challenges. Concerns are centred on the economic and political developments affecting them, first and foremost; costs and profitability. Closely followed by regulatory change, particularly the UK–EU SPS agreement.

In leaner times, cutting costs on the crop protection programme can seem an easy place to start. When doing this, you should ask whether you can maintain the same level of protection and output with a lower total spend. Even a small drop in yield can make any savings illusory.

In my opinion, the bigger picture is that using herbicides from a research-based company, such as Bayer Crop Science, helps support ongoing investment in the research and development of future crop protection solutions. Some sales income is reinvested in innovation, leveraging global scientific expertise with field

knowledge of specific challenges such as blackgrass in the UK and Northern Europe. While also supporting existing chemistry with field trials and demonstrations to give farmers and agronomists valuable information for making crop protection decisions.

The full details of proposed UK–EU SPS agreement are as yet unknown. However, the working assumption is that harmonisation of rules around plant protection products means that during the next couple of years, the UK will lose some products currently available.

Regardless of future regulatory change, farmers will always require effective weed control. Supporting investment in research, innovation and practical field knowledge is vital to ensure farmers have the tools they require today, and tomorrow.

By Jamie Oakley, Bayer technical specialist – herbicides. Jamie offers 15 years' experience of field trials, including 10 years with Bayer.



**CROP PRODUCTION MAGAZINE –
FOR FARMERS AND THEIR AGRONOMISTS**



Your subscription will be suspended

Your *CPM* subscription will be deactivated unless you re-register immediately. If you have, please ignore this message. If you haven't updated your details in the past six months, you must act now to avoid losing access. We're updating our subscriber database to ensure *CPM* reaches the right people with the most relevant content and inactive accounts will be removed.



RENEW YOUR SUBSCRIPTION TODAY!

Update your details now at:
www.cpm-magazine.co.uk/renew

Takes 5 minutes ● Completely FREE ● Essential for your business



Could new winter oat variety
Rannoch convince growers to
finally switch from Mascani?
P.42

July 2026

COVER STORY

- 9 Are you a fan of OSR?**
We look at the crop's prospects.



OPINION

- 3 Point of View**
In the guest spot this month is Jamie Oakley from Bayer.
- 30 Soapbox**
He's back with more musings, over to you, Guy Smith.
- 51 Nature Natters**
Martin Lines shares his thoughts on new talent.
- 70 Talking Taties**
A field update from Yorkshire farmer, Andrew Wilson.
- 75 Last Word**
The latest scribbles from CPM's editor Janine Adamson.

AGRONOMY

- 9 OSR new season**
The latest agronomic and trade advice for successful establishment of OSR – this season's comeback crop.
- 14 Pod sealants**
How a chance prize win enabled one Norfolk OSR grower to explore a drone application of Pod-Stik.
- 16 Innovation Insight**
A year since the launch of Fundatis

and the herbicide seems to be finding its place in programmes.

- 19 Common Ground**
We weigh up the value of herbicides versus potential yield penalties from cutting back, for this month's discussion.
- 22 Seed treatments**
Although seed treatments are crucial to early plant growth, are they still worth the money? We find out.
- 26 Tech Talk**
With foliar diseases hogging the limelight, could take-all be waiting in the shadows ready to cause yield loss?
- 28 Variable rate trials**
According to new findings from ADAS, variable rate N delivers only small yield, margin and environmental gains.
- VARIETIES**
- 31 BYDV survey**
The results from our latest survey with RAGT which explores your thoughts on barley yellow dwarf virus.
- 34 Productivity matters**
Is the highest-yielding wheat option



What Alan Bold thinks of FMC's Fundatis P.16



Why growers shouldn't let take-all take all. P.26

always the most productive? We consider what productivity really means.

37 Insider's View: Wheat

Two new high-yielding Group 4 wheat varieties fighting for prime positions to become on-farm favourites.

40 OSR innovation

Introducing Dompteur – the OSR topping the Recommended List for gross output, while offering much more.

42 Insider's View: Oats

Can the latest winter oat variety entice growers away from Mascani and add diversity into the market?

ROTATIONS

45 Cover crops

Research from ADAS investigating the role of cover crops in reducing the carbon footprint of arable systems.

TECHNOLOGY

48 Wildlife sensors

How wildlife sensors are helping growers to quantify on-farm biodiversity and evidence positive change.

EVENTS

52 Groundswell report

We report from farming's favourite festival to share the latest learnings from the world of regenerative agriculture.

56 Cereals Event report

It proved the naysayers wrong – Cereals at Jeremy Clarkson's Diddly Squat Farm was a hit and we share why.

RURAL

59 Rural crime

Why organised criminal networks, fragmented policing and under-reported offences are shaping countryside crime.

MACHINERY

62 Cultivation equip and ploughs

How a Yorkshire grower has improved on-farm efficiency by scaling back his cultivator to a smaller machine.

68 Balers

Manufacturers are developing designs that put more into each package for faster workrates and fewer bales per-field.

ROOTS

71 Potatoes

Whether new product innovations could play a role in helping potato growers to manage the effects of drought.

FOR ALL THE LATEST NEWS

Visit cpm-magazine.co.uk



CROP PRODUCTION MAGAZINE

July 2026
Volume 28 No 6



Through the months, years and seasons, CPM continues to strive to present facts over fiction.



**Of all arable
hectares in
the UK**

Crop Production Magazine is published ten times a year and is available free of charge to qualifying farmers and farm managers in the UK. This is the criteria for a free subscription.

- 75ha+ cereals
- and/or 30ha+ oilseed rape
- and/or 15ha+ potatoes
- and/or 15ha+ sugar beet
- and/or 10ha+ fieldbeans/peas

Call 01743 369707 or email angus@cpm-magazine.co.uk and we'll put you on the list

Editor

Janine Adamson

Sub editor

Rachael Harper

Writers

Mike Abram, Charlotte Cunningham, Rob Jones, Martin Lines, Martin Rickatson, Mike Saull, Guy Smith, Andrew Watts, Andrew Wilson

Design

Rob Terry

Production manager

Kerry Orriss

Commercial director

Angus McKirdy

Managing director

Fiona Mercer

Advertising sales

Tel: +44 7801 288443 E-mail: angus@cpm-magazine.co.uk

Editorial

E-mail: janine.adamson@kelsey.co.uk

Customer Service

Kelsey Media, Media Centre, Morton Way, Horncastle, Lincolnshire, LN9 6JR, United Kingdom

E-mail: cs@kelsey.co.uk

Tel: 01959 543 747

Reader registration hotline

01959 541444

About Crop Production Magazine

Crop Production Magazine is the leading specialist journal for UK arable farmers and agronomists.

The magazine operates within a controlled circulation with a readership including farm managers, agronomists, machinery dealers and other arable supply industry professionals.

CPM is also distributed to agricultural universities, colleges and research institutes, examined by some of the leading researchers in their field as well as the next generation of crop specialists.

Above all, the magazine is read by UK farm business owners – decision makers. Articles are mostly in-depth and analytical, exploring the issues behind a current

problem while aiming to present new ways of thinking.

The magazine doesn't seek to prescribe solutions, rather inspire, stimulate and inform.

CPM is proud to represent some of the most experienced agronomic, technical and machinery journalists, many of whom have received British Guild of Agricultural Journalist awards for their contributions.

The team works closely with companies that support *CPM* to gather inside knowledge on the technical issues that affect farmers and the wider food chain. Although small, *CPM* is managed by a driven team, responsible for delivering the sharpest insight and most relevant information across both print and digital formats.



ORIGIN
SOIL NUTRITION

OEN
protected urea

ORIGIN ENHANCED NITROGEN is more than a protected urea. It is proven to reduce nitrate leaching as well as ammonia and nitrous oxide emissions, and is available in a range of nitrogen, NS and NPK grades.

- Contains NUTRISPHERE®, a unique carboxylic carbohydrate
- Yield performance consistently equal to or better than nitrates across a wide range of crops and soil types¹
- Reduces ammonia losses by over 80% compared to urea²
- Reduces nitrous oxide emissions by over 50% compared to nitrates³
- Reduces nitrates losses by over 45% compared to nitrates⁴
- Zero impact on the reproduction of earthworms and freshwater fish mortality⁵
- Stable in NPK blends, plus a shelf life of 12 months⁶
- Can be applied after 1st April under Red Tractor Assurance Scheme



1. Trials in Europe, Ireland, GB and Iceland

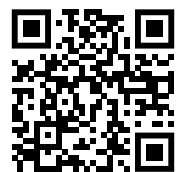
2. GB ADAS field study 7 and 14 days and Ireland UCD lab study

3. California Dept of Food & Agriculture

4. NIAB TAG and John Innes Centre, GB

5. Eurofins Ecotoxicologie France and Eurofins Expertises Environnementales France

6. Verdesian long-term trial



ORIGIN
SOIL NUTRITION

t: 03333 239 230
e: enquiries@originsoilnutrition.co.uk
www.originsoilnutrition.co.uk



NUTRISPHERE® is a registered brand name of Verdesian Life Sciences US

Play the **#BlackgrassGame**

Share. Collect. Win.

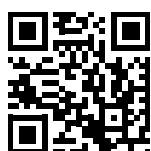


Post a photo of your crop or farm on  LinkedIn,  Instagram or  Facebook, tag UPL UK and include **#BlackgrassGame** to receive a FREE branded rugby ball.

PLUS, each ball collected gives you an entry into our prize draw to **WIN FOUR TICKETS TO THE NATIONS CHAMPIONSHIP FINAL** at Twickenham, this November. Collect all four – Centurion Max, Xerton, Quidam and Sempra XL – for up to four entries per person.

Build your collection and WIN big this autumn.

Terms and conditions apply, see website for details.



Learn more at
www.upl-ltd.com/uk



"There's an old adage that when OSR seed is twice the value of feed wheat, it's a good sell."

NICK HOBSON

The comeback crop

Oilseed rape, at least on paper, is appearing to be a good break crop option again. *CPM* looks at the economics and latest advice for successful establishment.

By Mike Abram

Following a decade in the doldrums, oilseed rape appears to be making a comeback, and while economics are a key driver, confidence in successfully growing the crop seems to be rising.

This is backed by Andersons' latest crop area forecast, which estimates the current planted area has risen 22% year-on-year to an estimated 306,000ha. That's lower than AHDB's planting and variety survey, which estimated 358,000ha, although some believe this may be overzealous. Perhaps equally as important is AHDB's late May crop condition report, which suggested

78% of crops were good or excellent.

Despite the recent uplift, the area remains far below the pre-neonicotinoid ban era when up to 755,000ha was planted, and still less than the 391,000ha grown in 2023 when prices spiked following the start of the war in Ukraine.

IMPORT RELIANCE

Subsequently, the reduced area has left the UK in an emergency situation with edible oil food security – dropping to just 15% – and imports costing the nation approximately £1bn annually in net trade, according to United Oilseeds managing director, James Warner.



Food security crisis

The reduced OSR area has left the UK in an emergency situation with edible oil food security – dropping to just 15%, highlights United Oilseeds' James Warner. ►

NEW!



DAYMON

Hybrid Oilseed Rape

- High Yields.
- Phoma blocker – dual phoma resistance.
- Pod shatter resistance.
- Excellent LLS resistance.
- High oil content.
- Proven consistent performance across Europe.



Innovation for
your growth

dsv-uk.co.uk

Confidence to go for it

Reasons behind two growers' decisions to go for gold with OSR

With a lack of break crops and a demand for alternative herbicide active ingredients, Essex grower Ed Ford has made the decision to go back to OSR after a decade away from the crop.

For one, brome is becoming a challenge on parts of the farm, especially where there's been a continuous wheat rotation. "The plan for next year is to take out 110ha of 11-year continuous wheat and replace it with OSR.

We can't control brome in these areas, and because we've been OSR-free for such a long time, it should be like growing it on virgin ground," he explains.

A key benefit is bringing OSR back into the rotation provides additional potential options for grassweed control in Kerb (propyzamide) and Centurion Max (clethodim), adds Ed.

Then looking at his wider approach to growing OSR, he says he's unlikely to drill early. Straw will be removed from the previous wheat crop and sewage sludge will then be applied, incorporated with a pass from a Väderstad Carrier.

"And then we'll wait for moisture, there's no point drilling without it. So we'll wait for rain and the right opportunity. With our 12m Horsch Avatar, we should be able to drill 110ha in a day."

At this stage, other than selecting a hybrid, he's unsure of exactly what variety. "I'm a little out of touch," he admits. "But we'll probably try one of the establishment schemes where there's financial compensation if the crop fails."

Returning to OSR should



Herbicide options

A key benefit from bringing OSR back into the rotation is additional potential herbicide options for grassweed control, suggests grower Ed Ford.

Photo: BASF

► "We have a strong domestic demand and a crushing industry ready to process, but now we're importing more than half of the OSR we consume," he highlights.

With around 2m tonnes of demand for UK OSR, current production of around 1m tonnes means the country is structurally short. However, increasing the area, certainly back to neonicotinoid era heights, risks inviting back pests like cabbage stem

flea beetle to levels that make establishing crops even more challenging.

That conundrum has led industry campaign group 'OSR Reboot' to set a target of around 500,000ha as the optimum for sustainable UK OSR production, notes Liam Wilkinson, head of technical for Limagrain. "It's unusual for an industry to be setting limits, but the reality is we don't want too big an area as that's when problems begin."

reduce nitrogen fertiliser spend a little too, he hopes. “We put 280kgN/ha on our continuous wheat to reach milling quality, whereas we’ll probably apply a maximum of 200kgN/ha on the OSR. Our soils are likely to be fairly high in nitrogen because we’re not growing high yielding wheats, plus there’ll be some residual from the muck.”

Over in Nottingham, Joe Fisher is looking to expand the farm’s OSR area, having returned to the crop last autumn. He explains that some poor OSR yields in the early 2020s – partly due to high cabbage stem flea beetle larval loading reducing spring vigour – meant he moved away for a couple of years. However, he dipped his toe back into OSR with 20ha for this current season.

“The crop is looking reasonable heading into harvest, so we’re looking to increase that four- or five-fold for Harvest 2027,” he says.

Recognising his previous struggles with spring larval infestations, he drilled this year’s crop in September. “I applied some digestate ahead of it, then planted some Campus with a Claydon drill.”

With optimum establishment conditions autumn growth was strong, and with minimal pressure from slugs and pigeons, the crop looks promising,



Worthwhile gamble

Nottinghamshire grower Joe Fisher dipped his toe back into OSR last autumn and says the crop is looking promising.

he says. “I doubt it’ll be record-breaking but if we can yield 3-3.5t/ha, the margin will be reasonable, not outstanding, but better than other options.”

Next season’s expanded area will replace some land currently in environmental schemes where the future is uncertain, as well as beans, and some maize on heavier ground.

He’s planning to stick with farm-saved Campus seed, and supplement it by buying in any additional requirements. “We’ll drill with a companion crop of berseem clover, fenugreek and buckwheat, which acts as a failsafe if the OSR doesn’t come to a lot – you already have your cover crop in ahead of redrilling a spring crop,” concludes Joe.

SOUND PROSPECTS

Economically, the crop’s prospects look positive, even if Australia looks to be heading for a record crop. This is because OSR has been trading around 2.7 times feed wheat value during the past year, says United Oilseeds’ Nick Hobson, with price supported by global energy instability in the Middle East and biofuel mandate demands.

“There’s an old adage that

when OSR seed is twice the value of feed wheat, it’s a good sell,” he adds.

Contracts of around £415/t delivered, which oil bonuses could potentially push into the region of £450/t for 2027 harvest, were available in June, and the possibility the crop could be the best performing option on farm, beating first wheats, he says.

But that’s dependent on establishing the crop, with CSFB remaining the primary concern for



Nothing protects your Take-all decisions like Latitude.

Soil type, seed rate, crop rotation, weather conditions. There are so many factors to consider to minimise your Take-all risk. Latitude, the *only* Take-all seed treatment, greatly helps implement an appropriate IPM strategy for your winter cereals.

You’ll get proven Take-all reduction backed by 25 years’ data and experience, to ensure you make optimum decisions. That way, you can look forward to a potential 0.55 t/ha yield increase, together with maximum quality.



Get the best return with Latitude. Use our valuable tools at certisbelchim.co.uk/latitude-calculators



Certis Belchim
GROWING TOGETHER

Use plant protection products safely. Always read the label and product information before use. For further information with regard to the warning phrases and symbols refer to the product label. Latitude® (MAPP 18036) contains silthiofam and is a registered trademark of Certis Belchim B.V. Contact Certis Belchim on 0845 373 0305, e-mail info.uk@certisbelchim.com or visit www.certisbelchim.co.uk. © Certis Belchim 2026.

- many growers, although weather, slugs, pigeons and some other pests all potentially impact success.

As such, choose carefully where OSR

is grown, advises Indigro agronomist, Damian McAuley. "We know CSFB come in from neighbouring fields, so if you can, maintain some sort of geographical distance from previous OSR crops."

Swedish research suggests distances of at least 0.8km, although that might not be practical on many farms,

especially where OSR is grown every season. "If you have management of those fields, then early cultivation disrupts flea beetle pupae before they emerge," says Damian.

Research into the life cycle of CSFB

"If you're looking to apply nitrogen, concentrate it in the smallest area possible around the seed."

has revealed that the majority pupate within the top 30mm of the soil, so cultivation doesn't have to be deep.

NIAB / AHDB trials have shown at least 50% reduction in flea beetle numbers, although previous research found in excess of 3m adults emerge from soil per hectare



Finding the sweet spot

According to Limagrain's Liam Wilkinson, it's unusual for an industry to be setting planting limits, but the reality is problems began when the OSR area was too large.

Any cultivation should be weighed carefully against moisture loss, notes Damian. "Direct drilling is better for establishing a crop because it helps to retain moisture."

Furthermore, direct drilling into established cover crops, for example coming out of environmental stewardship schemes, can also help to trap moisture, adds Liam, while zero-till can help to visually mask emerging OSR plants from CSFB, that seem to be attracted by a green-on-brown background.

There's also debate over the role of companion crops. Liam believes they can be detrimental as they compete for moisture, while others suggest growing companions like berseem clover, buckwheat and fenugreek help to mask the crop.

COMPANION BENEFITS

Cambridgeshire farmer Tom Martin is in favour, partly because of fenugreek's curry scent reputedly disguising the attractive cabbage smell for CSFB, while Damian points to berseem clover's ability to potentially fix 10kg/ha of nitrogen, as well as support soil biology, including mycorrhizal fungi that don't thrive in brassica crops. "Some will be getting a payment of £55/ha if you're in an SFI option too," adds Damian.

Early nutrition is helpful for achieving good establishment, he stresses. Positive impacts from organic sources such as digestate or poultry manure, can help to mask the smell of OSR

nos **Beast** WINTER WHEAT



is coming!

NOS Beast is a very high yielding feed wheat, with an outstanding disease package and excellent grain quality

from CSFB, says Damian.

Equally, Liam advocates placing fertiliser. "If you're looking to apply nitrogen, concentrate it in the smallest area possible around the seed so you get the biggest bang for your buck from your NVZ regulation limits."

As for drilling date, there are two schools of thought – early to get crops established before the main

migration of adult CSFB, or delaying until after that's happened, although the consensus is soil moisture is more

important than drilling date.

Whichever is chosen, management decisions should be tweaked. For example, while seed rates can be reduced when drilling earlier with better plant establishment, the result can be thicker canopies too, explains Liam.

"That might mean thinking about growth regulator products in the autumn. If you have a big canopy and leave it until

spring, it's too late. You have to be proactive."

Earlier drilled crops will have different disease susceptibility to the ratings on the AHDB Recommended List too, he highlights. "Light leaf spot becomes the most important disease in early drilled crops because you'll likely have thicker canopies."

Like yellow rust in wheat,

the disease cycles quickly, but it's the later stages when it infects stems and pods that cause

yield loss. Therefore, early control, even if resistance to fungicides is increasing, should be the aim.

Equally, weed control can be more challenging in early drilled crops, as fewer plants will be controlled with glyphosate applications. "That could lead towards Clearfield varieties if you know you have problem weeds that aren't controlled using a stale seedbed," concludes Liam. ●

"If you can, maintain some sort of geographical distance from previous OSR crops."

Could silicon be the answer?

Thinking outside the box for CSFB control

As well as utilising no-till and companion cropping, Cambridgeshire grower, Tom Martin, has been using a silicon-based biostimulant as part of his strategy to beat cabbage stem flea beetle.

Applying Soil Fertility Services' Vita-Protect at two true leaves at 3 l/ha, with a second dose at 5 l/ha when there's a 'decent sized target', the product's silicon content helps to improve cell strength and

plant rigidity, explains Tom.

"That's really helpful in decreasing the palatability of the plant," he suggests. "But there's also some microbial bacterial elements within Vita-Protect that interfere with the digestive system of CSFB."

"I'm not sure how far that goes as it doesn't kill the beetle, but we haven't lost an OSR crop in the 8-10 years we've been using it, alongside other cultural measures," points out Tom.



PROVEN ON FARM

“LG Avenger’s spring growth has been markedly quicker than some other varieties - it has all traits we would consider essential when selecting a variety, as well as a high oil content.”

**Ben Jackson,
Lincolnshire**



LG AVENGER FULLY LOADED HYBRID

The world's highest yielding
oilseed rape variety



lgseeds.co.uk/lg-avenger



Reaching new heights to protect pods

Thanks to advances in technology and creative thinking, applying certain crop management products by drone is beginning to become a reality for UK farmers. *CPM* explores how a chance prize win enabled one Norfolk oilseed rape grower to explore the concept further.

By Janine Adamson

Winning a drone application of pod sealant at Lamma show wasn't just a chance for Norfolk grower Joe Mitchell to play with some new technology. Instead, it was an opportunity to see if the concept actually works in practice, in a real-farm situation.

In a pivotal moment for all involved, Pod-Stik was applied from the skies to a field of oilseed rape at High House Farm near Great Yarmouth – a 225ha mixed enterprise comprising 150ha of arable cropping, a large free-range poultry unit, beef cattle and sheep.

Having grown OSR for around a decade, Joe says the endeavour involved his 'best OSR crop for many years' – a stand of LG Academic drilled in early September 2025. He mainly puts its performance down to a focus on establishment.

"Establishment is everything – if you don't get the plant numbers right, you won't get the yield," he says.

This year, he says the stars aligned, having drilled the crop into favourable

conditions following an application of poultry manure. "We're trying to give it the best start possible – good moisture, the right seed rate, and getting it away quickly.

"It's probably the best OSR we've had for a long time. It's thick, even and it's podded all the way through."

However, with that potential comes increased risk, he notes. "By this stage, a lot of the yield is already there. Then it's about protecting what you've built."

Technical business manager for De Sangosse, Stuart Sutherland, says this final phase remains one of the most vulnerable points in OSR's lifecycle. "It's inherently at risk right up until harvest," he continues. "Pod shatter is one of the primary causes of pre-harvest loss.

"Environmental stress plays a central role, with wetting and drying cycles, wind and crop movement all placing pressure on the pod seam. But once pods begin to split, losses can escalate very quickly – and that yield is unrecoverable," stresses Stuart.

"If it helps you to get the timing right and protect the crop without damage, then it's worth considering."

JOE MITCHELL

This is something that Joe has experienced first-hand. "You only need a bit of wind or movement through the crop and it can start to go. And once it starts, you can't stop it," he comments.

Already familiar with Pod-Stik, the product has been part of Joe's OSR programme since he began growing



Preserving pod potential

At the final stages of an OSR crop when a lot of yield is already present, it's then about protecting what's already been built, says grower Joe Mitchell.



From theory to farm

Enabling real on-farm use will be key in the adoption of drone application technology, urges De Sangosse's Stuart Sutherland.

the crop. Initially recommended to him by neighbouring farmers and his agronomist, Joe believes its role is becoming more important.

"With the uncertainty around the future of pre-harvest glyphosate and how crops are managed before harvest, there's a chance they'll be standing longer. That means more exposure to the weather and greater risk.

"We had a crop that didn't get desiccated and it stood much longer than expected. It wasn't combined until mid-August and that's a long time for pods to be exposed," he explains.

From a technical perspective, Pod-Stik works by forming a flexible polymer film across the pod surface, reinforcing the pod seam (dehiscence zone) – the point where pods naturally split.

"By strengthening that weak point, you reduce the likelihood of the pod opening under stress," adds Stuart. "In OSR, we're targeting crops at BBCH 80-82 when pods are fully formed, green and bendy. That allows you to protect yield before the main stress period begins."

Pod-Stik can be applied either as a standalone treatment or alongside glyphosate within a desiccation programme, although earlier standalone application is often preferred.

"I used to apply it with glyphosate, but I now think that's too late," highlights Joe. "If you want to protect what you've grown, you have to be ahead of that timing in an ideal world."

However, drone application introduces an opportunity to apply the product without driving through the crop. "Because glyphosate isn't currently approved for application by drone, pod sealants have to be applied as a

standalone treatment," reminds Stuart.

Broadly speaking, plant protection products aren't currently approved for application via drone under UK regulation, however, products such as pod sealants, nutritionals and biostimulants are permitted. This means as challenges increase around the application of pod sealants in OSR – particularly in relation to high-biomass crops – application by drone could address a significant production conundrum.

"The crop last year was more than 5ft (1.5m) tall, and we ended up dragging the boom through it and damaging the sprayer," explains Joe. "That's the last thing you want to be doing when pods are vulnerable."

Stuart says enabling real on-farm use will be key in the adoption of the drone application technology. "It's about developing approaches growers and agronomists can use with confidence," he comments.

The drone application at Joe's was undertaken by Rural Drone Services, part of the AutoSpray Systems Pilot Network of CAA-certified drone pilots. Using RTK-guided mapping, the 8.3ha field was treated in approximately one hour, applying 1.0 l/ha Pod-Stik in 50 l/ha water at a flight height of around 3m and a forward speed of 11m/s.

The key is balancing all of those factors, notes Stuart. "Pod sealants rely on forming a robust film – effectively a row of staples down the pod seam. So achieving good, even coverage is critical."

While the endeavour was successful and undoubtedly exciting, Joe believes it won't replace conventional spraying, rather add flexibility where required. "If conditions are right, you'll still use the sprayer. Then if it turns wet, or you have areas you don't want to travel on, then this makes sense. Why make ruts that last for months if you don't have to?"

His pragmatism continues: "It's very easy to fall in love with the technology, but you have to ask – is it actually the right solution?"

"If it helps you to get the timing right and protect the crop without damage,



Collaborative endeavour

The trial at High House Farm near Great Yarmouth was the result of a competition win offered by De Sangosse in partnership with Rural Drone Services and AutoSpray Systems.

then it's worth considering," he says.

With this laying solid foundations for the future, Stuart believes there's potential beyond OSR. "In beans, the opportunity could be even greater. Pods mature from the bottom up, and the earliest pods are the most exposed to stress and shatter risk. That creates a wider window of vulnerability; you effectively have part of the crop at risk while the rest is still maturing," he explains.

According to Stuart, what this demonstration shows is that drone application is beginning to move beyond concept, offering a practical way to overcome limitations around access, timing and crop damage at a critical stage.

As for Joe, his approach remains simple: "If you can protect the crop at the right moment, that's what makes the difference," he concludes.

Growers interested in pod sealant use or drone application options can contact De Sangosse for further technical guidance, or visit the AutoSpray Pilot Network on the AutoSpray Systems website. ●

Watch a short video of the application here:



Sponsor's message

CPM would like to thank De Sangosse for sponsoring this article and for providing privileged access to staff and the material used to help bring it together.

DE SANGOSSE
by DSG

Bringing more activity to the programme



“In situations where I’ve used Fundatis plus cinmethylin we seem to have achieved an improvement in control compared with the previous year.”

LUCY TAGGER

For those with a zero tolerance approach to grassweeds, Fundatis is beginning to find its place in hard-hitting pre-emergence sprays. *CPM* explores why and where growers are including the herbicide in their weed control programmes.

By Janine Adamson

It’s nearly a year since Fundatis, powered by Isoflex active, was first unveiled to the GB market. And now, with some user experience under its belt, its true benefits are coming to light.

In fact, reports suggest it’s performing even better than initially anticipated, reveals FMC senior commercial technical manager, Mat Hutchings. “Particularly for blackgrass control, growers have shared

that it’s exceeded their expectations.

“We know that it performs well on ryegrass too, where it brings even more activity, which is especially useful in winter barley where there are fewer registered herbicide options,” he says.

Fundatis contains bixlozone (Isoflex active) and beflubutamid, and at the point of launch, both were new active ingredients for the GB market. As



Exceeding expectations

Reports suggest Fundatis is performing even better than initially anticipated, highlights FMC’s Mat Hutchings.

well as offering good activity against blackgrass and ryegrass, Fundatis also targets a range of broadleaf weeds including groundsel, mayweeds, red-dead nettle and speedwells.

In terms of application timing, it can be applied to winter wheat at both pre- and post-emergence, as well as pre-emergence in winter barley.

Where it appears to be finding a niche is in scenarios where grassweed burdens are high and the appetite for risk is low, notes Frontier Agriculture's Mark Lancaster. Mark, an agronomist who advises across Berkshire and southeast Oxfordshire, says this is the case for quite a few of his farms.

"We have some serious blackgrass and ryegrass issues in this area, meaning we have to go all-in with robust pre-emergence sprays. Growers require the reassurance that if they can't return through the crop with a peri- or post-em – which isn't guaranteed – then they'll be adequately covered until the spring."

Following the launch of Fundatis, Mark adds that he was keen to explore whether it poses a valid alternative to tri-alleate, when mixed with cinmethylin. "Every penny counts and exchanging for Fundatis not only offers a small cost benefit to the grower due to potential contractor savings, but it's also tank-mixable so convenient compared with the granular variant of tri-alleate."

Having used the product last autumn, he believes in blackgrass situations, crops appear visually clean, even where wheat was drilled early. "I also used a Fundatis plus

cinmethylin pre-em at one farm with high ryegrass pressure. The land is heavy and it's too much of a gamble to risk relying on a post-em top-up.

"While the crop certainly isn't clean, I believe the pre-em combo has reduced the pressure to a more manageable population that won't impact yield as severely," he explains.

Hitting grassweeds hard at pre-emergence is also a primary tactic for Doncaster arable farmer, Alan Bold. Similar to Mark's growers, he says going back a step with blackgrass simply isn't an option.

"Getting pre-ems on in a timely and well-applied fashion is a priority, otherwise, blackgrass will soon be out of control. We're on strong land here and it's very unforgiving, you have to be firm. It's like a naughty child – you can't take your eye off it; it's a daily job," he laughs.

Farming just over 80ha of winter wheat, winter barley, spring barley and grassland, Alan recognises that much of the farm's grassweed pressure is driven by soil type and topography. "There's a lot of blackgrass in the local area it seems, it thrives in low, wet pockets of ground. Last year with the dry spring, there were notably less weeds across the farm.

"Equally, because we're on low-lying land, we can have some keen frosts which means getting spring-applied contact herbicides on can be difficult. With wind, frost, heavy rain and then hot temperatures – sometimes all in one week – there can be few spray days.

"Therefore we find pre-emergence chemistry delivers a lot more for us than



Finding its place

Where Fundatis appears to be finding a niche is in scenarios where grassweed burdens are high and the appetite for risk is low, notes Frontier Agriculture's Mark Lancaster.

contact-based products," he explains.

Working with his agronomist Lucy Tagger from Frontier Agriculture, Alan also used a Fundatis plus cinmethylin combo across his crops last autumn, again in a bid to reduce contractor costs. This was followed by Incelo (mesosulfuron-methyl+ thienencarbazone-methyl) in the spring. "It appeared to work well," he says. "I think the conditions worked in our favour – seedbed moisture in the autumn helped with the uptake of the chemistry."

However, while the farm is open to trying new herbicide options, Alan recognises the importance of a rotation-wide approach to weed control. For one, having noted his neighbours' varying successes with min-till, Alan says he continues to plough to bury the blackgrass seed-bank, as well as mole drain every three years.

"Then, we try to delay drilling until early October, although being on heavy land that can be a bit of a gamble," he comments. "But we drill as late as we can push it, to allow a decent stale seedbed before spraying the weed flush off with glyphosate.

"We also switched over to hybrid 6-row winter barley for its vigour and competitiveness. It smothers



Zero tolerance

Hitting grassweeds hard at pre-emergence is a primary tactic for Doncaster arable farmer, Alan Bold.

► the weeds out,” explains Alan.

While weed control is currently looking good at the farm, he acknowledges that it doesn't take much for the situation to change. “You think you're on-top of it all and then you get a wet year and blackgrass is back. It can be really disheartening when you try to do it all by the book yet it comes back to bite you. We just have to keep going and persevere,” he says.

Lucy agrees that even with minimal weed counts, action has to be taken. “I don't think you can ever over-react with blackgrass,” she suggests. “But in situations where I've used Fundatis plus cinmethylin, even in high pressure areas, we seem to have achieved an improvement in control compared with the previous year.”

As well as advising in west Yorkshire, Lucy also looks after farms across the Yorkshire Wolds. She adds that in the Wolds, broadleaf weeds can be problematic, therefore gaining Fundatis in the toolbox is useful. “While it's not the primary aim of the product, having this additional activity has the potential to reduce reliance on spring herbicide clean-up sprays,” she notes.

Having used the product for a year and received positive feedback from her growers, Lucy says she now has more confidence in Fundatis, particularly given initial concerns regarding its mode of action. This is because Isoflex active inhibits susceptible plants from producing carotenoids – pigments that are essential to light energy capture and photoprotection of chloroplasts during photosynthesis, ensuring normal plant growth. Subsequently, due to lack of chlorophyll production, susceptible plants may show chlorosis and/or bleaching and ultimately die off.

“I've seen minimal crop damage from bleaching, and where there have been crop effects, plants have soon bounced back,” she highlights. “I'm confident to integrate Fundatis into upcoming programmes this coming season; it's a step-up in control compared with what we had before.”

While much focus this year has been on what Fundatis offers blackgrass management, Mat believes this coming season, Fundatis will come into its own with ryegrass. “It does a really good job at combatting ryegrass in wheat, and we expect the product to find its place in those situations, as well as in barley.

“We've also received anecdotal reports that Fundatis appears to work



Increasing confidence

Having seen Fundatis in the field, Frontier Agriculture's Lucy Tagger says she's observed minimal crop damage from bleaching, and where there have been crop effects, plants have soon bounced back.

well in dry conditions, compared with other leading herbicides. The actives within Fundatis have moderate to good solubility and primary uptake of the product is through the developing root of the weed. “We're investigating further, but on-farm user experience is important evidence to support its use,” he says.

According to Mat, the product's label is about to improve too. “We were able to submit further supporting data, so now more weed species will be on the label for this coming season.

“We're also relaxing the voluntary buffer zones that were initially

advised for vineyards, orchards and ornamental crops. Our advice is to still exercise a sensible level of caution and follow the label guidance, but we hope this not only helps growers with those crops, but demonstrates our confidence in the safety of Fundatis.”

Furthermore, FMC has received no significant incidents of crop effects other than transient bleaching, he raises. “It's all a positive story for the product and its stewardship. We're also hopeful to achieve registration for its use in rye and triticale, likely due in 2027,” concludes Mat. ●

Innovation Insight

Formed more than a century ago, FMC continues to serve agricultural, industrial and consumer markets globally by delivering innovative solutions and application systems rooted in science, safety and sustainability.

FMC's latest herbicide solution for the GB market contains Isoflex active – otherwise known as bixlozone – a new mode of action for the control of grassweeds and broadleaf weeds in winter wheat and winter barley.

Isoflex active is from the isoxazolidinone family and has been discovered and developed by the FMC research and development team.

This is partnered in Fundatis with beflubutamid, a new active to the GB market from HRAC group 12, bringing together two novel actives to strengthen weed control and resistance management.

CPM would like to thank FMC for sponsoring this article and for providing privileged access to staff and the material used to help bring it together.



The true cost of grassweeds

“Although there might not seem to be too many blackgrass plants, it’s beneath the canopy where the damage is being done.”

DR SARAH COOK

With cereal crop margins being increasingly squeezed, experts are urging growers to weigh up the value of herbicides on grassweed control versus the potential yield penalties from cutting back. *CPM* tackles the conversation as part of this month’s Common Ground.

By Janine Adamson

Following effective applications of pre-emergence chemistry plus weather conditions conducive to herbicide uptake, weed control last autumn appeared successful for many growers. However, with just one blackgrass plant/m² equating to 1% yield loss, last season’s battle may be won, but the war against grassweeds very much continues.

This is because cumulatively, it takes very few blackgrass plants to create a significant problem. Therefore, with a currently challenging economic

climate for farming businesses, the potential financial impact of grassweeds shouldn’t be downplayed.

To tackle this topic further, *CPM* brings together Norfolk grower, David Hurn; principal research consultant at ADAS, Dr Sarah Cook; and BASF’s business development manager for herbicides, Stuart Kevis.

David oversees 160ha of cropping, comprising winter wheat, sugar beet, spring barley and vining peas. With blackgrass his primary problem weed, David has implemented a robust,

integrated strategy for its control.

INVESTING IN CONTROL

To open the discussion, Stuart asked David whether the investment in weed control was something that he proactively considered. In response, David shared that while herbicide programmes require significant spend, it’s something that has to be tolerated in order to maximise wheat in the farm’s rotation.

“Our soil type will support second and third wheats and we can get good yields. Although I’d like to have a more diverse rotation than I do, the economics of break crops at the minute don’t stack up. Last year we grew a small area of spring barley at 8.8t/ha and it barely scraped a profit due to cost of growing it and poor returns from the market price at that time,” he explained.

To reply, Stuart said he acknowledges ►



Enabling second wheats

Investment in weed control is something grower David Hurn said he tolerates in order to maximise wheat in the farm's rotation.

► that unlike cereal fungicides, it's not so easy to cut back on herbicides. "If you're growing the right varieties that look healthy enough, and disease pressure is low, you can make an informed decision on risk and level of fungicide input.

"But if you have grassweeds, it'll cost no matter what. Firstly there's the price of the herbicide, but then, if you do nothing or cut back, you'll lose yield. There's a balance to consider between how much level of control you're achieving versus the cost of that control – so what the programme is delivering for you.

"Applying something cheap and gaining 70% control for example, might not cost much herbicide-wise, but will cost a significant amount in yield reduction. Equally you can go belt-and-braces and achieve fantastic control with little blackgrass return and minimal yield loss, but it'll involve greater investment."

Sarah highlighted that unlike David, many don't necessarily realise what damage weeds – particularly blackgrass – can do to yields. "Although there might not seem to be too many blackgrass plants, it's beneath the canopy where the damage is being done.

"The roots are competing with the crop for water and nutrients, and they're better than the crop at doing this. There's also the effect of the denser crop on humidity levels and light interception. And there are long-term effects too – seeds can last 7-9 years in the seedbank."

MAXIMISING THE HIT RATE

Recognising that herbicides remain a critical aspect of his cropping inputs, David explained that he's been paying attention to how to get the most from what's applied. For him, this has meant sequencing chemistry rather than creating complicated tank mixes with many active ingredients.

Stuart added that hitting blackgrass as hard as possible, as early as possible, is key. "Research suggests that the first flush of grassweeds is always the biggest flush, although that's not to say other flushes won't come throughout the season into the spring.

"So maintaining a residual layer of control throughout that period is very effective, which is why sequences can work. But where things get difficult is where there's only one opportunity to travel due to inclement weather – that's when people have to go for more complicated stacks.

"However, if you know there's the option to apply a pre-em and then come back with an early post-em residual, trial data shows that this works well. Also, the sequence window does have to be quite tight – in the past this would be 2-3 weeks, but now it's more around 10 days," he explained.

Looking at specific products, Stuart highlighted that trial data also indicates the value of using Luximo (cinmethylin) at pre-em, when the flush of grassweeds is at its greatest. "That gets the best out of Luximo meaning you can use other chemistry such as flufenacet or DFF in an early post-em slot because the pressure on them will be less."

Sarah agreed that cinmethylin is a valuable active. "Use it wisely, at label rates and within the programme where it works best. But don't put all your eggs into one basket – there are other options and a range of actives (and HRAC groups) will help to minimise the development of herbicide resistance."

Adding to this, David said application techniques should be finessed too.

"The quality of the seedbed is so important. If you don't have that for the first application, you won't achieve quite the efficacy. The same goes for nozzle choice too."

Sarah commented: "Whatever you favour, sequencing or stacking, good application is critical – targeting the right growth stage in optimal conditions. Blocked nozzles or missing bouts will be punished severely. Equally, we've been experiencing strange weather patterns which can increase the risk of crop damage from complicated tank mixes so is something to be aware of."

FALSE ECONOMIES

For Stuart, making cuts on chemistry often proves a false economy in the end. "Certainly, if you're letting seed return back into the seedbank, that becomes problematic very quickly. Although there's an optimum target of 95% blackgrass control to just stand still with the seedbank population, achieving this, even in areas with lower weed counts, is a challenge.

"Our trial work indicates you can't



Being proactive

According to BASF's Stuart Kevis, hitting blackgrass as hard as possible, as early as possible, is key.

reliably do this without having Luximo in the programme, unless you're spending more than £150/ha on a heavy stack of other solutions. Plus, all cultural control methods are vitally important.

"And actually, you require good control in all pressures of blackgrass, not just heavy situations, to ensure wheat remains a profitable crop every year. Staying vigilant and using the best chemistry is key – if you look at the impact of poor control on yield, you're better off spending a little more on a herbicide that'll do a better job."

For Sarah, making short-term decisions on weed control will have long-term impacts. "Reducing herbicide rates is not only a false economy, but leads to herbicide resistance.

"Multiple applications of the same active – even if this is allowed under regulation – is against all we've been told, as overdosing also leads to herbicide resistance. Instead, make the most of opportunities to use glyphosate and combine this with added cultivations," she said.

BEYOND BLACKGRASS

Taking a step away from chemical intervention, David highlighted that cultural control methods are critical for not only blackgrass management, but in helping to keep Italian ryegrass at bay. "We don't have the weed at the moment, but I'm conscious it could easily come in.

"We have a 1.2m flail mower on a small tractor that we use to cut the perimeter of every field at least three times from spring until harvest, to remove seeding heads. I'm certain that with the big combines we use these days that once it's in the header, it can travel metres into the field on the first pass.

"For me, removing those seeding heads next to the crop is an important part of integrated weed management."

Stuart added that it can be a similar scenario for brome too. "Many believe brome has crept in from edges and margins into fields. But with all of these weeds, the yield loss can be huge. For blackgrass one plant/m² is 1% yield loss, but for ryegrass, one plant/m² is 5% yield loss. So it's five times more robbing and if you see one, you

have to remove it because you don't want that problem on the farm."

David raised that he'd noted meadow brome appearing on the farm following a move away from ploughing. "Other than after sugar beet, everything was based around the Sumo. So to help bury the meadow brome we're re-introducing the plough back into our seven-year rotation. I'm convinced that's why we were seeing it, because we'd moved so far away from the plough."

OTHER DRIVERS

To continue, David stressed that weed management is a primary driver behind his approach to cultivation. "I feel we've had better control across the farm with mixed cultivation – strategically using the

Sumo, sometimes the plough. Every year is different and I think it's important not to get stuck in a rut.

"Equally, I've always tried to delay drilling. With the size of the farm we have a big drill capacity so can cover a lot of ground quickly if we have to. This autumn,

we planted into early November. I think if you have good seedbeds and the weather is fine, it's always best to wait to avoid not only grassweeds, but diseases like septoria too."

Sarah's advice is also to mix things up as well as pay particular attention to on-farm hygiene. "Don't get fixed on one method of establishment.



Resistance concerns

For ADAS' Dr Sarah Cook, making short-term decisions on weed control will have long-term impacts, including the potential of herbicide resistance.

There'll be fields that are clean or have low populations. Concentrate on cleaning up the bad fields but make sure you don't then spread weed seed around the farm. Clean machinery on leaving a field, then clean it again on entering the next," she stressed.

David then added that other aspects he considers are crop variety, ensuring field drainage is functioning properly, and what's in the rotation. "Not drilling our vining peas until the end of April or May provides a fantastic window for blackgrass to grow, including spring germinating plants. That's why I try to grow peas after second or third wheats." ●

COMMON GROUND

BASF's Common Ground is a community united by shared vision – a brighter future for farming. Working together to tackle the challenges growers face while celebrating the opportunities that arise, the initiative brings together people and businesses with diverse farming philosophies to share their perspectives.

By exploring key topics such as resilient crop production, achieving balance, and preparing for tomorrow's demands, it highlights the power of collective insight. In coming together to openly discuss and face challenges as one, Common Ground can discover what truly works and help shape the future of UK agriculture.

CPM would like to thank BASF for sponsoring this feature and for its support in making the connections to the experts and insights required to make it possible.



Can biologicals bridge the seed treatment gap?



“We require seed treatment products that effectively control disease threats.”

DAVID LEAPER

Seed treatments are crucial to early plant growth, but at a time when every input is being scrutinised, are they still worth the money? *CPM* takes a look at the value they're bringing, including the role of biological options.

By Andrew Watts

Once upon a time, seed treatments provided broad-spectrum protection against numerous pests and diseases but now, their activity has become increasingly specific. For the grower, this means identifying the greatest threat to their individual crop, and selecting a product accordingly.

Part of this shift in mindset has been down to the withdrawal of products like Jockey (fluquinconazole+ prochloraz) and Deter (clothianidin), and expectations have had to change accordingly, notes consultant and former seed technical manager for Agrii, David Leaper.

“Twenty-five years ago, seed treatments were regarded as the beginning of a new era in crop protection. They delivered concentrated,

targeted activity against a broad spectrum of pests and diseases.

“However, new regulations introduced in response to environmental concerns, together with increasingly stringent approval processes, have prompted manufacturers to move away from synthetic pesticide chemistry and towards biological products based on living microorganisms and naturally derived active substances,” he explains.

CHANGING LANDSCAPE

The withdrawal of systemic products altered pest management considerably, increasing the importance of accurately identifying individual pest risks. In their place has come a range of biological seed treatments, many of which claim

to enhance germination and crop establishment through improved root development. While these benefits are valuable, David argues that what growers require more are biological products capable of delivering reliable pest and disease control.

“We're fortunate to have several effective synthetic seed treatments for controlling seed-borne pathogens,” he says. “However, there remains a shortage of biological products offering comparable activity against these diseases, or against soil-dwelling pests.”

This isn't to diminish the value of existing synthetic chemical seed treatments, he urges, as without them, the incidence of seed-borne diseases would increase substantially. But unless manufacturers develop biological alternatives capable of addressing this gap, grower confidence is likely to diminish, requiring the industry to reconsider its overall approach to seed treatment.

“We require products that effectively control disease threats; we continue to



Playing catch-up

There remains a shortage of biological seed treatment products offering disease and pest control activity comparable with synthetic options both past and present, suggests David Leaper.

rely on fungicides such as fludioxonil, triazoles and SDHIs, even though they're coming under increasing regulatory scrutiny," he comments.

"While there are biological products claiming activity against challenges such as fusarium in wheat, their practicality in commercial production remains to be demonstrated. In oilseed rape, the situation is somewhat more encouraging," adds David.

David estimates that almost the entire UK OSR seed is treated with Integral Pro, a biological product containing *Bacillus amyloliquefaciens*. This claims activity against seed-borne phoma, alternaria and rhizoctonia, while also providing suppression of low to moderate cabbage stem flea beetle populations.

"The popularity of Integral Pro demonstrates that growers are willing to adopt biological products when they deliver reliable performance and address a genuine need."

There's also a strong case for biostimulant seed treatments, he believes, particularly as autumn-

sown cereals are frequently established under challenging conditions.

"Anything a grower can do to encourage early growth and improve crop vigour will help to establish a stronger crop before winter and better prepare it for spring growth.

Drought tolerance, both above and below ground, has understandably become a major focus, and biostimulants have a role to play.

"In my experience, however, these treatments generally provide a modest return, typically increasing yield by around 0.2-0.3 t/ha. A biological product capable of protecting crop quality would be considerably more valuable because it could reduce the risk of crop rejection," suggests David.

LONG-ESTABLISHED

As a concept, biostimulants have been used in crop production for many years. Chemical biostimulants, including the stabilised phosphite and pyroglutamic acid found in Take Off ST, aim to improve winter hardiness and drought tolerance by promoting greater root development and more uniform crop establishment.

Furthermore, true biological treatments aren't a new concept at all – the Victorians were among the first to use seaweed extracts, recognising the value of naturally-occurring humic and fulvic acids in promoting crop development.

As such, modern non-microbial biological products have built upon this principle. Products such as Corteva's Ympact are formulated with chelated zinc, copper and manganese to encourage rapid seedling establishment

SLUXX^{HP}

Still The One.



Experts agree: SluXX HP continues to be the ideal way to control slugs. Its advanced ferric phosphate formulation ensures you use durable, spreadable and palatable pellets. While EDDS, the best chelating agent available, enhances efficacy for consistent field performance and healthier crops.



Control slugs whatever the weather, whatever the crop. Find useful tools at certisbelchim.co.uk/slugs



Certis Belchim
GROWING TOGETHER

Use plant protection products safely. Always read the label and product information before use. For further information with regard to the warning phrases and symbols refer to the product label. SluXX^{HP} (MAPP 16571) contains ferric phosphate is a registered trademark of W. Neudorff GmbH KG. Contact Certis Belchim on 0845 373 0305, e-mail info.uk@certisbelchim.com or visit certisbelchim.co.uk. ©Certis Belchim 2026.

- ▶ while remaining fully compatible with conventional seed treatments.

More recent developments include microbial products such as Syngenta's Nuello iN, which contains the endophytic bacteria *Pseudomonas siliginis* and *Curtobacterium salicis*. These organisms can capture atmospheric nitrogen and convert it into plant-available forms, effectively providing a supplementary nitrogen source throughout the crop's lifecycle.

"Generally speaking, most modern biostimulant treatments work," suggests David. "Some perform better than others, some are more consistent across varying conditions, and some contain greater nutritional value. Each should be judged on its own merits, but

there's certainly a case for their use."

He says in most situations, the yield benefit more than covers the cost of application. "Growers can therefore have confidence in using these products, but there's little evidence to support combining multiple biostimulants in the expectation of accumulating their individual benefits.

"In my experience, they deliver the greatest value when autumn establishment conditions are difficult, particularly in later-sown crops. Earlier-drilled crops established under favourable September conditions generally derive less benefit."

ASSESSING EVIDENCE

Overall, David believes biological



Pipeline potential

Although fungicide Polyversum WP isn't authorised in GB as a seed treatment, experience from Europe suggests it has considerable potential for this application, highlights Russell Bio Solutions' Harry Edwards.

and non-biological stimulants often produce comparable results. "I found that growers were often attracted to biological stimulants for reasons other than performance; it wasn't necessarily because they believed they were superior to conventional products such as phosphites.

"In my experience, chemical stimulants generally produced more consistent results than biological alternatives. I believe this is because chemical products induce a direct physiological response within the plant, whereas microbial products depend upon favourable environmental conditions – including adequate soil moisture, suitable temperatures and appropriate soil pH – to function effectively," he explains.

This reliance on environmental conditions could partly explain why biological products have achieved greater success in horticultural systems, particularly protected crops grown in glasshouses. By contrast, arable rotations are routinely exposed to environmental extremes, including drought and waterlogged soils, both of which can significantly reduce the effectiveness of microbial treatments.

"This is why nutrient-based products often perform more consistently than some biostimulants. Where nutrients are readily available, the plant can absorb them immediately. Biologicals seek to improve root development so the plant can access more water and nutrients, but if adequate nutrition is already available, the plant will achieve much of this naturally. It becomes something of a

KWS EMPHOR

HYBRID WINTER RYE

For those who aim high

- KWS's highest-yielding variety
- Dual purpose for grain and wholecrop
- Excellent drought tolerance

170 years of
KWS



chicken-and-egg situation,” argues David.

The nutrients most commonly included in seed treatments are manganese, zinc and copper. Some manufacturers offer high-loading single-nutrient products while others provide lower-rate combinations of all three. According to David, the choice reflects individual company strategy rather than clear evidence that one approach consistently outperforms another.

“Each company has its preferred approach, based on its own priorities and the information provided by suppliers. I don’t place too much emphasis on the exact formulation because they all aim to achieve similar outcomes and generally perform well. In my experience, these products are almost always worthwhile even though differences observed in trials are often smaller than the least significant difference required to demonstrate a true statistical advantage,” he raises.

QUALITY OVER QUANTITY

As a well-known advertising campaign states: ‘If 80% of your drink is tonic, make sure it’s a good one,’ David believes the same principle applies to nutritional seed treatments. “At Agrii, we concluded that applying a high loading of a single nutrient was preferable, whereas others opted for lower-rate mixtures. Some products contain only trace quantities of nutrients. The obvious question is: what benefit does that provide?”

For some growers – and particularly their agronomists – the use of micronutrient seed treatments may appear unnecessary, especially where foliar nutrition programmes are already planned.

According to David, many agronomists prefer to manage micronutrients separately through foliar applications, particularly in spring barley, even though tissue analysis consistently indicates that nutritional seed treatments and foliar nutrition complement one another.

Evidence also suggests that nutritional seed treatments provide benefits regardless of the underlying soil nutrient status.

“We searched extensively for a relationship between soil nutrient deficiency and plant response but found none. Crop response appeared to be independent of both soil nutrient indices and soil texture. Initially this seemed surprising, but we concluded that the immediate availability of nutrients during early establishment provides young plants with an important physiological

Lessons learned

Why for one Lincolnshire grower, turning a blind eye to take-all just isn’t worth it

For Tom Taylor, farm manager at Mawthorpe Farms in Lincolnshire, the potential of take-all to kill-off a crop of winter wheat just weeks away from harvest proved a harsh lesson. In fact, he soon realised how bad the situation was after rubbing out a sample in the palm of his hand only for most of the grain to blow away with the chaff.

“I’d only recently joined Mawthorpe Farms but soon came to realise that take-all wasn’t to be overlooked. A 200ha block of winter wheat turned white in a matter of weeks. From an expected yield of 8.5-9 t/ha, we harvested an average 5t/ha of shrivelled grain that more closely resembled rice,” he recalls.

On consulting the field records, Tom could see that the warning signs were there. “The land was in its fourth winter wheat, albeit with a crop of spring barley in there after the third wheat failed. There was no disguising the damage – it’s the most blatant case of take-all I’ve seen,” he says.

As a result, all second winter cereal seed is now treated with Latitude (silthiofam). “You have to learn the lessons from these mistakes. Winter cereals remain the focus of the rotation, so take-all is just another threat that has to



Once bitten, twice shy

Harvesting an average 5t/ha of shrivelled grain that more closely resembled rice has meant farm manager Tom Taylor won’t ignore the threat of take-all again. *Photo: Tom Taylor.*

be managed,” comments Tom.

His decision to adopt Latitude has ensured that any impact the disease might have on performance has been limited, and it was his experience with take-all earlier in his career that provided the impetus to move quickly when the risk became apparent.

“Take-all is a pathogen that can exist in the soil for many years, even without a host crop and there aren’t enough financially worthwhile break crops to choose from to give the ground an extended break from winter cereals. In such a situation, Latitude is the only option if we want to protect the profitability,” he concludes.

advantage,” comments David.

There is, of course, a broad range of biological products that perform strongly as foliar applied fungicides. One notable example is Polyversum WP, a biological fungicide containing the beneficial microorganism *Pythium oligandrum* M1. The product is authorised for use in Great Britain for the control of black leg, sclerotinia stem rot in OSR, and fusarium head blight in cereals.

Although Polyversum WP isn’t authorised in GB as a seed treatment, experience from Poland and the Czech Republic suggests it has considerable potential for this application, highlights Harry Edwards of Russell Bio Solutions, the UK distributor.

“We already have GB authorisation for Polyversum WP as a foliar fungicide and have used it this season to determine

where it fits best within integrated disease management programmes to maximise its effectiveness,” he says.

“We’re yet to fully evaluate its potential as a seed treatment under GB conditions. However, European trial data have demonstrated efficacy comparable with formulated seed treatments containing tebuconazole+ fludioxonil for the control of fusarium head blight in winter wheat, and superior performance to products containing difenoconazole+ fludioxonil against common bunt.

“While these results are highly encouraging, we haven’t determined whether there’s sufficient market demand to justify the investment required to generate the comprehensive trial data package required for an assessment by the UK Health and Safety Executive – Chemicals Regulation Division (HSE-CRD),” concludes Harry. ●

Don't let take-all, take all

With this season's conditions and management decisions proving a potential perfect storm for take-all proliferation, growers are being urged to tackle the pathogen head-on utilising all preventative measures. *CPM* explores why an integrated approach to take-all management is essential ahead of drilling this autumn.

By Janine Adamson

While focus primarily swings between managing key foliar diseases yellow rust and septoria, are growers neglecting the significant threat of take-all? As estimates suggest it affects half of UK wheat crops, with average yield losses of 5-20%, what can growers do to get a handle on this soil-borne pathogen?

CPM brings together two industry voices – Luke Alexander from Frontier Agriculture and Leanne Fowler from Certis Belchim – to further discuss the magnitude of this underground threat.

DOES TAKE-ALL REMAIN A THREAT IN TODAY'S PRODUCTION SYSTEMS?

Luke: With very limited control options, take-all remains a significant threat to UK cereal crops.

It's caused by soil-borne fungal pathogen *Gaeumannomyces tritici*, and attacks the roots and stem base of plants. Take-all strikes plant roots early in the season, often without visible symptoms above ground, reducing water and nutrient uptake and lowering yield.

What makes its control a challenge, is that detectable signs such as patchy growth, black brittle roots and whiteheads appear only after significant damage has already taken place.

Second to fourth wheats offer growers a primary take-all risk – the pathogen is the main cause of 'second wheat syndrome' when yields are around 10–15% less than those of first wheats. Looking ahead to this autumn, second wheats will be important due to the



large wheat crop in the ground coming to harvest. In addition, with the rise in the number of higher yielding varieties in the Group 1 segment, when grown as a second wheat, these should be treated appropriately to diminish risk.

HOW ARE CURRENT FARMING PRACTICES ENHANCING THE PROBLEM?

Luke: There are major risk factors when it comes to mitigating take-all, some of which are more prevalent following recent seasons and subsequent crop management decisions.

- **Soil type** – Risk is highest on silty clays, sand and organic soils because the fungus spreads more easily; well-structured, water-retentive soils present lower risk. Therefore, understanding soil type is critical
- **Sowing date** – In 2025, an early harvest and concerns regarding a potentially wet autumn led to an increase in early-sown wheat. For take-all, the first week of September through to mid-September sowings give the highest risk, meaning this year could increase soil-borne inoculum
- **Crop rotation** – High risk situations involve tight wheat and barley rotations, particularly second through to fourth wheats. Equally, including break/cover crops or SFI options with take-all hosting species will increase the risk further
- **Climate** – Warm, damp soils in winter followed by wet springs and early summers deliver the greatest risks to take-all. Dry conditions during grain filling exacerbate the effects of the disease on root function

HOW CAN GROWERS MANAGE TAKE-ALL AS PART OF WIDER PRODUCTION DECISIONS?

Luke: Unfortunately, take-all can't be controlled using foliar fungicides because infection occurs below ground. Therefore, management must be preventative and integrated, prioritising cultural control methods.

- **Varieties** – All varieties are susceptible to take-all, so focus on options with early vigour
- **Cultivations** – Be wary of direct drilling or min-till as firm seedbeds pose a higher risk of take-all. Ploughing buries most take-all inoculum
- **Rotation** – Select crops carefully including SFI options, paying additional attention to the species within blends. Broad-leaf crops will form an effective take-all break



Invisible threat

What makes take-all control a challenge, is that detectable signs only appear after significant damage has already taken place, highlights Frontier Agriculture's Luke Alexander.

- **Drilling Date** – The pathogen is active when soil temps are above 10-12°C. Ideally, delay sowing second wheats until soil temperatures are below 12°C
- **Seed Rate** – Reducing seed rates can increase yield where take-all pressure is severe as this reduces root density
- **Nutrition** – Apply early nitrogen and rectify any nutritional deficiencies quickly as deficient soils favour take-all

ARE THERE CHEMICAL SOLUTIONS TO MANAGE TAKE-ALL?

Leanne: Latitude (silthiofam) from Certis Belchim is the only registered crop protection product with proven efficacy against take-all. As a fungicidal seed treatment, it can be used on winter and spring wheat seed, and winter barley; it also has EAMUs for rye and triticale.

Latitude is a proven, practical tool to help manage second and subsequent wheats and barley,

without delaying crop emergence.

Because Latitude is the only chemical option available, it should always be used in conjunction with cultural approaches as part of a wider IPM strategy. This means it can add another layer of take-all risk management, reducing primary infection and protecting yield potential.

HOW DOES LATITUDE WORK?

Leanne: As a seed treatment, Latitude targets the early stages of crop establishment, acting as a fungistat and forming a zone of protection around developing crop roots. This means the seed is protected from the take-all pathogen from the moment it's planted. Although this doesn't cure the disease outright, its development is slowed, enabling the plant to grow away from the infected area.

Furthermore, trials consistently indicate that Latitude effectively reduces the impact of take-all. While specific



Early protection

Latitude acts as a fungistat and forms a zone of protection around developing crop roots, explains Certis Belchim's Leanne Fowler.

yield responses vary depending on the disease pressure presented, data suggests the average response is +0.55t/ha in wheat after wheat situations.

The Latitude calculator on the Certis Belchim website quantifies the benefit of using Latitude seed treatment, based on estimated crop price, the cost of the seed treatment and the seed rate being used. ●

A rotational approach to tackling take-all

With cereal-heavy cropping, mixed farmer Gareth Parker is using seed treatments to preserve potential from the off

Although Gareth Parker says he hasn't seen much take-all recently at Manor Farm in Ludlow, Shropshire, he's conscious that the threat always remains.

This is because the farm's cropping is centred around producing quality feed for its cattle, meaning a somewhat cereal-heavy rotation of grass, winter wheat, oilseed rape, winter barley and some spring barley.

As such, he takes an integrated approach to take-all control, as much as the system will permit, he adds. "While we have quite a lot of cereals in our rotation, we are strict and try to minimise second wheats and include OSR as a break. This is important as we have to drill quite early due to our location, meaning risk is increased."

Gareth highlights that in the past, the farm grew continuous wheat, which is when Latitude first came into play. "We've been using it for quite a while and still do, when the risk warrants it."

"The goal is to help protect the crop's establishment and give it the best chance to achieve its potential.



Cost-effective input

According to mixed farmer Gareth Parker, seed treatments are a relatively low-cost investment so are a simple way to safeguard yield.

In terms of crop inputs, seed treatments are a relatively low-cost investment so it's a simple way to safeguard yield," he explains.

While he doesn't believe growers are necessarily neglecting take-all management, he does perceive it as a relatively standard threat to consider. "You have to be aware that it's there and factor it in across all aspects of the rotation," he concludes.



Take-all is an invisible yet serious threat in second and third cereal crops, including winter barley. Left unchecked, it can significantly reduce yield and profitability.

Latitude from Certis Belchim is the only seed treatment specifically developed to combat take-all. Containing fungicide silthiofam, it offers targeted protection right from the start, forming a vital part of an integrated management strategy.

BASIS CLASSROOM

A new BASIS Classroom course on integrated control of take-all is now available. Produced by BASIS in partnership with Certis Belchim, it takes less than an hour to complete and if successful, qualifies for two CPD points. BASIS Classroom is open to members of the professional register and environmental advisers register.

Visit: basis-classroom.streamlpx.com/dashboard



Re-thinking 'the why' with variable rate N

"Research has always suggested modest gains from variable rate N."

MARK TUCKER

New research reveals that variable rate nitrogen applications result in only minor improvements to yield, gross margin, and greenhouse gas emissions, compared with a standard flat rate. *CPM* investigates what this could mean for growers.

By Janine Adamson

Maximised crop potential, optimised input costs, and a reduced impact on the environment – just some of the historical claimed benefits to be had from adopting variable rate nitrogen applications. However, what if research suggests all is not what it first seems?

According to new findings from ADAS, variable rate N delivers only small yield and margin gains, and a minimal reduction in greenhouse gas emissions, when compared with the flat economic optimum N rate for the whole field. Similar results were found across three key crops – winter wheat, winter barley and oilseed rape.

The work was conducted on 11 commercial UK farms over five years, and involved dividing single fields into small square plots with different amounts of nitrogen applied to each, N response curves were then used to calculate the 'optimal' N rate for each

plot. Besides N, all other inputs and applications remained the same.

As well as the field's optimum rate, the variable rate scenarios were also compared with other N rates including the UK average from the British Survey of Fertiliser Practice, and the RB209 recommended rate for each field.

TRIAL RESULTS

The subsequent results indicate that on average, varying N rates would have increased yields by about 0.05t/ha and improved margins by roughly £10/ha. Equally, only a small reduction in greenhouse gas (GHG) emissions per/t of crop produced would be achieved.

"We found that using variable rate N would result in some small yield and gross margin gains, but ultimately most benefits came from being closer to the field optimum rate," explains Dr Kate Storer, ADAS principal research scientist and lead for the project.

For further context, within a single field, yields varied by up to 2.5t/ha for wheat, and the optimal N requirement differed by more than 200kgN/ha (oilseed rape) between areas, highlighting the significant within-field variation.

"These differences highlight exactly why precision farming tools are considered promising – crop



Trial findings

The work suggests tailoring nitrogen applications using variable rate offers relatively little gain over applying an accurate flat optimum N rate across the field, explains ADAS' Dr Kate Storer.



Understanding the goal

Agrovista's Graeme Barrett raises that with variable rate, the original goal was never to reduce fertiliser quantities, or have a direct impact on greenhouse gas emissions.

requirements aren't uniform, even within the same field," adds Kate.

Considering environmental impacts of fertiliser use, the research indicates a similar pattern - adjusting N rates within fields had very little impact on overall modelled GHG emissions when compared with using a flat optimal N rate for the whole field.

When a flat optimum N rate was used, the GHG emissions from applying above the optimum in some areas of the field were cancelled out by reduced GHG emissions when applying below the optimum in other areas, highlights Kate.

"The findings indicate that tailoring nitrogen applications using variable rate offers relatively little gain over applying an accurate flat optimum N rate across the field. But estimating the perfect optimum N rate is difficult, so it's important to utilise all relevant methods, including in-season adjustments, to be as accurate as possible."

Co-author Dr Sarah Kendall raises that there's a current renewed focus on fertiliser rates as nitrogen prices rise. "Yet, the results were similar when tested under increased fertiliser prices, suggesting that variable rate won't necessarily provide greater benefits with a higher ratio of N:grain prices.

"However, prioritising understanding field-level fertiliser requirements through soil assessments, crop monitoring, and decision support tools is key. The greatest value of variable rate is likely to result from helping to get as close as possible to the field average optimum N rate,

rather than the actual delivery of different N rates within a field," she suggests.

Agrovista's national precision services and rural consultancy manager, Graeme Barrett, raises that with variable rate, the original goal was never to reduce fertiliser quantities, or have a direct impact on greenhouse gas emissions. "In fact, in terms of overall quantity applied, it's often the same as the flat rate, and in some cases, can be more.

"Instead, it's about optimising crop yield and achieving uniformity. Part of that involves understanding whether the soil can sustain an increase in yield through feeding the crop, so what are the reasons behind the poorly performing areas of a field?" he argues.

BIGGER PICTURE

In Agrovista's case, this has meant utilising an alternative approach to NDVI data – the primary intelligence driving most variable rate applications. "We don't look at just one snapshot of NDVI as this can sometimes prove unreliable. Instead, we stack up to eight years of NDVI data, plus additional information such as elevation, field productivity and soil health.

"Compaction can look like a poorly performing crop and won't necessarily respond to applying greater quantities of fertiliser. Equally, different soil types respond to nutrition in very different ways, particularly in respect to nitrogen.

"But by looking at this wider information and acting accordingly, I believe it's possible to achieve a yield uplift beyond what these trials would suggest, which in honesty, I'm surprised by," comments Graeme.

Yara's Mark Tucker agrees, stating that while not all variable rate systems are the same, most scenarios result in the same amount of fertiliser being applied as a flat rate. "Equally, I think it would be wrong to assume there'd ever be a huge yield uplift, research has always suggested modest gains from variable rate N.

"In fact, years of work by Yara suggests a 3-4% benefit is more realistic. While small, an incremental gain can be significant to an individual, depending on the scenario," he says.

Furthermore, he stresses that nutritional trials are never black and white. "It's challenging to achieve statistical analysis due to the many variables at play, such as the previous crop, soil type or recent tillage. With such variability, it would be wrong to apply a flat rate, and satellite NDVI has helped to visualise this for us so we can respond accordingly.

"Therefore, the aim should be to match the supply and demand of the crop as closely as possible, for optimised nitrogen use efficiency (NUE). If we can approach this from a different mindset – truly grasp why we're doing this – then variable rate can be effective."

Mark stresses that for many Yara customers, it's the wider agronomic benefits of variable rate N that actually matter. "For them, achieving a homogenous crop improves lodging control, combine performance, or helps to achieve milling specification. In many ways, potential yield improvements are less critical."

Reflecting on the new research, Omex's David Booty believes the strategy should remain to truly understanding crop requirements to inform selecting the right product and application strategy. "Applying the right product, in the right place, at the right time remains the most effective route to improving nutrient use efficiency and supporting sustainable crop production," he continues.

"Where growers identify a clear economic benefit from variable rate applications, liquid fertiliser systems can often deliver this more accurately and efficiently, helping to translate field data into precise nutrient placement."

To round up, considering the emissions side of the trial in more detail, Graeme adds that greater reductions could probably be achieved by utilising variable rate for other inputs. "I think the gains would be more significant overall from variable rate P, K and lime," he concludes. ●



Modest gains

Yara's Mark Tucker believes it would be wrong to assume there'd ever be a huge yield uplift with variable rate N, with research always suggesting modest gains.



WITH GUY SMITH

Smith's SOAPBOX

Bad timing, good timing, two timing

“It’s a good old farming chestnut to ask arable farmers which they fear the most – a very wet year or a very dry year? The answer is usually subjectively coloured by the flavour of the weather at the time.

Looking at UK wheat harvest figures, it’d seem too much wet is the more serious. According to Defra, the flooded 2020 gave us a record-breaking meagre wheat harvest of 9.66M tonnes, whereas the drought last year gave 11.96M.

Having said that, both were well down on the long term average of around 14M.

So not surprisingly, neither ends of the weather spectrum are good for farming returns. We like ‘Goldilocks’ weather, while both mummy bear and daddy bear would do better having their porridge in an environmental scheme that always returns something come rain or shine.

The killer question for this year’s harvest is does it come on the back of a flood or a drought? For us, the autumn and winter gave us twice as much rain as we’d normally expect and yet the spring and summer looks like it will be less than 30% of the average.

Having finished the OSR and yet to start the

winter wheat or beans or spring wheat, I suspect it’ll be the usual curate’s egg with the OSR surpassing expectations, the wheat meeting moderate expectations, and the beans and spring wheat bringing up the rear with cries of ‘why did we bother?’.

Combines started to roll on this farm on 8 July. If we had barley it would have been a June start, but for us it was the OSR that kicked things off. Looking at diaries of previous harvests, we’re a full fortnight in front of ourselves.

In north east Essex, the norm was that. Aside from the odd maverick who had a taste for cutting green barley, there wasn’t much combining to talk about when the locals met up in the members’ tent at the Tendring show. The show is always held on the second Saturday in July – it’s been much the same since the first show in 1899.

No doubt our forefathers chose this timing for the very reason that farmers wouldn’t be busy with harvest as it was yet to start. But now that harvests seem to start earlier and earlier, maybe the show committee might reconsider timings, as the prospect is half of the stewards are too busy on-farm to help man the show.

But then again, if the current trend in continues, it may be the second Saturday in July becomes an ideal timing, but because most farmers have wrapped up their harvests and put the combine away.

Harvest is always a time to reflect on the year as you sit in the isolation of the combine cab. At the moment, it seems we should expand the OSR crop and not bother

with anything else but winter wheat. But then I’m reminded of that old farming adage ‘when it comes to cropping plans, forget last year but remember the past decade’. Or to be put it another way, in the words of my late father – ‘don’t be jumping around like a grasshopper’.

Adapting my father’s wise words, you could say when it comes to the planned OSR area for next year I shouldn’t be ‘jumping around like a cabbage stem flea beetle’. From what I saw in the combine tank and grain store floors, it’d seem CSFB numbers are low. Hopefully they’ve been incinerated by the heatwaves we have seen so far.

No doubt the jokers are actually keeping a low profile in the long grass waiting for me to place this autumn’s seed order. Once the seed is in the ground they’ll emerge from the undergrowth to have the last laugh. The other joker being the potential dryness of the seedbeds in August. Current rainfall patterns don’t suggest anything but arid, cloddy seed beds more suited for cactus farming rather than anything else. Still, what’s not to like about a shot of tequila? ●

YOUR CORRESPONDENT

Guy Smith grows 500ha of combinable crops on the north east Essex coast, namely St. Osyth Marsh – officially the driest spot in the British Isles. Despite spurious claims from others that their farms are actually drier, he points out that his farm is in the Guinness Book of Records, whereas others aren’t.
End of.
@essexpeasant

WELVENT

CROP STORAGE SPECIALISTS

Grain Storage
Timber Tunnels
Inverters
Controls
Louvers



Timber Floors
Steel Tunnels
Heaters
Fans



WELVENT LTD
Whisby Way, Whisby Road
Lincoln LN6 3LQ

T 01522 693008
F 01522 500429
E enquiries@welvent.com

www.welvent.com

Resistance without compromise?

“What we’re calling the second generation of BYDV varieties is a significant step forward.”

ANDREW CREASY

As growers balance disease risk, input costs and changing stewardship requirements, genetics are becoming an increasingly important part of the BYDV conversation. In its latest survey, *CPM* finds out how much virus risk is influencing varietal choice.

By Charlotte Cunningham

Few diseases have shaped autumn cereal management quite like barley yellow dwarf virus (BYDV). Spread by aphids and capable of causing significant yield losses in susceptible crops, it’s long been a challenge growers have sought to manage through a combination of cultural controls, seed treatments and insecticides.

But with the loss of key chemistry, increasing scrutiny around insecticide use and changing weather patterns, the way growers approach BYDV appears to be evolving...

A recent *CPM/RAGT* survey suggests the virus remains a familiar challenge across UK arable businesses. Yet despite most growers having encountered the disease and many facing increasing restrictions around traditional control options, more than half have never grown a BYDV-resistant wheat variety.

So, what’s holding them back?

For most growers, BYDV is far from a new problem. The survey found just 5% of respondents had never seen

BYDV symptoms in their crops, while 72% reported seeing symptoms on occasion and a further 15% said they encounter the disease every year.

According to RAGT’s Ed Stanford, recent seasons have highlighted just how variable BYDV pressure can be, while also raising questions around whether the industry is seeing a genuine increase in infection levels. “This year we’ve seen more cases of BYDV than we’ve ever seen before, but due to the infection coming in post-Christmas, the yield impact hasn’t necessarily been as severe as some previous outbreaks,” he explains.

“Last year was arguably a worse year for BYDV because where people were seeing it, they were observing much greater yield damage. This year we’re seeing more people experiencing BYDV, but generally from later infections.”

He adds that what concerns him most is the longer-term trend. “The feedback we’re getting from farmers and from our own travels around the country is that there seem to be more and more cases

of BYDV. We don’t know whether that’s because people are becoming better at identifying it, or whether it’s genuinely increasing, but if we take it at face value, we’re moving into a higher-risk situation.”

Bartholomews Agri Food agronomist and technical director, Andrew Stilwell has observed a similar pattern. “Before Deter was withdrawn, symptoms were far less common,” he says. “Since then, I’ve certainly seen a lot more BYDV in crops.

“It remains heavily influenced by autumn weather conditions, but where



Seed treatments no longer an option
For RAGT’s Andrew Creasy, the loss of Deter represented the removal of an important tool from the BYDV management toolbox.

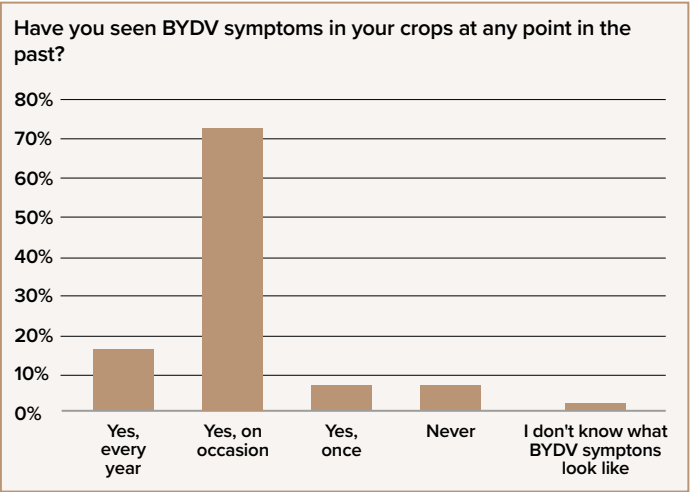


The extent of BYDV pressure
According to RAGT's Ed Stanford, recent seasons have highlighted just how variable BYDV pressure can be, while also raising questions around whether the industry is seeing a genuine increase in infection levels.

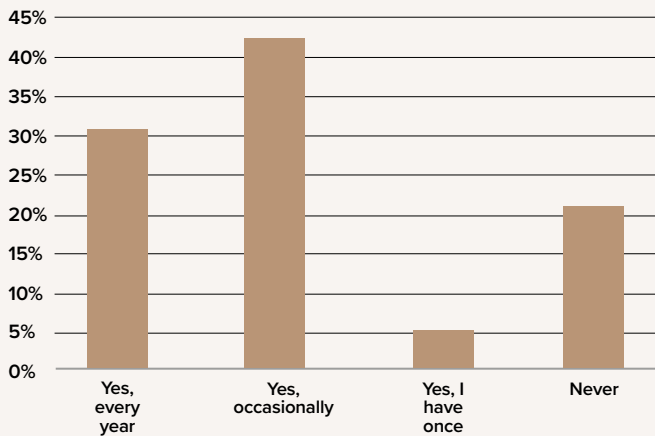
► we experience milder autumns with warmer temperatures and conditions that favour aphid activity, the incidence of BYDV is definitely increasing.”
He adds that the 2025-2026 season has been one of the most notable in recent years. “The worst year I’d previously seen was 2015, but this season is shaping up to be one of the most significant BYDV years since then.”
While BYDV itself might be nothing new, the way growers manage it has changed considerably. Prior to its withdrawal, Deter (clothianidin) formed a key part of many BYDV management programmes. In fact, almost 79% of survey respondents said they had previously used the insecticidal seed treatment.
For RAGT’s Andrew Creasy, its loss represented the removal of an important tool from the toolbox. “If we had every tool available – seed treatments, foliar insecticides and

resistant varieties – that would be ideal. But we don’t,” he says. “We lost one of the more useful tools available to us and now we’re largely reliant on foliar applications and resistant varieties, both of which have a role to play.”
Andrew Stilwell agrees and says the impact was quickly felt on farm. “It created logistical challenges because it often meant an extra pass in the autumn, or perhaps having to travel earlier than we normally would,” he explains. “There were also additional costs involved and, of course, greater environmental considerations.”
While insecticides remain an important part of many BYDV management programmes, their use is becoming increasingly targeted. Some 42% of respondents said they apply autumn insecticides occasionally, while 31% do so every year. Just over one-fifth said they never apply autumn insecticides.
According to Andrew Stilwell, that reflects what he’s seeing on farm. “I have some clients who simply don’t wish to use insecticides and are prepared to accept the consequences of that decision,” he highlights. “Others have entered stewardship schemes which restrict insecticide use, while many are still using an autumn insecticide but limiting themselves to a single application.”
That trend is particularly relevant given the survey found almost 59% of respondents have at least some land entered into CIPM4, the action which restricts insecticide use on arable crops. More than 12% reported having their entire farm entered into the action.
Andrew Stilwell adds that many growers are increasingly relying on cultural controls as part of a broader integrated pest management approach. “One of the biggest advantages we have is that we generally don’t drill particularly early,” he

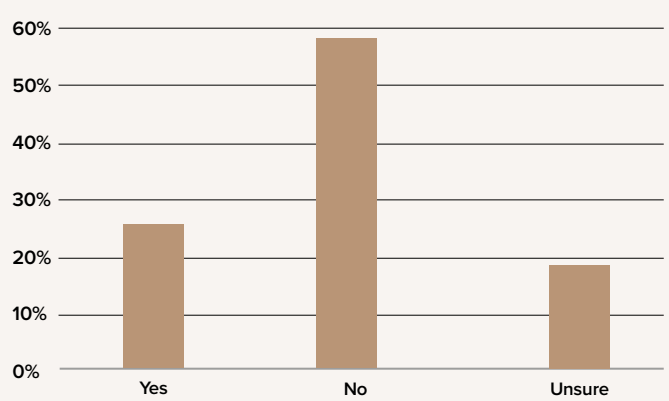
says. “Most of our wheat is targeted for the middle of October onwards because of grassweed management requirements.”
“That later drilling naturally reduces some of the early infection risk. We’re also using stale seedbeds and breaking green bridges, which helps to reduce aphid movement into crops.”
The weather is adding another layer of uncertainty and Ed says that if conditions remain warm and dry, aphids continue reproducing and spreading the virus. “Equally, if conditions become wet, growers may not be able to travel to apply an insecticide when they need to.”
Taken together, the findings paint a picture of growers increasingly focused on managing risk. Which perhaps makes one survey result all the more intriguing...
Despite the prevalence of BYDV, the loss of Deter and increasing restrictions around insecticide use, the experts say there’s another tool in the armoury which is still being underutilised – resistant varieties. This was reflected in the survey, with 55% of respondents noting they’ve never grown a BYDV-resistant wheat variety.
Given the challenges highlighted elsewhere in the survey, that figure may come as a surprise. However, the responses also provide some clues as to why adoption remains relatively limited. When growers were asked what single factor would encourage them to grow more BYDV-resistant varieties, the most common response was higher yield (39% of respondents). Better disease resistance and improved suitability for end markets followed close behind.
Similarly, when asked how much theoretical yield they’d be prepared to sacrifice in exchange for BYDV protection, most respondents indicated they’d accept little or no compromise.
For Andrew Creasy, those findings



Do you apply insecticides to your wheat in the autumn?



Have you ever grown a wheat variety with BYDV resistance?



A cultural approach

Andrew Stilwell of Bartholomews Agri Food says that many growers are increasingly relying on cultural controls as part of a broader integrated pest management approach when it comes to BYDV.

reflect perceptions that have followed resistant varieties for a number of years. "There's always been a concern that if you add another trait, growers will have to compromise somewhere else," he says. "But that's no longer the case."

He adds that the latest generation of BYDV-resistant wheat varieties bears little resemblance to the material that first introduced the trait to the market. "What we're calling the second generation of BYDV varieties is a significant step forward," he explains. "It's not just about having BYDV resistance; these varieties also carry strong disease resistance packages, good agronomics, competitive yields and, in the latest material, orange blossom midge resistance as well."

"These don't rely on one trait alone," he continues. "They're high-performing wheat varieties in their own right which also happen to carry BYDV resistance."

Building on the concept of resistance without compromise, Andrew Creasy says recent additions to RAGT's portfolio have been developed to demonstrate how far the breeding programme has progressed.

RGT Guardsman represented a key milestone for the breeder, combining BYDV resistance with a yield performance capable of competing with mainstream feed wheats. However, he believes the next generation of material takes that a step further. "As breeders, we're always trying to solve tomorrow's problems. The challenge is delivering those solutions in varieties that growers genuinely want to put in the ground."

The latest options combine BYDV resistance with orange blossom midge resistance, strong yellow rust and brown rust ratings, improved septoria resistance and competitive yields. Many have also been developed with earlier drilling slots in mind, helping growers to manage periods of elevated aphid pressure while maintaining strong agronomic performance.

Importantly, the trait itself represents true genetic resistance rather than simply tolerance to infection, explains Andrew Creasy. "The plant receives the virus and then fights it off internally," he explains. "It's not simply a case of a variety coping better with infection or

avoiding the worst of the symptoms. The resistance is there and it continues working regardless of infection pressure."

Andrew Stilwell has witnessed a similar shift from an agronomy perspective. "When the first resistant varieties became available, they found a niche among growers who'd experienced severe BYDV problems," he says.

"Now, as autumn conditions have become more challenging and the genetics have improved, interest has increased considerably."

He points to RAGT's Goldfinch as an example. "There's a perception that there's a yield penalty attached to growing it, but in our experience, when it's grown as a crop in its own right, we don't really see that penalty at all [compared with other Group 2s]."

"That gives growers confidence to continue with it and helps demonstrate how much the genetics have moved forward."

For Ed, that means the conversation is increasingly shifting beyond headline yield figures alone. "If you're achieving similar yields, but with stronger disease resistance and lower overall risk, then the gross margin equation starts to look very different," he concludes. "Farming today is increasingly about managing risk as well as maximising output." ●

Winner announcement

Congratulations to prize winner Will Cobley who responded to the CPM/RAGT survey and provided insight on BYDV. Will has won a Ninja BBQ, worth £400.

He correctly answered the tie-breaker question of "Which was the first ever wheat variety with BYDV resistance to yield more than 100% on the UK Recommended List?" With: "RGT Guardsman"

To engage with future surveys, visit the CPM website and sign up to the newsletter.

Looking beyond yield

“Wheat continues to offer one of the most reliable economic returns available to many businesses.”

MATT BULL

With wheat continuing to underpin many arable rotations, variety choice remains one of the most important decisions growers make. But as disease pressures evolve, premiums fluctuate and weather extremes become more common, is the highest-yielding option always the most productive? *CPM* finds out more.

By Charlotte Cunningham

For all the advances in agronomy, technology and crop protection, variety choice remains one of the most influential decisions made before a seed even enters the ground.

Yet while Recommended List figures often dominate discussions, growers are increasingly taking a broader view of what productivity really means. Yield remains critical, but in an era of tighter margins, shifting market opportunities and greater weather variability, consistency, resilience and flexibility are becoming just as important.

That's particularly true following the recent changes in varietal resistance to yellow rust, which has prompted renewed discussion around variety selection and the dangers of over-reliance on any one source of resistance.

According to Agrovista's Mark Hemmant, the industry's response

shouldn't be to abandon affected varieties altogether, but rather to ensure a balanced approach to variety choice. “We're not saying don't grow varieties which might show some yellow rust, but don't grow more than you can manage,” he explains. “The key is having a range of varieties and a range of genetics across the farm.”

MANAGING RISK

It's a theme that runs throughout modern wheat production. Rather than chasing a single headline figure, productivity increasingly comes from managing risk, spreading opportunity and ensuring each variety is selected for the role it's expected to perform.

Thinking about the coming season, and KWS UK agroservice manager, Matt Bull, believes there's likely to be another substantial wheat area established

across the country, reflecting the crop's continued importance within arable rotations. “While questions remain around grain prices, fertiliser costs and premium availability, wheat continues to offer one of the most reliable economic returns available to many businesses.”



A firm place in the rotation

KWS UK agroservice manager, Matt Bull, believes there's likely to be another substantial wheat area established across the country this coming season, reflecting the crop's continued importance within arable rotations.



Variety matters

Agrovista's Mark Hemmant believes having a balanced portfolio of varieties is vital to ensure farmers have the flexibility to deal with whatever the season throws at them.

Against that backdrop, growers are increasingly looking for varieties capable of delivering across multiple measures of performance. "People are considering how they can improve margins, maximise marketing opportunities and ultimately reduce risk," says Matt. "Variety choice has an important role to play in that."

Importantly, those priorities aren't necessarily the same on every farm, believes Zak McClland, Agrovista's southern seed sales manager. "Geography, market access, drilling strategy, disease pressure and rotational requirements can all influence which characteristics matter most, meaning variety selection is increasingly about matching genetics to specific farm objectives rather than identifying a single winner."

Regional factors remain important too, he adds. In the North, distilling markets continue to influence variety decisions, while further south, proximity to mills and export outlets often drives demand for Group 1 and Group 3 wheats. "Elsewhere, feed wheat remains the dominant option, but even here growers are increasingly looking for opportunities to capture additional value where premiums exist."

For growers targeting milling premiums, achieving specification remains one of the main challenges. While protein attracts much of the attention, delivering consistent quality has become increasingly difficult as weather

patterns become less predictable and nitrogen utilisation more variable.

According to Matt, this is where genetics can play a valuable role in reducing risk. "Weather extremes can have a significant impact on nitrogen uptake and protein accumulation," he explains. "Having a variety that's inherently strong from a protein assimilation perspective helps to reduce the risk of missing contract specifications."

It's a key part of the rationale behind growers widely choosing KWS Vibe, which has been developed to offer strong protein production alongside improved agronomics. "For many years, Crusoe set the benchmark for protein achievement within the milling sector," notes Matt. "However, growers are increasingly seeking varieties capable of combining both yield and quality with stronger all-round agronomics, which is why Vibe has attracted so much interest."

According to Mark, that's where the variety stands out most. "If milling premiums are tighter, consistency becomes even more important," he says. "Vibe appears

to outperform Crusoe when it comes to reliably achieving milling specification, while also offering a higher yield and stronger disease package."

Alongside its protein credentials, Vibe brings a combination of good septoria resistance, strong yellow rust resistance and useful drilling date flexibility. Its relatively slow development through the winter means it can fit comfortably into a range of drilling situations, helping growers spread workload without compromising crop performance, says Matt.

Elsewhere, the conversation is increasingly turning towards flexibility. While feed wheat remains the dominant market for many growers, increasing pressure on input costs is encouraging growers to consider varieties which can achieve a premium to push profitability. That's helped maintain interest in the Group 2 sector, where growers can combine strong yield performance with the potential to access quality premiums where market conditions allow.

According to Matt, KWS Arnie is a good example of how that balance is evolving. As the highest-yielding Group 2 on the Recommended List, it offers feed level yields, while retaining the ability to attract a premium where opportunities exist.

"Arnie fits that slot really well," he says. "It's yielding at a level comparable with many popular hard Group 4 varieties but still gives growers the opportunity to access Group 2 premiums. KWS Arnie has looked exceptional all season."

Zak believes that flexibility is becoming increasingly important as growers seek to balance risk and reward. "You could grow Arnie, achieve the premium and that's great," he says. "But if you don't, you still have a very good wheat underneath it."

Alongside its yield potential, Arnie has attracted attention for its consistency and disease profile, with strong performance in trials this season helping to reinforce confidence in the variety's ability to deliver across different growing conditions.

A similar theme can be seen within the Group 3 sector. Although the domestic biscuit wheat market accounts for only a relatively small proportion of total UK wheat demand, Group 3 varieties continue to attract interest because of the breadth of end markets available to them.

Export opportunities, distilling demand and feed markets all contribute to their attractiveness, helping growers to avoid becoming overly reliant on a single outlet. "The beauty of the Group 3 market

is its end-market flexibility," says Matt. "Growers have multiple options available to them which helps find a home, and increases chances of achieving a small premium. With suitability for all soft end markets, including a high rating for distilling, KWS Solitaire is arguably the most marketable variety on the RL."

That flexibility underpins interest in KWS Solitaire, currently the highest-yielding Group 3 variety on the Recommended List. According to Matt, the variety performs consistently across a range of situations, including first and second wheat positions, across a range of drilling slots, and is the top performing biscuit in both eastern and western growing regions, whilst maintaining strong performance in the North. "It combines competitive agronomics with orange wheat blossom midge resistance, helping simplify pest management later in the season."

Matt believes Solitaire's appeal extends beyond yield, helping growers to spread risk across different market opportunities while avoiding overreliance on a single

"Different varieties bring different strengths, different genetics and different market opportunities."

Finding the right fit

When it comes to variety choice, Essex grower Jeremy Durrant believes there's no substitute for seeing how a variety performs in its intended slot

Farming 1214ha in Essex, Jeremy Durrant grows a rotation of wheat, barley, sugar beet, maize, beans and oats on predominantly heavy clay soils. The business also produces early-generation seed crops for KWS, meaning new varieties regularly pass through the rotation.

One of those was KWS Scope. "Scope came to us as a coded variety, so I knew absolutely nothing about it at the time," he recalls. "This is now our third year growing it and it's become one of our main varieties.

"In the first year we grew it, it was our highest yielder, so we decided straight away we were going to grow it again because it'd done so well for us."

Today, Scope forms a key part of the farm's wheat portfolio, which typically consists of five or six different varieties, and that reflects Jeremy's wider philosophy around managing risk through variety choice. "We like to spread risk and use different varieties for different slots in the rotation. Scope is our early-drilled variety, and we also use it as a second wheat. It's performed as well as anything in that position."

That approach has become increasingly important as seasonal conditions continue to fluctuate, he continues. "We tend to stick with four core varieties that are tried and tested, but there's always some trial and error involved. Different varieties suit certain

situations and different drilling windows. Some can look fantastic all year but don't necessarily suit our climate or soil type when it comes to grain fill."

By contrast, Jeremy describes Scope as a reliable all-rounder. "It just suits the farm, the climate and the soil type," he says. "Its disease profile is easily managed, and it's been our highest-yielding variety for the past two years."

And while harvest is still a few weeks away, early signs suggest another strong performance could be on the cards. "Before we put the combine in, I'd say it looks like our best variety again this year," he concludes. "It's been a good and reliable for us and we'll continue to grow it for a while yet."

► variety or source of resistance.

However, while yield and quality often dominate variety discussions, some characteristics only become truly valuable when conditions turn against growers.

Standing power is a good example. After several seasons with relatively limited lodging pressure, it's easy to overlook the impact a flattened crop

can have on harvest efficiency, grain quality and final output. "We haven't had a major lodging year for a while, but they do happen," says Mark. "And the cost of a crop going flat can be significant."

ADDITIONAL BENEFITS

It's one of the reasons why KWS Scope continues to attract attention within the hard Group 4 sector. Although not the outright highest-yielding option available today, it combines exceptional straw strength with high specific weight and strong septoria resistance, creating a package focused on reliability as much as outright performance.

Under the high septoria pressure of 2024, Matt says Scope remained among the strongest-performing varieties in trials, highlighting the value of robust agronomics when conditions become difficult.

The variety also offers useful flexibility around drilling date. Its prostrate growth habit and relatively slow development through the winter make it particularly well suited to earlier drilling situations, helping growers to spread establishment workload across larger wheat areas.

Ultimately, all three experts believe variety choice is becoming increasingly farm-specific. According to Matt, growers should focus on selecting varieties that suit individual positions within the rotation rather than looking for a single solution across the whole business. "Having a mix of varieties on farm is really important," he says. "Different varieties bring different strengths, different genetics and different market opportunities.

"Selecting the right variety for the right position on farm, rather than going wholesale into one variety, is becoming increasingly important given the challenges around farm economics at the moment."

Mark agrees, adding that recent yellow rust developments have only reinforced the importance of managing risk. "There will always be risks people are prepared to take," he concludes. "But it's the surprises people don't like.

"That's why having a balanced portfolio of varieties matters. It's about not having more of any one variety than you can comfortably manage and making sure you have the flexibility to deal with whatever the season throws at you." ●



Matching genetics to objectives

Geography, market access, drilling strategy, disease pressure and rotational requirements can all influence which characteristics matter most, says Agrovista's Zak McClland.

Productivity matters

In this new series, Productivity matters, CPM has teamed up with KWS to examine the breadth and depth of how optimum productivity can be achieved within arable rotations.



Challenging the norm and defying the odds

"Defiance has the highest untreated yield on the winter wheat RL full stop, which is a great asset to have."

RON GRANGER

Two new high-yielding Group 4 wheat varieties are fighting for prime positions to become the latest on-farm favourites. *CPM* takes a look at the stats for LG Defiance and LG Challenger.

By Janine Adamson

Widely recognised as both consistent and high yielding, Group 4 varieties – hard and soft – account for 53% of the total UK wheat area. Perhaps unsurprisingly, this makes for a crowded space when it comes to varietal choice, with 17 options battling it out on the current Recommended List.

Considering hard Group 4 options specifically, five new varieties joined the RL back in December. However, Limagrain believes its two latest offerings – LG Defiance and LG Challenger – have the potential to come out on top this season.

So what makes these two feed wheats such strong contenders? According to Limagrain's Ron Granger, both have high yield potential and performed consistently in trials despite erratic conditions during 2023-2025. "Breeders have raised yield performance across all end group sectors and while that's quite an achievement, hard feed varieties still have the edge for yield potential," he says.

Looking at parentage, Ron comments that a variety's pedigree appears to matter less now, although both options come from proven lines. "Defiance is a cross between KWS Extase and Gleam,

whereas Challenger is (Gravity x SY Invisor) crossed with LG Skyscraper," he explains.

The result? Top performing varieties, it seems. In fact, with a UK treated yield of 108.8 of controls, Defiance places second within the hard Group 4 category. "However critically, it has the highest untreated yield (95) on the winter wheat RL full stop, which is a great asset to have in any variety," notes Ron. Following closely behind is Challenger, scoring 107 for UK yield with an untreated yield of 93.

While output remains a driving factor in varietal choice, more attention is being given to disease resistance, as demonstrated during the past 18 months or so. For yellow rust – the disease currently most talked about – Defiance scores 8 and Challenger 7, which Ron says are highly competitive ratings.

"Particularly if you compare these scores with existing popular varieties which have been knocked back due to the Yr15 breakdown. But equally, we mustn't forget about septoria – there was a lot in crops during the winter. Plus, with thunderstorms across the country in June, there was the opportunity for it to really take off if fungicide inputs had been reduced at T2."

For septoria, Defiance scores 6.3 and Challenger 6.1. Both rate 5 for brown rust, 7 for mildew, and [5] for eyespot, and offer orange wheat blossom midge (OWBM) resistance.

Ron says something that may be questioned by growers is that Defiance has a 5 rating for resistance to lodging with PGR, but he points out that this is based on very limited AHDB data. "In contrast, in breeder trials, we've not found this to be a particular issue and with good husbandry management, the variety certainly responds and shouldn't be a problem."

He acknowledges that Defiance is a



Solid performers

Limagrain's Ron Granger says LG Defiance and LG Challenger have high yield potential and have performed consistently in trials despite erratic conditions during 2023-2025.

► tall strawed variety and as a result, will require a comprehensive PGR programme. “As my advice always is, a split PGR approach will deliver the best results. With the subsequent reduction in height, it should have no impact on the final yield potential of the variety – a similar story to LG Skyscraper or LG Redwald.”

In contrast, Challenger scores 7 for resistance to lodging with PGR, while both score 7 for resistance to lodging without PGR.

However, the most significant difference between Defiance and Challenger is sowing date, points out Ron. While Defiance is suited to drilling from late-September onwards, Challenger can be planted earlier, he adds, as it has the agronomic characteristics of being a higher tillering variety combined with a slower spring growth.

“Challenger has a wide sowing window from mid-September right through to post-November but performs particularly well in the earlier slot. Both varieties presently sit as two of the highest yielding varieties for the second wheat situation – although limited data, this is a strong attribute to have for on-farm placement,” suggests Ron.

LG DEFIANCE AND LG CHALLENGER AT A GLANCE		
	LG Defiance	LG Challenger
Yield (%) treated controls		
UK treated	109	107
UK untreated	95	93
East	108	107
West	110	107
North	[109]	[109]
Grain quality		
Specific weight	77.0	78.6
Protein content	10.5	10.2
Hagberg Falling Number	260	295
Agronomics		
Resistance to lodging without PGR	7	7
Straw height without PGR (cm)	97	94
Ripening (+/- Skyfall)	+1	+1
Disease resistance		
Mildew	7	7
Yellow rust	8	7
Brown rust	5	5
Septoria	6.3	6.1
Eyespot	[5]	[5]
OWBM	R	R

profi IN THE NEXT ISSUE....

REPORT



Using solar power to reduce crop drying costs

DRIVING IMPRESSION



New Claas Axion 8.290 tractor

USED MACHINERY



Kuhn Megant tine coulters drills

- ❖ Enjoy thirteen issues of profi magazine every year ❖ SAVE up to £50*
- ❖ Free access to our entire 30-year in-depth test archive, including the unique DLG Powermix tractor tests
- ❖ PLUS, complimentary access to the digital editions of Agricultural Trader & Farm Machinery every month

EASY WAYS TO SUBSCRIBE

1. GO TO SHOP.KELSEY.CO.UK/PFIXAD 2. CALL US 01959 543747 QUOTE PFIXAD

LINES OPEN MONDAY-FRIDAY, 8:30AM-5:30PM. CALLS CHARGED AT YOUR STANDARD NETWORK RATE. £50 SAVING APPLIES TO UK ANNUAL DIRECT DEBIT OFFER.



SCAN TO SUBSCRIBE

Providing a perspective from the trade, Frontier Agriculture's Dr Kirsty Richards says 80% of a crop's potential is driven by putting the right genetics in the right place at the right time. "This helps to reduce risk and build resilience," she adds.

"Defiance is a good high yielding option with proven performance in later drilling conditions. It offers excellent grain quality, including high specific weight, to meet market requirements even under tough conditions.

"Challenger meanwhile appears appropriate for northern sites that require earlier drilling dates, so should be planted in areas with low grassweed burdens. Being slower developing, it avoids being too lush and therefore at risk of lodging.

"The yellow rust scores for both really stand out on the current RL, as well as their mildew ratings."

While Challenger makes the grade for early drilling, it also performs well when sown later too, as proven by Lincolnshire farmer, Ben Sharp.

Ben, who manages 250ha of his own cropping plus additional rented land, grew 20ha of a Challenger seed crop in 2025. Despite not being drilled until early November into difficult conditions, he says it went on to be his best-performing variety.

Yields hit a maximum 12t/ha and averaged around 8t/ha overall, which he describes as a 'fantastic result' given the wet autumn, followed by drought-like conditions through much of the growing season.

"It was on lighter soil as well, which wasn't the best in a year like that, but the crop still produced a very good specific weight and overall, we were really pleased with it. It's not a hugely vigorous variety, but still seems to tiller and cover the ground well, and once it gets going in the spring, it grows strongly."

Having been impressed with Challenger's performance last season, Ben is growing the variety again this year, as a first wheat after beans for his own use, sown in the main mid-October window on medium-bodied land.

"The crop established well last autumn, and looks fabulous so far, so I'm keen to see how it performs in a more normal growing season. If Challenger does well again this harvest, it'll probably be the mainstay of our winter wheat area next year," he comments.

Over at Rob Atkins' farm in Uttoxeter, Staffordshire, 5ha of Defiance is being put through its paces. "Each year I like to try a new variety and if it ticks all of our boxes, we keep it," explains Rob.

Having seen Defiance in trials and at Cereals Event last year, he says he thought he'd give it a go. "While I'm looking for a high yielding crop, it has to be clean so there's the potential to cut input costs.

"This spring, we were able to stretch the fungicide applications a little on Defiance as we found minimal yellow rust or septoria in the crop. That's exactly what I'm looking for to reduce costs and maximise yield," he states.

Rob notes that following the crop being drilled on 29 September to combat the typically wet conditions the farm experiences, the crop demonstrated excellent vigour. Then by early May, it was the best crop on his farm, he says. "Genuinely, it was so clean," he concludes. ●



Farmer perspective

According to Ben Sharp, LG Challenger seems to tiller and cover the ground well, and once it gets going in the spring, it grows strongly.

KWS EXTASE

GROUP 2 WINTER WHEAT

The complete package with Septoria protection built in!

- **High** untreated yield and exceptionally consistent across sites and seasons
- **A truly** complete package in terms of disease resistance and quality
- **Highly** vigorous growth habit over winter, making it well suited to later drilling situations

170 years of
KWS



Top of the class

“Yield remains important, but growers are looking at the bigger picture.”

SARAH HAWTHORNE

Having topped the latest AHDB Recommended List for gross output, DSV's Dompteur has quickly attracted attention. CPM reveals more about this high performing oilseed rape variety.

By Charlotte Cunningham

A name meaning 'tamer' in French might suggest a variety content to quietly get on with the job. Yet having topped the latest AHDB Recommended List for gross output, DSV's Dompteur appears to have other ideas...

At a time when oilseed rape growers are once again looking at how to maximise the crop's potential within the rotation, the hybrid has arrived with credentials that extend well beyond yield alone – and according to DSV's Sarah Hawthorne, that's increasingly where the conversation is heading.

“Yield remains important, but growers are looking at the bigger picture,” she says. “They want varieties that can establish well, cope with seasonal challenges and protect yield potential throughout the season.”

That demand for resilience has become increasingly important as production costs continue to rise and weather patterns become harder to predict. While confidence in OSR has improved in recent seasons, growers remain acutely aware that success often depends on a relatively

small number of key decisions – with variety choice among the most important.

New to the 2026/27 AHDB Recommended List, Dompteur entered the market with some eye-catching figures. The hybrid achieved a UK gross output of 107% of controls, rising to 108% in northern trials, alongside an oil content of 46.3%.

But while those numbers may be what first catch growers' attention, Sarah believes they only tell part of the story. “Performance is about much more than a single headline figure,” she explains. “Ultimately, growers require confidence that a variety can deliver across a range of conditions – not just in one season.”

Central to that is the variety's disease package, and Dompteur combines turnip yellows virus (TuYV) resistance and pod shatter resistance with ratings of 8 for both light leaf spot and stem canker. It also carries DSV's dual phoma resistance package, combining the RLM7 resistance gene with a second source of phoma resistance.

The approach reflects a growing recognition that disease populations continue to evolve, placing greater

emphasis on stacking resistance mechanisms rather than relying on a single source of protection. “We know pathogens aren't standing still,” says Sarah. “By combining different forms of resistance, we're looking to provide broader protection and help maintain durability over time.”

Adding to Dompteur's credentials is strong autumn vigour, combined with equally high spring vigour and high winter hardiness, creating a package designed to support crops through some of the most critical stages of development. “Establishment remains one of the biggest challenges for many growers,” highlights Sarah. “Strong autumn growth helps get crops away, while spring



Headline figures

New to the 2026/27 AHDB Recommended List, Dompteur has entered the market with some eye-catching figures, believes DSV's Sarah Hawthorne.



Prime time for Dompteur

National technical manager at Frontier Agriculture, Dr Kirsty Richards, believes Dompteur is arriving at a time when confidence in OSR is beginning to recover.

vigour supports recovery and canopy development as conditions improve.”

Importantly, that vigour doesn’t come at the expense of crop management, and Dompteur remains relatively early flowering while maintaining a mid-early maturity profile – helping to deliver an even and timely harvest without becoming excessively forward.

Sarah believes it’s this combination of traits that best reflects the direction of modern OSR breeding. “There was perhaps a time when growers felt they had to compromise between agronomics and performance,” she says. “Now the challenge is bringing those characteristics together in a single variety.”

From a wider industry perspective, National technical manager at Frontier Agriculture, Dr Kirsty Richards believes the variety is arriving at a time when confidence in OSR is beginning to recover.

Better establishment during the past two seasons, combined with lower anecdotal pressure from cabbage stem flea beetle and pigeons, has renewed interest in the crop, she suggests. “OSR remains one of the strongest break crops available,” notes Kirsty. “It helps disrupt pest and disease cycles, provides an excellent entry for first wheat and spreads workload through the season due to its early drilling and harvest window.”

Beyond its rotational benefits, she highlights the crop’s contribution to soil health and biodiversity, with extensive rooting helping improve soil structure and drainage, while flowering crops provide a valuable source of pollen and nectar for insects.

However, she stresses that successful establishment remains fundamental to realising that potential. “Moisture at drilling will be the key factor this autumn,” she says. “Where growers can establish a strong crop quickly, they’re giving themselves the best chance of success.”

View from the field

Does Dompteur deliver when it matters?

While Recommended List figures and technical specifications provide an indication of potential, perhaps the most important test is how a variety performs in the field, and for Suffolk grower Henry Ruffle, choosing a new OSR variety ultimately comes down to just that.

Farming with his family at John H Ruffle & Sons, Henry drilled 24ha of Dompteur last autumn after winter wheat. Although the crop went in later than originally planned, he says waiting for rain before drilling proved the right decision. “We’ve learnt the hard way not to chase drilling dates if conditions aren’t right,” he explains. “The moisture arrived, we travelled, and the crop got away well.”

The field was established using a top-down cultivation system before being rolled and sown with a Väderstad drill. Chicken muck was also applied to support early growth.

Historically, Henry had favoured conventional varieties but says improvements in hybrid performance prompted him to reassess that position. “Yield is king – if you’re growing OSR, you have to give yourself the best opportunity of making it pay.”

Against that backdrop, Kirsty believes the industry’s focus on genetics is well placed. “We’re seeing newer varieties combine higher yield potential with stronger agronomic characteristics,” she says. “Growers are increasingly looking for varieties that can help reduce risk while maintaining output, and that means traits such as disease resistance, vigour and harvest security are becoming just as important as headline yield figures.”

For Frontier, that combination of traits is one of the reasons Dompteur has been included within its OSR scheme, which focuses on selected hybrid varieties alongside management approaches designed to improve establishment success. “OSR still has a huge amount to offer within the rotation,”

That focus on performance was one of the factors that drew him towards Dompteur, but it’s the crop’s behaviour in the field that has left the biggest impression. Despite being surrounded by woodland – and therefore exposed to significant pigeon pressure – the crop established rapidly and held its own throughout the autumn. “Once it got going, the pigeons simply didn’t stand a chance,” he says.

Strong spring growth has been another standout feature. In fact, the crop moved forward so quickly that Henry altered his usual nitrogen strategy, reducing applications from three splits to two. “It’s been very vigorous,” he says. “You could see it wanted to get moving.”

Aside from a few weaker patches in one corner of the field, he describes the crop as largely straightforward to manage. “It’s been one of those crops that hasn’t really caused any headaches,” he adds.

With the crop yet to meet the combine, Henry’s reluctant to draw firm conclusions. But after a season that has tested many crops in different ways, the variety has made a positive first impression. “Harvest will tell us the full story. But up to now, it’s done everything we’d hoped it’d do.”

concludes Kirsty. “The challenge is giving growers the confidence to realise that potential. But varieties that combine yield progression with stronger genetics and greater resilience will play an important role in that.” ●

DOMPTEUR AT A GLANCE	
Gross output (%)	
UK	107
East/West	107
Disease	
Light leaf spot	8
Stem canker	8
Turnip Yellow Virus (TuYV)	R
Agronomy	
Pod shatter resistance	R
Resistance to lodging	7.9
Stem stiffness	8
Earliness of flowering	8
Earliness of maturity	5
Height (cm)	161
Oil content (%)	46.3

Source: AHDB Recommended List 2026/27

OSR innovation

CPM would like to thank DSV for kindly sponsoring this article and for providing privileged access to staff and materials used to help put the article together.

Upping the ante in oats

"All-in-all, from what we've seen so far, Rannoch is like Mascani but with better yields."

BRIN HUGHES

As Senova continues to dominate the winter oats Recommended List, can its latest offering finally entice growers away from stalwart Mascani and add much-desired diversity into the market? *CPM* reveals why hopes are high for this new release.

By Janine Adamson

When a variety ticks all of the desirables for both a grower and the end user, inevitably, it can result in firm staying power. In the case of time-honoured Mascani, that's translated to more than two decades of dominance – driven mainly by its exceptional milling quality and consistency.

While there are many positives from growing something familiar, relying on one variety alone is risky business, particularly in the face of shifting pathogen and pest threats. Equally, where significant advancements have been made in other cereal crops – from yield potential to disease resistance – is it time for winter oats to play catch-up?

With a portfolio including stalwart Mascani and relative newcomer Cromwell, Senova believes it's finally hit the sweet-spot in its latest release, Rannoch. Offering enough familiarity for growers plus an uplift in yield, and kernel content to catch the millers' attention, sales manager, Hugh Harley, believes it deserves to achieve market breakthrough.

"Rannoch is a big step forward. When you consider that its untreated yield is virtually on a par with the treated yield of

the country's most popular oat variety, it highlights what this introduction represents and the breeding progress that has been made," he says.

And arguably, the numbers speak for themselves – with a treated yield of 106 and an untreated yield of 92, Rannoch has a 4% advantage over Cromwell and a 10% advantage over Mascani. This is then combined with a kernel content of 74.5%, a specific weight of 51.7kg/hl, and low screenings of 3.3%.

So the question is can Rannoch succeed, to build on Cromwell's progress so far, and finally break the Mascani spell? According to Brin Hughes of Richardson Milling, Mascani 'just works', therefore a new variety has to at least match and ideally exceed its performance.

"Mascani's quality is what makes it a favourite, particularly those crops sourced within the mill's immediate catchment. In ways, it's boringly consistent – high spec weight, low screenings, gives up its hull easily with low hulling losses.

"From a miller's perspective, we'd like to see Mascani but with higher yields for the grower, which we're starting to see with Cromwell and now Rannoch," he says.

In Brin's opinion, Cromwell is a good variety with similar quality credentials to Mascani, but poses higher screenings through the mill. From a visual perspective, it also appears completely different, he notes.

However, having tested Rannoch in the mill's labs during the past few years, he says it appears promising. "In last year's field trials, as a crop, Rannoch looked very similar to Mascani – it tillers the same and looks similar in height and colour.

"As for its quality, it has similar spec weight and screenings to Mascani, as well as good hullability and low hulling losses. But, its stand-out has to be the yield uplift – we recorded a 1t/ha improvement from a sensibly-drilled,



Bolstering oats

Brin Hughes is pleased breeders are committed to bringing new winter oat varieties to the market because the quality is always there compared with spring oats.

The story behind Rannoch

How breeders achieved such a significant step up

It's taken a while to successfully balance yield with grain quality in winter oats, but the team at IBERS at Aberystwyth University has finally achieved it with Rannoch, says plant geneticist, Dr Catherine Howarth.

With a proven track-record for delivering popular oat varieties – IBERS also bred Mascani – it's been a long time coming, she adds. "The objective was to combine excellent grain quality for millers with enhanced yield and improved disease resistance for growers – somewhat the Holy Grail.

"The cross was first made back in 2013 followed by selection and trialling over successive generations until a stable, high performing new variety was developed. This means it's taken more than 12 years to bring Rannoch to the market."

Catherine explains that the team, led by Dr Sandy Cowan, produces many core breeding lines as part of its development work. It was one of these that was then crossed with Mascani to deliver the uplift in performance.

And importantly, by using modern genomic techniques, IBERS can identify how related varieties are and what portions of the parent lines are present. Catherine points out that this is important to ensure greater genetic diversity and resilience against disease threats.

As such, while Cromwell was a significant move in the right direction for winter oats, Rannoch poses a true step-change, she suggests. "With Rannoch's excellent

disease resistance package including crown rust (7), this translates to its untreated yields matching Mascani when treated. It also has an excellent lodging score so ticks many boxes."

Ben Ling manages seed production at IBERS and says from day one in the field, Rannoch has been remarkably uniform. "We grew a pre-basic crop last season and have a crop in the ground again this year. It's looking very good thanks to Rannoch's excellent disease resistance, only requiring one fungicide. Equally, cereal leaf beetle and aphid damage has been minimal," he highlights.

Although it's hard to find any downsides of Rannoch, Catherine says its mildew score is average (4), but in-line with the rest of the varieties currently available on the Recommended List.

"The acid test will be when a mill run takes place later this year. However, there's a volume of robust data collected during the years that's already demonstrated its grain quality. We just need millers to accept the variety, which isn't always straight-forward," she adds.

Of course, the work at IBERS hasn't stopped with Rannoch, as demonstrated at this year's Cereals Event where Maunsell was unveiled. "Maunsell is an earlier maturing variety with a very good crown rust score," comments Catherine.

"There's an increasing demand for varieties with earlier maturity, particularly in Scotland where the harvest date of winter oats can prove a problem."



LESS RISK MORE REWARD

“A quality variety - **LG Challenger** delivered great yield & agronomics in a difficult year.. the full package!”

Ben Sharp,
Lincolnshire



LG CHALLENGER WINTER WHEAT

Delivers on grain quality, yield & agronomics

Highest yielding early driller

Stand out performance in the East,
West & North



lgseeds.co.uk/lg-challenger



Same but different
Cefetra's Kate Armstrong says in terms of growing Rannoch on farm and crop management, it's very similar to Mascani so has a level of familiarity about it.

RANNOCH AT A GLANCE	
Yield	
Treated	106
Untreated	92
Grain quality	
Specific weight	51.7
Kernel content	74.5
Screenings (% through 2.0mm)	3.3
Agronomics	
Resistance to lodging without PGR	-
Straw length without PGR (cm)	136
Ripening (+/- Mascani)	0
Disease resistance	
Mildew	4
Crown rust	7

**Source – AHDB Recommended List*

INYS

HYBRID 6 ROW WINTER BARLEY - FEED

Introducing our first hybrid barley

- **Very** high-yielding barley, 107% of controls
- **Lowest** brackling percentage (9%) of all hybrid barleys on the Recommended List
- **Very** good resistance to lodging



early crop, with consistent yields across the entire drilling spectrum,” he adds.

While Richardsons will remain pro Mascani for now, Brin says confidence is high in Rannoch, and he’s looking forward to assessing the performance of commercial crops. “All-in-all, from what we’ve seen so far, it’s Mascani but with better yields.

“Importantly, we’re pleased that breeders are committed to bringing new winter oat varieties to the market. The quality is always there compared with spring oat varieties, as well as higher yields.”

Cefetra’s Kate Armstrong has also been impressed with Rannoch, with some of the company’s growers involved in a 1000t pilot crop for Richardson Milling. She agrees that the variety looks similar to Mascani but with the benefit of improved yields.

“In terms of growing it on farm and crop management, it’s very similar to Mascani so will have a level of familiarity about it. We hope it’ll deliver security,” she says.

Among its agronomic credentials are a high crown rust score of 7 and a mildew rating of 4. It boasts stiff straw and scores a 7 in resistance to lodging.

According to Kate, growers want to see progression in winter oat varieties. “But without breeders investing in minority crops, we won’t see improvements on-farm, and then volumes will struggle even further.

“The winter oat area is smaller than spring oats, but end users remain committed to winter-planted crops. Hopefully Rannoch will appeal to millers with its quality grain, and reinforce that support of certified seed,” she concludes. ●

Covering the carbon cost



“Cover crops must be viewed as part of the whole farming system.”

PETE BERRY

Cover crops are often promoted for their benefits to soil health, water quality and erosion control, but what role can they play in reducing the carbon footprint of arable systems? *CPM* explores the latest ADAS research.

By Charlotte Cunningham

Cover crops have become an increasingly familiar feature of UK arable rotations, valued for protecting soils, improving structure and retaining nutrients over winter. But as carbon accounting becomes an increasing priority for growers and supply chains, attention is also turning to their role in reducing greenhouse gas emissions.

According to ADAS crop physiology consultant, Ben Hague, understanding where emissions originate within crop production is key. “Nitrous oxide and carbon dioxide are the main drivers of greenhouse gas emissions associated with crop production,” he explains. “Nitrous oxide has a warming impact around 265 times greater than carbon dioxide, so reducing nitrogen losses is a major opportunity for reducing the carbon footprint of arable crops.”

Data from ADAS’ YEN Zero network

highlights the challenge, with Ben noting that carbon footprints range from around 750kg CO₂e/ha for pulse crops to more than 2500kg CO₂e/ha for high nitrogen-demanding crops such as winter wheat and winter oilseed rape – with nitrogen fertiliser accounting for much of those emissions. “As such, reducing the nitrogen input within crops is the big lever to reduce the overall carbon footprint.”

Cover crops can contribute by capturing nitrogen that might otherwise be lost through leaching, and according to ADAS’ head of crop physiology Pete Berry, this is where their greatest carbon benefit lies. “The majority of the benefit is going to come from reducing fertiliser use, and that’s the main route for reducing carbon emissions,” he explains.

ADAS research has shown a well-established cereal cover crop can typically take up around 45kgN/ha, while brassica and legume mixtures may capture as

much as 90kgN/ha. However, success depends heavily on establishment timing. “We’re really looking at establishing before early September to take up these levels of nitrogen,” says Pete. “Anything later than mid-September significantly reduces nitrogen uptake and the potential benefits.”



Great carbon benefits

Cover crops can contribute by capturing nitrogen that might otherwise be lost through leaching, and according to ADAS’ head of crop physiology Pete Berry, this is where their greatest carbon benefit lies.

Making every hectare count

As growers look to reduce inputs without sacrificing output, three years of farmer-led trials have highlighted the potential of cereal-legume intercropping

While cover crops help retain nutrients already within the system, intercropping offers another route to improving nitrogen use efficiency by growing cereals and pulses together. Results from the Europe-wide LEGUMINOSE project suggest the approach can reduce reliance on fertiliser while improving productivity, grain protein and system resilience.

As first reported in August 2023 issue of *CPM*, the project involved partners from nine countries, with UK work delivered through a Soil Association Innovative Farmers Field Lab. Over three years, 26 farmer plots were established, with 17 producing usable results after weather disrupted some sites. Despite contrasting seasons, the Soil Association's Jerry Alford says that one finding has remained consistent. "In every year an intercrop produced more crop per hectare than had we had the monocrops," he states.

Across the three years of trials, intercrops produced an average of 20% more output from the same area of land, with yield advantages ranging from 3% in the driest season to 27% in more favourable conditions.

For Jerry, consistency is one of the main strengths of the system. "The dry countries seem to have a much higher response to intercropping than wetter countries," he explains. "If we're moving to a time where dry springs become normal, it may be that intercrops provide more resilience."

That resilience is something Norfolk estate manager Matt England has seen first-hand on Fring Estate's



More output from intercropping

Across the three years of LEGUMINOSE trials, intercrops produced an average of 20% more output from the same area of land, with yield advantages ranging from 3% in the driest season to 27% in more favourable conditions, explains the Soil Association's Jerry Alford.



organic land. "The first spring bean and oat intercrop immediately stood out. They were the best crop on the farm," he says. "They just looked healthier and better than everything else the whole way through."

Since then, he's trialled combinations including peas and oats, beans and oats, winter beans and oats, peas and barley, and more recently wheat, beans and linseed as part of the Field Lab.

One of the best performers was a pea and barley intercrop, delivering a gross margin of around £2000/ha. "We had a lot of peas in it which sold for £590/t; the barley sold for £280/t at 4.5t/ha, so it was a really successful crop."

Jerry believes the success comes from the complementary nature of the two crops. "In a bad year for pulses, the cereals tend to hold up, and in a better year for pulses they can really perform. You have that resilience coming from the mixture."

University of Reading's Professor Tom Sizmur, who leads the university's involvement in the project, agrees. "The intercrop hedges your bets," he explains. "In some years the cereal might do well and in other years the pulses might perform."

Alongside yield improvements, the trials also highlighted gains in nitrogen use efficiency. Across the wider European project, grain protein levels averaged around 1% higher than equivalent monocrops, while UK work also showed improvements in cereal grain protein.

Tom says this reflects the interaction between cereals and legumes below ground. "The legume is fixing nitrogen from the atmosphere in the root nodules and some of that nitrogen can be transferred to the cereal," he explains.

At the same time, the cereal competes strongly for soil nitrogen, encouraging the pulse crop to fix more atmospheric nitrogen and improving overall nitrogen use efficiency. However, these benefits decline as fertiliser rates increase.

“Some of the benefits that you get from the intercrops start to diminish as the fertiliser rate increases,” says Tom.

Jerry believes this demonstrates where the system is likely to fit best. “It certainly looks like it performs in organic and low-input systems better,” he says.

The environmental benefits extend beyond nitrogen use, and University of Reading research has demonstrated reductions in nitrate leaching and nitrous oxide emissions compared with monocrops. Ongoing work is also investigating whether intercrops could increase soil carbon storage through the interaction of cereal and legume residues.

The trials went on to highlight potential pest management benefits, and although no insecticides or fungicides were used by UK trialists, only one grower reported disease levels high enough to consider treatment.

Monitoring also found greater numbers of beneficial insects within intercrops, points out Jerry. “By having that mixture, we’re bringing the beneficials in a lot faster.”

Tom adds that pea and oat intercrops contained significantly higher levels of parasitised aphids than monocrops, suggesting natural enemies may help suppress pest populations. He notes that the cereal component can also provide valuable physical support for the pulse crop. “When you look at the peas in the intercrop, the pea plant is a lot straighter because it uses the oat as a scaffold,” he explains. “The oat plant helps hold up the peas, and so you can harvest more of it with the combine.”

However, for growers considering the approach, the greatest challenge may come after harvest. “The key is knowing what you’re going to do with it at the end,” says Matt.

While growing the crop is relatively straightforward, separating species can be expensive and time consuming, particularly for premium human consumption markets. Nevertheless, Matt believes the system is worth exploring. “Just try it on a small scale,” he advises. “Even a hectare block in a field.

“We’ve seen that crops respond better when grown together. Each species has requirements for nutrients, sunlight and moisture at different times. The more diversity you can get within a single point in the rotation, the better.”

► The effect on nitrate leaching can also be dramatic, explains Pete. In one ADAS trial on a light, freely draining soil, nitrate losses from uncropped stubbles reached 90kgN/ha over winter. Where cover crops achieved 80-90% ground cover, losses fell to less than 10kgN/ha.

Another study found cover crops retained 70-80kgN/ha within crop biomass by spring, protecting nutrients until they could potentially be used by the following crop. “The cover crop has protected that nitrogen against nitrate leaching,” comments Pete.

Current UK guidance suggests a successful cover crop can justify reducing subsequent fertiliser applications by around 30kgN/ha. However, Pete stresses that this depends on mineralisation, with nitrogen release influenced by several environmental and management factors. “One of the most important things growers can do to maximise the chance of that nitrogen becoming available is to destroy the cover crop quite early,” he explains. “By quite early, we’ll be destroying it in January or February.”

Termination method also matters, with ADAS’ research suggesting herbicide destruction can improve nitrogen availability compared with some mechanical approaches. “We actually found that using glyphosate to destroy the crop is more effective at enabling the release of the nitrogen from the cover crop for the crop following it,” notes Pete.

Of course, cover crops aren’t without their own emissions costs. ADAS estimates greenhouse gas emissions associated with establishment and destruction range from around 20kg CO₂e/ha to more than 160kg CO₂e/ha, depending largely on species choice and management. “If you were simply broadcasting mustard seed and then using glyphosate herbicide to destroy it, then you’d be at the lower end of the range,” says Pete. “If you were using larger-seeded species such as peas or beans and mechanically destroying the crop by disking or chopping it, then you’re looking at more than 160kg CO₂e/ha.”

Even so, he argues these emissions remain relatively small when compared with the 700-2500kg CO₂e/ha carbon footprints typically associated with cash crops – particularly where cover crops allow nitrogen fertiliser savings.

However, cover crops don’t automatically improve following crop performance, and ADAS trials have recorded both yield increases and reductions, with management proving



Capturing nitrogen

When it comes to capturing nitrogen ADAS research has shown a well-established cereal cover crop can typically take up around 45kgN/ha, while brassica and legume mixtures may capture as much as 90kgN/ha.

the deciding factor. “Where we’ve seen a yield reduction following a cover crop, it’s been largely due to late destruction, often using mechanical methods in wet conditions,” says Pete.

Heavy soils can be particularly challenging, as large amounts of residue combined with wet weather can delay drilling, encourage slugs and compromise crop establishment, he warns. “It’s especially important in these cases to have a decent long window between destruction of the cover crop and establishment of the following crop.”

Mixed farms can also gain additional value by grazing cover crops, although this also requires careful management. ADAS has observed increased nitrate leaching where crops are grazed too tightly or too early, as nitrogen captured within the crop is rapidly returned to the soil through dung and urine. “If the grazing occurs quite early on in the winter, then we’ve actually seen quite a lot of nitrate leaching,” comments Pete.

To minimise losses, ADAS recommends grazing as late as practical while retaining at least 20% ground cover. “Our advice is that if you’re grazing and you want to minimise those nitrate leaching losses, then you should graze as late as possible in winter and also try to leave a bit of crop cover,” he adds.

While reducing carbon emissions is becoming an increasingly important objective for growers, Pete believes it should be viewed as one of several benefits associated with cover crops rather than the sole driver for adoption.

Reduced nitrate losses, improved soil protection, enhanced biodiversity and opportunities for winter grazing all contribute value, while many of the wider soil benefits become more apparent over time. “Cover crops must be viewed as part of the whole farming system,” he says. “When they’re managed well, the benefits go far beyond carbon alone.” ●

Listening in on nature



"The goal is to support growers to increase their awareness of the services that nature may be providing."

GEORGE CATERER

AI-driven wildlife sensors are helping growers to quantify on-farm biodiversity and evidence positive landscape-level changes. *CPM* learns more about Wilder Sensing.

By Janine Adamson

With increasing onus on what agriculture can deliver for nature, quantifying the true benefits of environmentally-focused actions could soon become a part of daily farm business for UK growers.

And rather than manual surveys by ecologists, a solution for continuous data capture and interpretation now exists, meaning full-scale biodiversity monitoring is just a few sensors away from becoming reality.

"Growers are fully accustomed to collecting data across the farm, yet until now, biodiversity has found itself

left behind, or isn't regularly updated," comments Wilder Sensing's George Caterer. "But by utilising bioacoustic technology, we can begin to understand what's happening at a landscape-level, evidence biodiversity and measure the impact of specific actions," he adds.

The concept began four years ago as a post-lockdown notion, recalls George. "The goal was to find a way to quantify biodiversity and improve data capture as interest was increasing in monetisation, similar to carbon credits.

"This meant finding an appropriate, accurate, scalable technology that



Providing evidence

The goal was to find a way to quantify biodiversity and improve data capture as interest was increasing in monetisation, explains Wilder Sensing's George Caterer.



Missing link

According to agronomist Todd Jex, unlike something like soil sampling, the industry isn't very good at capturing biodiversity.

could deliver what we required, which ultimately led us to bioacoustics – using sound technology to record, store and analyse large collections of animal communication data.”

The starting point for this was birds, he adds. “They’re quite an emotive taxa and appeal to much of the general public. They’re also a fantastic reference for the health of an ecosystem because they cover all levels of the food chain.”

Now known as BirdSense, the system is data-based, where growers utilise an off-the-shelf recording device and an SD card. Recordings are then uploaded to the cloud which are interpreted by Wilder Sensing within 48 hours, using AI to identify different species and their activity levels. Growers can then view, explore and download their high-resolution results from the same portal.

Because Wilder Sensing licenses the BirdNET database – an open-source research project developed by Cornell Lab of Ornithology – it can tap into a reliable reference recording for every UK bird species.

George highlights that without AI, it’d be near-on impossible to fully process the recordings. “That’s been the barrier for this type of work so far. But now, because it’s much easier, it’s opened up the opportunity to truly

understand activity levels and compare these across sites or timeframes.”

The technology has continued to develop too, he notes, with the launch of BatSense, which works to similar principles. The team has also recently introduced MothSense, although this is image-based, says George.

“MothSense operates using a solar-powered camera and a UV light to attract species to a base plate. A photograph is taken every two minutes and then similar to our other systems, AI analyses the data for automated identification of around 275 macro moth species.

“While they’re often downplayed, moths are a nocturnal pollinator and therefore have the potential to be an important species for arable growers.”

Critically, by utilising all three systems, it’s possible to assess impact cross-taxa, raises George. “For example, we can measure how moth populations may impact bird life, and so on. To look at this in more detail, we’re launching the collaborative WildSense pilot project this summer, which will run across seven UK sites.

“The overall goal is to support growers to increase their awareness of the services that nature may be providing,” he urges.

Agrii agronomist and Agri-TechE Ambassador, Todd Jex, has been exploring Wilder Sensing’s technology on one of his customer’s farms. He says the aim was to use recorded bird song to quantify biodiversity across two contrasting farming systems.

With a mix of regenerative and conventional tillage systems at Barton Farm in Dorset, this provided an ideal opportunity to gather comparative data, says grower, Oli Harris.

“Originally, we adopted no-till regenerative farming practices for financial reasons to scale up the business. Contractors were doing much of the work, and it was a way to bring all operations back on the farm and take control of arable production.

“Very quickly, it became a passion to see the environmental benefits the new system was having,” he explains.

Overseen by Todd, two recording devices were set up at the farm for a six-day trial, tallying around 20,000 bird calls. Looking at the data in more detail, the conventional field was

dominated by corvid and generalist urban birds, while at the regenerative field, there were more insectivorous and seed-eating birds. George highlights that one of the starkest comparisons was between skylark calls: the regen location had more than 4000 while the conventional had just 11.

Commenting on the monitoring, Todd says recording baseline data is a critical first step. “You require the baseline at the point of change to see what’s happening for good or bad. You can then make appropriate recommendations if things aren’t evolving the way we want them to,” he explains.

“The soil analysis we do is very in-depth; but biodiversity is the part we aren’t very good at capturing at the moment, and it’s such a massive part of it.”

Having conducted the trial, Oli says it’s reaffirming to see they’re doing the right things. “We’re tenant farmers and our landowners are keen to see us improve the environment. This data puts us in very good standing with them – it’s a great way to demonstrate that we farm sensitively to the environment,” he comments.

The trial at Oli’s farm was originally instigated by Agri-TechE. Director Belinda Clarke says they’re delighted with the success of the collaboration. “This kind of collaboration is what Agri-TechE is all about – bringing people

together to test and develop new technology in real world situations.

“It’s discussed at our events time and time again how researchers

and tech developers don’t have enough opportunities to apply their research or technology on farms. On the flip side, farmers are reluctant to give up their valuable time to beta-test something that may not have a value to them yet.”

As for the investment required to install Wilder Sensing technology, each system operates through an initial hardware cost from £150 per device, plus an annual subscription fee. George says he hopes by providing accessible technology, more growers will engage with biodiversity monitoring.

“However, this isn’t to replace traditional methods, it’s about supplementing existing ecological monitoring to empower growers and agronomists with actionable insights.” ●

“It’s a great way to demonstrate that we farm sensitively to the environment.”

Private network project update

Trials continue at Overbury Enterprises to understand how best to serve the farm with cost-effective, reliable connectivity

While a government-funded project that aimed to showcase the benefits of 5G private networks in agriculture has concluded, the work continues, to understand alternative connectivity options.

As reported in May 2025 issue of *CPM*, the original research centred around a collaboration between Virgin Media O2 Business and River Severn Advanced Wireless Innovation Region (RSPAWIR). It involved installing a 4G/5G private network at Cotswolds-based Overbury Enterprises to demonstrate how enhanced connectivity can boost crop production and environmental preservation.

Despite the proof-of-concept project being a technical success, because the work and funding was finite, the private network has since been decommissioned. However, in a bid to maintain the range of IoT devices



Applied research

Unless new technologies are tested on-farm in real-world situations, they'll never be as good as they could be, stresses Jake Freestone.

CPM first reported on the connectivity project at Overbury in its May 2025 issue.



installed at Overbury, alternatives are now being scoped, explains River Severn Partnership's Matt Smith.

"Once we learned that the maintenance costs from the original project were estimated to be substantial, therefore unviable for most commercial farmers, we wanted to find out whether a similar outcome could be achieved from scaling back, or using alternative sources.

"This led us to working with Virtuser's multi-network sims, which essentially assess all network providers in the local area and then cherry pick the best signal as well as LoRaWAN for some devices."

So far, the results seem promising, suggesting that rather than requiring a full 5G private network of their own, growers can power a range of sensors at various locations with improved consistency, using what already exists. Equally, it's hoped in time, 5G private networks will become more accessible as technology progresses, costs reduce and adoption increases.

Despite further work being required, farm manager Jake Freestone isn't discouraged. He says because so much of the technology is cutting edge, including the sensors that were installed at the farm, it's all still in development phase.

"Unless these technologies are tested on-farm in real-world situations, they'll never be as good as they could be. They have to be trialled in a practical environment, to enable them to move

from the lab to the farm," he comments.

As well as providing the sims required, Virtuser is also developing a cohesive digital dashboard to pull all of the sensor data outputs together. Although this was a key goal for the original project, it wasn't achieved within the timeframe allocated due to external barriers, explains Matt.

"But we can deliver that now at a more commercially-viable price-point by using relatively cheap software options," he adds.

For Jake, some of the sensors deployed during the original project have proven more useful than others. "With four nitrate water sensors now installed we can try to understand the true impact of our farming operation on water quality and pollution, segmenting our contribution from that of wider society's.

"If we are polluting the watercourse, we will know and can quantify that and hopefully rectify it. That's a huge win for us," he explains.

Jake also commends the success of the farm's pest sensors, enhanced weather stations and soil moisture sensors. However, one aspect that wasn't so useful on reflection, was water trough monitoring, he adds.

"But if I can see all of that useful information on one dashboard, then it'll make my life a lot easier day-to-day."

To conclude, Matt adds that the work at Overbury is very much continuing. "We're just being more mindful now of the costs involved."



WITH MARTIN LINES

Nature **NATTERS**

Different backgrounds, shared purpose

“As I write amidst the heatwave, the merry-go-round of life and

government is spinning ever-faster, and we await to see what comes next as Stephen Morgan steps into the role of Minister of State in Defra.

Constant churn and changing of roles in any workplace makes delivering long-term goals difficult. When someone is recruited for a new role or given new responsibilities, many would say a thorough understanding and knowledge of the industry is essential. But if someone has excellent leadership skills, dedication to the role, and an understanding of the challenges in front of them, I believe they can be a powerful actor.

There are many good examples where people have taken on roles with little industry-specific background but the ability to pick it up and make a difference. Think Andy Cato and George Lamb of Wildfarmed: a DJ and a TV star. But to be able to do this, people require time. To stay in roles long enough to get a good understanding of the bigger picture, the wider state of the industry and how it fits into our society and economy long term.

When recruiting to fill vacancies in our farms and businesses, sometimes we often hope to find someone very experienced to come in and hit the ground running. Yet sometimes it's the best option to bring in somebody with a different, complementary

Something picturesque from our farm to ponder.



skillset, and develop them in the role; someone without preconceived ideas or an outdated or jaded mindset. This provides a clean slate, an opportunity to educate them in the way we want them to deliver their work and the skills they'll require for it.

In my work, I speak to a lot of different farmers, and it's not uncommon for a grower to experience resistance when training an experienced farm hand, if they're teaching new approaches or using technology that the worker isn't used to. The somewhat familiar, 'that's not how I've always done it...' But without an attitude of openness and enthusiasm to learn, experience can limit one's mindset and complacency can set in.

In saying this, I'm not denying the fundamental importance of older generations' wisdom – we'd benefit from listening to our forebears more than we do. But in this agricultural transition we find ourselves in, there's a responsibility on the younger generations to

support older generations to adapt to the innovative new farming machinery and practices that'll help us to transition and build resilience during the coming years.

With so many changes in agriculture at the moment, with pressures being felt from extreme weather events, the bank balance and new government policies, the need to share alternative ways of working and pick up new skills quickly is becoming increasingly important. And yet we're an industry with an ageing workforce and little capacity to support apprenticeships and new entrants.

We have to continue to find ways of bringing new blood into farming, whether that's from apprenticeships, college and university courses, or from career changers who want to adapt their life skills and experience to new ways of farming. Some of the most innovative thinkers and farm business leaders haven't come from multiple generations of farming families, they're coming into the industry

from a different path and have a fresh perspective on where the future lies.

So whether we're welcoming people into our farm businesses from unconventional or non-farming backgrounds, or welcoming a new minister to Defra with little or no farming experience, it's worth remembering that there's more than one path into agriculture, and more than one kind of person who can succeed in it. ●

YOUR CORRESPONDENT

Martin Lines is an arable farmer and contractor in South Cambridgeshire with more than 500ha of arable land in his care. His special interest is in farm conservation management and demonstrating that farmers can profitably produce food in harmony with nature and the environment. He's also chair of the Nature Friendly Farming Network UK. @LinesMartin martin.lines@nffn.org.uk.

The regen convo continues

"I now don't worry about tramlines, take-all and slugs have disappeared, and water draining from our wheat field is clean."

SIMON COWELL



Ten years after the Cherry family introduced the industry to Groundswell, more than 10,000 regen aficionados flocked to Lannock Farm for the annual two-day event. *CPM* attended a host of sessions to pick over the bones and reveal the pros and cons of farming more regeneratively.

By Mike Saull

Groundswell is impressive and the enthusiasm of its visitors infectious. Where else could someone embrace early morning yoga, rub-up alongside min-till focused folk of the soil, and end the night with a drum and bass DJ set?

This year, organisers went above and beyond, even erecting a screen to show England's toil against DS

Congo in the World Cup, before inviting the 'great and the good' of the press to cut a 10th birthday cake at a champagne reception.

However, to talk shop, an annual feature at Groundswell is the Soil Farmer of the Year awards, with the accolade this time going to modest Lancashire-based field vegetable grower, Chris Molyneux. Utilising

legume-rich cover crops, strip tillage and controlled traffic farming, Chris has improved structure, drainage and biological activity on his 200ha of organic black sands.

PIVOTAL MOMENT

His regenerative farming conversion started after a visit to Australia where a wheat farmer host described his plough-and-plant approach as 'so 19th century, mate'. This was compounded when Chris' wife stopped riding-out on the compact, wet, wheat land after harvest, preferring the looser and easier going pea stubbles. Now he has soils that support high yielding, high value vegetable crops including kale and chard.

"We started working with min-till



Soil farmer of the year award

Utilising legume-rich cover crops, strip tillage and controlled traffic farming has led Chris Molyneux to scoop this year's award, as announced at the show.

and cover crops and this transformed our soils. Then, when the maize boys introduced strip tillage, we adopted their kit and approach. As a result, where we couldn't get onto ground due to slumping and compaction, we now drill direct whatever the weather, in conditions that wouldn't have been conducive under our previous approach," explained Chris.

When it comes to nutrition, Chris said he utilises clover, which he's recently added to the cover crop mix as a source of nitrogen. "It builds fertility, fixing enough nitrogen for itself – graze it and it comes back even stronger. Finally, we harvest it and use it as a source of slow-release nitrogen and a means of reducing the weed burden in our kale crop."

In accepting the award, Chris said he felt humbled as there were so many people at the show doing amazing things. "I don't quite feel like the winner yet as there's still more I'd like to do, it's a real learning process."

Runner-up was Paul Baker who farms both organic and conventional systems in Devon, while third place went to Colin Chappell from Lincolnshire.

Bringing a sense of pragmatism to the show, farm business consultants Andersons fired a warning that while the regenerative farm model is less volatile than it was, it, like many similar conventional farms, is

often reliant on SFI or diversification projects for profitability.

The consultancy shared findings from its model regen farm – which comprises 600ha of combinable crops; 240ha owned and 360ha on farm business tenancies. Managed by the owner and one full time worker, it uses cover crops before spring barley grown every other year, and benefits from third-party livestock.

Six years after introducing regen practices, the fictitious farm has fully transitioned and yields have stabilised; no soil is moved and being on clay loam it uses rotational mole ploughing to improve drainage.

Farm business consultant, Amelia Rome, suggested that after profits were curtailed by a wet 2024 and dry 2025, an upturn in commodity prices should see the farm make a positive surplus in 2026. Working on wheat yields of 8.65t/ha sold at £185/t for feed this year, the farm gross margins are predicted to be £65/ha higher than last year at £896/ha.

"Outputs are generally 10% below what they'd be for a conventional farm and while input costs are 10% down, it's still very sensitive to commodity price shifts. While ag inflation has dropped from its highs of 2020, it continues to erode profits. This and the Iranian conflict mean that a large number of farmers aren't making a profit," explained Amelia.

"If it wasn't for SFI, the farm wouldn't be in business. Like many others of a similar size, it's effectively drawing upon reserves and eroding their balance sheet going forward."

TOUGH CLIMATE

For next year, Andersons warned that it'll remain difficult to make profits from production alone, and SFI payments are most likely to decrease. Therefore regen farmers, like other commercial crop businesses, will have to look at doing things differently, notably reassessing machinery expenses.

On the topic of machinery, specifically tillage, various soils gurus concluded that occasional operations shouldn't take a system back to square one. Instead, carried out effectively, they can restructure compacted



Stark financial reality

Andersons' Amelia Rome said that if it wasn't for SFI, the firm's model regen farm wouldn't be in business.

areas, improve rooting, and cut the risks of run-off and soil losses.

Soil consultant Philip Wright pointed to Australian research showing that the negative effects are usually short lived. "A zero-till system produces a soil that can better cope with some tillage. As a result, recovery can occur after six months, maybe less, depending on how long you've been using regenerative practices," he said.

Additionally, Niab head of farming systems research, Dr Liz Stockdale, said it's important to identify exactly where compaction is and only operate in that area. "Look at the size of soil aggregates, how they're arranged and where roots zig-zag their way to depth. Examine sites where water is ponded or where there's run-off; this is often a symptom of compaction leading to a wet topsoil while the soil can be bone dry below."

If restructuring is required, Philip's advice was to use low intensity cultivations that bring minimal surface disturbance. "If you can get away with just one operation, that's brilliant, and rather than disturbing the whole profile across the entire

"Variety mix depends on end-market, but millers are getting good results from combining Group 2 and Group 1 wheats."



Understanding tillage

Niab's Dr Liz Stockdale said it's important to identify exactly where soil compaction is and only operate in that area.

- ▶ field, look to tillage zones and restrict the disturbance to these areas alone. Don't maul the mycorrhiza and always default to less," he said.

Contributing to the conversation, Essex Farmer Simon Cowell has been direct drilling for 20 years and believes he's earned the right to carry out some cultivation when required. "Our heavy clay soil is very resilient and organic matter levels have risen from 3.5% to 7-8%," he said. "I now don't worry about tramlines, take-all and slugs have disappeared, and water draining from our wheat field is clean."

He suggested that occasional inversion cultivation could also help to redistribute autotoxins and alleviate phosphate build-up in the surface soil as well as reduce blackgrass issues.

Then, over in another knowledge exchange session, Niab's Dr Aoife O'Driscoll highlighted that all growers should be aware of the increasing susceptibility of wheat to yellow rust and the growing pressure of septoria on farm. Her advice to those going down the regen route was to box clever with fungicides and bio-fungicides, and cut risks by adopting the most resistant varieties within wheat blends.

Her recommendation for selecting mixes on-farm was to check the lineage of varieties and avoid those with past parents that had previously been quick to breakdown. This is because many popular wheat varieties have yellow rust-susceptible Oakley in their genetics.

To further the discussion, Cope Seeds confirmed they're processing 600-700t of wheat every year for use in blends and said that the market is increasing. Seed manager, Simon Travers, added that at the same time as cutting management risks in regen farming systems, blends are finding increased favour with end-users.

"Variety mix depends on end-market, but millers are getting good results from combining Group 2 and Group 1 wheats and accept that farmers gain agronomic advantages as well," he suggested.

This year, Cope has sold blends using the Group 1 KWS Vibe and the high gluten content German E winter wheat Nelson, mixed with Group 2 varieties with complementing agronomic traits. At 14% protein, these mixes have secured additional £15/t premiums over typical milling wheats.

However, Simon warned farmers against home-saving blends as while a three-way mix at 1/3, 1/3, 1/3 is drilled in the autumn, it's unlikely to be the same combination at harvest.

PREMIUM MARKET

Emma Teasdale, farming community manager at Wildfarmed, confirmed an increasing number of buy-backs for wheat blends grown using regenerative practices. Wildfarmed currently has 110 farmers growing blends on farm – one of the most successful utilises Nelson, Group 2s Palladium and BYDV-resistant RGT Goldfinch, alongside Group 1 variety Cheer.

The company uses such a blend for their own flours and bespoke products as well as selling to Tesco, Waitrose and independent bakers. ASK Italian and Franco Manca also use white flour from blends in their pizza doughs.

"Major end-users increasingly talk to their customers about what our approach means for their health, biodiversity, watercourses and the

climate," highlighted Emma. "We pay a premium to farmers, and the end-user also pays more for the product."

Shifting to one of the most notorious pests in UK agriculture, ADAS' Duncan Coston said cabbage stem flea beetle remains a concern for many oilseed rape growers. "The problem is that unlike most other flea beetle species, CSFB turns up at the same time OSR is emerging. With increasing pyrethroid resistance, farmers have to be careful they don't build increasingly resistant populations."

Therefore it's a case of altering farm management to avoid or disrupt the pest, suggested Duncan. Methods include drilling early to get the crop off to a good, vigorous start so it copes with subsequent CSFB attacks, or, drilling late and bypassing the period when pest activity is at its worst.

Then, more growers are trialling companion crops drilled at the same time as the OSR, using a separate hopper on the drill. Duncan highlighted that a three-year research project on farms across Sweden and the UK is aiming to confirm best practice.

The companion crop seed mix currently being tested consists of around 50% buckwheat, berseem clover at 18% and 30% of the curry plant fenugreek. Peterborough-based, Tom Martin is one of the



A plant in disguise

Farmer Tom Martin shared his story of trialling an oilseed rape companion crop consisting of buckwheat, berseem clover and fenugreek.

"Think big and ask yourself, is there a weed management approach that I'm not using, and if so, why not?"

Chatting foliar N gathers the crowds

It was standing room only for Canadian-based soils specialist Joel Williams' take on nitrogen uptake

Groundswell regular Joel Williams suggested that a switch to foliar nitrogen sources can help to improve uptake efficiency, and that different forms bring different levels of productivity in the plant.

"Under conventional approaches, up to 50% of applied nitrogen isn't utilised; nobody likes to lose money as a result of poor nitrogen use efficiency. If we lose less we can use less, and this is where foliar sources such as urea targeted directly at the plant can help," he explained.

Joel detailed a range of international trials where researchers had been able to cut total nitrogen use by 20% and up to 60%, by using 2-3 applications of foliar urea targeting the crop at later stages.

Summarising the work, he suggested growers could be better off applying 25-40% of their total crop N requirements by foliar means, and that he's been working with growers worldwide – including in the UK – to prove the approach.

"More nitrogen will be in the crop biomass and utilised, maintaining yields but also boosting grain proteins," he said.

Research also confirms the benefits of providing multiple sources of N for plant metabolism. "It seems plants generally do better when supplied a mix of N sources," he noted.

Of these, he said urea should really be the centrepiece of a foliar N approach because its neutral charge means it gets into foliage faster than ammonium or nitrate N-sources. In addition, the carbon atom embedded within the urea molecule helps to speed up photosynthesis. In contrast, because conversion of nitrate requires more water, it takes longer to act metabolically.

In essence, organic forms of nitrogen are a means of short-cutting the plant's metabolic pathway, providing more energy to produce tillers and grain. However balanced nutrition is also critical, with sulphur, potassium and magnesium and various micronutrients working with nitrogen to drive metabolic processes, stressed Joel.

Sharing the stage was Suffolk-based farmer James Bucher, who commented he's seen the benefits of this approach across his sandy loam soils during the past 7-8 years.



A switch in approach

Summarising international research, Joel Williams stated that growers could be better off applying 25-40% of total crop N requirements by foliar means.

"We don't get rain in March to utilise granular fertiliser and foliar sources have provided more consistent wheat yields and better proteins," he said. "Where we'd use 220kgN/ha of nitrogen, we're now down to 120kgN/ha as a result of more efficient utilisation."

UK farmers trialling the companion crop mix. "Pigeons, slugs, and poor establishment can be a problem, but I'm not afraid of flea beetle," he said.

Based on heavy clays, he aims to drill early using a mix of conventional OSR varieties to minimise the risk from just one type. Within the companion crop, clover and buckwheat are relatively frost sensitive, so die off over-winter, while fenugreek brings rooting benefits to depth, helping to maintain soil structure, he explained.

"Luckily the pest has a poor field of vision and can be fooled into hitting the larger green target of the companion plants. I'm not entirely convinced our crop smells of curry as others have suggested, but it appears

to work keeping the pest at bay."

This year, Tom is upping the rate of buckwheat to 11kg/ha with 2 and 3kg/ha each of fenugreek and clover, respectively. "We're told there could be an allelopathic effect from buckwheat on blackgrass, so this could be another benefit from the companion crop that we're looking to test."

Tom shared that he also employs an early applied silica-based spray, to strengthen cell walls, enabling healthier growth. "It interferes with the digestive system of CSFB," he said.

Thinking more on weeds, with six cases of glyphosate-resistant ryegrass now confirmed in the UK, ADAS weed science consultant John Cussans stressed to attendees that with no other

total weed control product available, the industry is at a tipping point.

He pointed out that in wild populations there are individuals capable of surviving – therefore every farm could have resistant grassweeds, so repeatedly using the same herbicide programme is likely to select for these more resistant individuals.

"It's a case of keeping a good equilibrium. Think big and ask yourself, is there a weed management approach that I'm not using, and if so, why not? Don't rule out mechanical weeding, optimise chemical control, and use diverse application programmes and sequences. Also, don't reapply a herbicide that doesn't work in the field," he urged. ●

A phoenix from the flames



"It was an absolute honour for us all at Diddly Squat to be chosen as the host."

JEREMY CLARKSON

What happens when you take a television-come-farming star, Cotswold Brash land, a load of trade stands, some seminar sessions and a raft of agricultural enthusiasts? The answer it seems, is a very successful Cereals Event. CPM reports...

By Janine Adamson

With an honest and fair eye, despite its many years of success, Cereals had become a little stale of late for both exhibitors and visiting punters. One by one, 'big' players pulled out, seminar talks scaled back, and the overall vibe had become somewhat muted.

Many said it required a complete shake-up – an injection of life. Then, just when it was teetering on breaking point, along came *Clarkson's Farm* and its polarising host, Jeremy.

And just like Jezza, the decision to host Cereals at Diddly Squat in Oxfordshire – renowned for its unforgiving Cotswold Brash land – didn't come without

criticism. However, for all its faults, it seems the decision to set up shop there was in fact a triumphant one...

Whether it was sheer blind faith or a queasy sense of FOMO (fear of missing out), industry flocked to Diddly, which in turn, offered the 25,000 reported visitors a cacophony of crop plots, new products, shiny machinery releases, and experts ready to talk nitty gritty farming.

Speaking on his Instagram account, Jeremy said he'd loved every minute and it was a delight to see so many people turn up. "My profound thanks to everyone involved. It was an absolute honour for us all at Diddly Squat to be chosen as the host."

One exhibitor that was hard to miss was KWS, which not only had its own large trade stand and array of crop plots, but also sponsored the 'seed to shelf' mainstage. Speaking at the show, the team provided a market overview, with their expectation that winter wheat should maintain its cropping area next season as long as autumn conditions allow.

They said they could see growers exploring alternative varieties which offer end market flexibility due to continued pressure on profitability and milling wheat premiums. They suggested it's likely the milling hectareage specifically will decrease due to depressed premiums.

Then, taking a look at some of KWS' latest varietal introductions, Matt Bull said KWS Aintree is one to watch. "It's unrivalled for yield, offering stability across different regions, soil types and drilling windows.

"It has huge yield potential, therefore offering growers the opportunity to push forward their feed wheat profitability. Although it requires proactive yellow rust



Going big

KWS had a significant presence at the show with crop plots, a show stand and sponsorship of the main stage.

management, done well, it will deliver.”

He also highlighted KWS Fowlmere as another new variety which brings a unique balance of yield and early maturity. “Fowlmere is the earliest variety on the Recommended List by a significant margin, making it ideal for growers looking to spread harvest workload or seeking an alternative entry for OSR.

“It’s well-suited to lighter land, with taller straw and excellent grain quality. It also has the added benefit of being suitable for export,” he said.

Commenting on winter barley, Kate Cobbold added that although economics surrounding the crop have been challenging, there are some exciting varieties coming through which add value for UK growers. For one, KWS’ second hybrid introduction – Idrys. “A candidate variety, this is our next release to follow Inys. Quality is the stand-out feature of Idrys, particularly specific weight.

“We also have two new 2-row barley varieties coming through the pipeline, KWS Lemuris and KWS Blis. They are particularly interesting as they bring BYDV tolerance without a penalty on yield or grain quality, so watch this space,” she advised.

Over at RAGT, Tracy Creasy highlighted SY Arrow – a spring malting barley that recently achieved full approval for malt distilling, and provisional approval for brewing. “This is an exciting introduction,” she said. “It’s similar to Laureate in its adaptability and consistency – Arrow is a consistent performer across all trials.”

She noted that with outstanding quality

and early maturity, it should be ideal for Scottish growers, but equally, will be launched across the globe. “Arrow comes from the Syngenta breeding programme, which was recently acquired by RAGT.

“We really believe it’ll be the next Laureate, while offering genetic diversity to meet the demands of maltsters who are looking for something different.”

RAGT is also adding to its BVDY-resistant varieties, noted the firm’s Ed Stanford. “While RGT Guardsman broke the yield barrier for varieties with BYDV resistance, our latest suite of options not only have BYDV resistance and strong yields, but also offer orange wheat blossom midge resistance too.

“As far as we’re concerned, there are no longer any obvious penalties from including BYDV resistance in a variety,” he said. “We’re adding value beyond just the BYDV trait.”

With candidate BYDV varieties RGT Gorgon and RGT Griffin in the pipeline, Andrew Creasy raised that this year has been the perfect opportunity to test their performance. “This season, conditions have been really conducive to aphids and BYDV transmission, so in trials we’ve been able to showcase what these new varieties are truly capable of.”

Also sharing new varieties was DSV, with its headline high yielding Group 1, Arlington. Sarah Hawthorne explained that perhaps unusually, Arlington combines the Pch1 eyespot resistance gene with Sm1 resistance to orange blossom midge, plus good agronomic scores for a robust all-round package.

“With a low vernalisation requirement, Arlington can be sown later, comparable with Skyfall,” she added. “If you’re familiar with Skyfall, Arlington’s management should be very similar.”

At FMC, Geoffrey Bastard highlighted that Cereals was the first time the company had brought its own R&D product to the show circuit, rather than chemistry gained through acquisitions or legacy companies.

“In its first year, Fundatis (bixlozone[isoflex active]+ beflubutamid) has performed well in all field-scale scenarios, and we now have real evidence beyond just plot scale trials. In particular, we’re observing exceptional activity on ryegrass and broadleaf weeds like groundsel.”

He pointed out that as the herbicide market shifts with potential change looming on the horizon, for managing a broad range of weeds, Fundatis should prove a compelling solution. “It’s a wide offer, and critically, contributes positively to resistance management.”

Also tackling the notion of wider industry concerns was De Sangosse, which launched a phosphate stewardship guide developed in collaboration with ADAS. The guide brings together research, field data and practical agronomy to address the challenge of how to improve delivery of phosphorus to crops.

Speaking on the stand was Dr Christina Baxter, who said evidence from the Yield Enhancement Network (YEN) had shown a significant variation in grain phosphorous content, despite soils containing sufficient reserves.

“There can be large pools of phosphorus in the soil but often, only a small amount is crop-available



Looking after the bees

Premium Crops (part of Cefetra), demonstrated the benefits of targeted pollination on borage yields.

- ▶ because a lot can be stored in inorganic and organic forms or fixed to soil particles. This means the crop struggles to access that nutrition.”

She added that the guide had been developed to hopefully raise awareness around poor phosphate efficiency, and that there are ways to address it, depending on the situation. “For high P indices, this means improving the access to that nutrition. Conversely, for low P indices and maintenance scenarios, the solution is to better protect what’s being applied.”

The catchphrase for the guide is 'Protect it. Place it. Unlock it,' which Christina hopes will have a positive impact on the stewardship's adoption. "It's important because of the impact of legacy P in soils and its potential to be lost through runoff, erosion or drainage pathways.

“Phosphate is an environmental concern as well as agronomic, and should be tackled head-on rather than simply accepted.”

Over at Agrii, it was all about technology, as it launched its new 'smart connected farm' initiative. Centred around the recently announced integration of Contour with Telus, the aim is to develop a 'top-drawer' agronomy tool, explained Ben Foster.

"It's our new approach to agronomic advice where we combine drones, sensors and any data generating technology, alongside intelligence from our R&D, and feed that into Contour. This information is then analysed by Aqrii



Giant mollusc

Adama hoped to draw attention to its recently launched slug pellet product that contains new active ingredient, Feralla.

before being used to create actionable insights for the grower. Essentially, it's digital farming made simple."

Agrii's Dr Ruth Mann added that the goal is to provide agronomists with tools for impact, but critically, it's grower focussed too. "We're building a jigsaw to pick and choose from, where the agronomist can customise the data and information on a per-farm basis.

“Information from our trial sites and Digital Technology Farm (DTF) network will all feed into the smart connected farm.”

For something different, Premium Crops (part of Cefetra), demonstrated the benefits of targeted pollination on borage yields. This is because typically, there aren't enough background pollinators to deliver the optimum seed yields for the crop.

However, working with the Bee Farmers Association, Premium Crops has been able to show that by placing two bee colonies per hectare of borage, growers can achieve a 20-25% yield uplift.

“If 1t of borage seed equates to £4000, it makes maximising pollinators well worthwhile,” said Paul Barton of the Bee Farmers Association.

As for machinery, Kverneland used Cereals to introduce a new fertiliser spreader to the UK market. Called Alentix, the all-new twin-disc machine boasts enhanced technology and greater spreading performance.

Said to be the flagship of Kverneland's spreader portfolio, Alentix sits above the Exacta TL, and provides another option for those seeking the high accuracy and efficiency with bagged fertiliser. It has a 4700 litre hopper capacity and a spread width of up to 54m.

Then over at John Deere, the firm



Spring malting barley

RAGT was pitching SY Arrow as the next Laureate.

revealed it had expanded its 500R sprayer range for model year 2027 (MY27), with larger tank capacity and advanced boom technology.

Designed for large arable farms and professional spraying operations, the MY27 500R series builds on the established frontcab, rearengine concept and enters a higher productivity segment while maintaining a compact transport width of just 2.55m.

Among this, the headline addition is the new John Deere 560R, expanding the 500R range into the 6000litre class. The larger tank is aimed at operators working during tight application windows who need to cover more hectares per day with fewer refilling stops, particularly in cereals, OSR and other highinput crops.

Undoubtedly, this year's show will be a hard act to follow, however for 2027, the event will return to Andrew Ward's farm in Lincolnshire on 9-10 June. ●

Editor's review

I'll be the first to admit that I didn't want to like Cereals at Diddy Squat, but given I'm not afraid to eat my hat, I have to say I've been proven a little wrong.... Having visited on day 1 of the show, it felt fresh, vibrant and buoyant.

Dealing with the negatives first – it took me around an hour to queue and get parked up on a field which probably wouldn't have been great following the relentless rain of day 2. The show's layout was confusing (map reading isn't my forte), and there definitely could have been more toilets.

However, I hope this is a turning

point and not an anomaly. Most exhibitors had invested heavily in their setups, the hospitality was flowing and there was an abundance of things to see and talk about.

Now I'm absolutely not recommending that Cereals stays in the Cotswolds – no way. But I am saying that perhaps the old adage of, build it and they'll come, has rung true? I'm really pleased that industry put on their best show for attendees. And that's what this is all about, isn't it? Maybe there's life in the old dog yet!

Editor, Janine Adamson

Why rural crime remains one step ahead



New powers to recover stolen machinery and falling insurance claims may suggest progress is being made against rural crime, but behind the headlines lies a more complex picture. *CPM* explores how organised criminal networks, fragmented policing structures and under-reported offences continue to shape the reality of crime in the countryside.

By Charlotte Cunningham

When the Crime and Policing Bill received Royal Assent earlier this year, it was welcomed as a significant step forward in the fight against rural crime.

Among the measures introduced were new powers allowing police to enter premises without a warrant to recover electronically tracked stolen agricultural equipment – a move many hoped would improve recovery

rates and disrupt criminal activity targeting farming businesses.

The legislation arrived against a backdrop of persistently high losses and according to the most recent NFU Mutual figures, agricultural vehicle thefts reported in 2024 cost £7M, while rural crime overall was estimated to have cost the UK £44.1M.

More recently, fuel theft has emerged as another growing concern for both



Looking beyond the theft

According to Dr Kreseda Smith, understanding the depths of rural crime means looking beyond the theft itself. ►

► urban and rural communities. According to DeterTech Crime Intelligence, at least 50,000 litres of fuel were stolen between March and April this year, with criminals increasingly targeting businesses such as farms where large volumes can be stored on site.

Yet despite growing awareness of the issue, dedicated rural crime teams and increasingly sophisticated security measures, rural crime continues to cast a long shadow over the countryside.

According to Dr Kreseda Smith, associate professor in rural criminology and social science at Harper Adams University, understanding why means looking beyond the theft itself. From GPS receivers and quad bikes, to tractors and livestock, the assets targeted by criminals may have changed over time, but for many, the underlying concern remains the same. “Crime is more than just property,” she says.

And perhaps that’s where the conversation around rural crime should begin...

ORGANISED CRIME

For many years, rural crime was often viewed as relatively low-level offending, with thefts typically characterised as opportunistic crimes committed by individuals taking advantage of isolated locations and easy opportunities.

While those offences still occur, Kreseda believes the nature of offending has shifted significantly during the past decade and a half. “We’re very much now in a position where we’re facing a huge amount of organised criminality targeting our rural spaces.”

During that period, she’s witnessed what she describes as a ‘criminal revolution’ in the countryside, with increasingly sophisticated networks identifying and targeting valuable rural assets.

That shift matters because it fundamentally changes how rural crime should be viewed. The image of a lone thief spotting an unlocked quad bike and acting on impulse no longer reflects the reality. Instead, thefts are often targeted, intelligence-led and driven by wider criminal markets operating well beyond the farm gate. “There are a range of drivers that influence what’s being targeted,” explains Kreseda. “That fluctuates over time and is driven by local, regional, national and international interests from the criminal perspective.”

Recent years have provided several examples, she continues. For one,

the rise in thefts of GPS equipment has highlighted the growing value of precision farming technology and replacement parts, while quad bikes continue to be heavily targeted because of their portability and resale value.

Meanwhile, Kreseda says livestock theft tends to rise and fall alongside market conditions, while tractors remain a perennial target. “What’s important to note is that the destination for these assets is rarely another farm,” she points out. “Quite often it’s the parts or spares markets that might be the primary driver for what’s being targeted.”

Machinery can be dismantled quickly

via professionally run ‘chop shops’ – parts mixed with components from multiple machines and exported through complex supply chains that make tracing stolen property extremely difficult.

Of course, the implication of this business-like approach means by the time a theft has been discovered, reported and investigated, the equipment may already have been dismantled, moved across borders or shipped overseas – with Kreseda noting countries like Dubai as a popular destination for stolen farm machinery.

Despite the scale of the issue, one of the greatest challenges surrounding

Crime in the community

Working together to prevent crime in Northamptonshire

For Northamptonshire farmer Milly Fyfe MBE, rural crime became impossible to ignore when a series of organised thefts hit her village in August 2024.

The incidents involved telehandlers and quad bikes being stolen during the early hours before being hidden locally for 24 hours, allowing thieves to check whether trackers had been activated before moving machinery on. “The first we knew about it was actually the milkman,” recalls Milly. “He saw somebody driving a quad bike through the village at four o’clock in the morning.”

The quad bike had been stolen from another farm in the village and was later discovered hidden in a remote barn on the Fyfe family’s farm. At the same time, a stolen telehandler was eventually traced to a lock-up yard in Cambridgeshire after its tracker was activated. While machinery was recovered, nobody was prosecuted and she says the experience highlighted just how organised modern rural crime has become.

In response, farmers and residents strengthened communication through a local WhatsApp group, sharing information about suspicious vehicles and activity in real time. “We’re all on high alert,” she says. “As soon as somebody sees something dodgy, it goes on the group.”

The village also hosted a rural crime forum involving local farmers, police and politicians to discuss



Northamptonshire farmer, Milly Fyfe MBE (credit Olivia Brabbs).

solutions and raise awareness. Videos featuring affected farms were shared across the community, and with Northamptonshire Police.

On farm, the family has invested in electronic security gates, CCTV and vehicle trackers. Machinery storage has also been adapted, with larger equipment used to physically block access to high-risk items such as quad bikes overnight. “Northamptonshire Rural Crime Team have also been very proactive,” she adds. “They hold forums, on-farm events and are visible within the community.”

Alongside investments in security, the village’s WhatsApp network has become an important source of intelligence, helping residents quickly share concerns about suspicious vehicles or activity. “It’s farms as a community looking out for each other,” she says. “WhatsApp groups are something really simple, but they make a huge difference.”

rural crime is establishing its true extent. NFU Mutual's estimate of £44.1M represented a 16.5% reduction compared with the previous year, suggesting some progress is being made.

Yet Kreseda cautions against treating any single dataset as a definitive measure of rural crime. "It's the tip of the iceberg – many incidents never make it into official statistics. Some losses fall below insurance excess thresholds, while others aren't reported because victims have little intention of making a claim. In some cases, farmers simply lack confidence that reporting an incident will result in meaningful action.

"All of these aspects create a cumulative negative effect on our broader understanding of what crime looks like in the rural space."

Kreseda stresses that the problem with this is that the cycle becomes increasingly difficult to break. "If crimes aren't reported, they don't appear in official figures. If official figures suggest crime levels are relatively low, resources may be directed elsewhere. Reduced resources can further erode confidence in reporting, reinforcing the problem."

Similar concerns have been raised by Shadow Farming Minister Robbie Moore, who recently argued on the *Close the Farm Gate* podcast that headline figures should be treated with caution because insurer data only captures incidents which result in claims, and reporting practices vary considerably between police forces.

As such, Robbie urges that reporting every incident matters, as the resulting intelligence helps create a more accurate picture of rural crime and supports the case for directing resources to the areas most affected.

If understanding the scale of rural crime presents one challenge, responding to it presents another. Unlike urban crime, which is often concentrated within relatively small areas, rural offending takes place across vast geographic regions, often with fewer officers available and significantly longer travel times between incidents.

Those challenges become even more pronounced when offenders operate across county boundaries, often moving far more freely than the systems designed to catch them. Specifically, Kreseda points to examples where victims living close to force borders can struggle to obtain a response. "There are pockets of good practice, but too often people can find themselves caught between different jurisdictions."

Funding also remains a key concern. Earlier this year, the NFU brought together Police and Crime Commissioners, the National Rural Crime Network, the National Rural Crime Unit, NFU Mutual and other stakeholders to discuss how funding could better reflect the realities of rural policing.

The group argued that current funding mechanisms fail to adequately account for the demands associated with policing large rural areas, where officers may have to travel significant distances to attend incidents yet organised criminal groups can operate across multiple jurisdictions.

One of the strongest points Kreseda makes is that rural crime shouldn't be viewed in isolation. "It's tempting to categorise machinery theft, hare coursing or livestock theft as distinct rural offences. However, doing so risks overlooking the wider criminal activity often sitting behind them.

"The people involved aren't only involved in rural crime," she warns. "Organised criminal groups targeting farms may also be involved in drug trafficking, county lines activity, firearms offences and human exploitation. The person stealing tractors isn't necessarily just stealing tractors every day."

BROADER IMPACT

That broader perspective matters because it changes how rural crime is viewed at both strategic and operational levels, she says. Rather than being a niche issue affecting a relatively small section of society, it becomes part of a much larger organised crime picture.

While machinery thefts and insurance claims generate figures and headlines, perhaps the most significant consequences of rural crime are those which never appear on a balance sheet. Speaking at a recent rural crime roundtable, NFU vice-president Robyn Munt pointed out that farmers who find themselves becoming victims of crime are left feeling terrified, isolated and vulnerable.

For Kreseda, this distinction is an important one – unlike many other businesses, farming families often live where they work. The same yard targeted by thieves may sit just metres from the family home, creating pressures that are often underestimated. "When you add crime, insurance claims, financial losses and disruption to already demanding businesses, and the consequences can quickly accumulate."

The impacts aren't solely psychological



Rural policing challenges

Unlike urban crime, which is often concentrated within relatively small areas, rural offending takes place across vast geographic regions, often with fewer officers available and significantly longer travel times between incidents.

either. Poor mental wellbeing is closely linked with poorer physical health, while fatigue, stress and sleep deprivation can affect concentration, decision-making and safety. "The second and third-order impacts of crime are often overlooked," warns Kreseda. "Yet they may ultimately prove more damaging than the initial theft itself."

So what do farmers and the rural community do next? While legislation, policing and enforcement all have an important role to play, Kreseda is firm that lasting progress also depends on better intelligence, improved reporting and stronger collaboration between the organisations tasked with tackling rural crime.

One of the assets traditionally associated with rural communities has been strong social networks and informal support structures. While those communities have changed over time, she believes there remains significant value in collective action. "It's that community cohesion and informal social control that really has a place in our rural communities," she says.

Importantly, she believes that this doesn't mean farmers policing themselves. Rather, it highlights that protecting rural communities requires collaborative co-operation. "I think collectively, if we keep banging the drum about rural crime, farm crime, the implications and the impacts, at some point it has to be taken seriously at the highest level," she concludes. "The government has to take seriously its pledge to rural-proof policy, which feels like something that's fallen by the wayside in recent times." ●

Right size for the job



"It's simple, flexible and it suits the farm."

ALAN COPLEY

As many growers are starting to question whether size really matters so much anymore, one Yorkshire farmer has found better efficiency from scaling back his cultivator. *CPM* reveals more...

By Charlotte Cunningham

As establishment systems continue to evolve, growers are increasingly looking beyond outright working width when investing in machinery. Factors such as fuel use, labour availability, tractor requirements and versatility are increasingly influencing purchasing decisions, and in that respect, bigger isn't always better...

While some businesses may look to increase working widths to cover more ground, others are finding that matching machinery more closely to their farming system can deliver just as many benefits. For Yorkshire grower Alan Copley, that meant taking the somewhat unusual decision to replace

a larger cultivator with a smaller one.

Farming just over 400ha at Hawthorne Farm near Wakefield, Alan grows a rotation of combinable crops, maize and SFI rotational options – with establishment centred primarily around min-till practices and occasional ploughing where conditions dictate.

When the time came to replace a 4m cultivator already on the farm, the assumption might have been that a machine of similar size would take its place. Instead, following a demonstration of Kuhn's Performer Select 3000, Alan opted to move down a metre in working width – a decision he says has delivered greater flexibility without sacrificing output.

"There was nothing wrong with the old machine," he explains. "It was a good cultivator, but it was simply too big for what we wanted."

"We demo-ed the 3m Performer and found that because we were working at the forward speeds Kuhn recommended, we were actually covering nearly as much ground while still doing just as good a job."

Instead, Alan found that improvements in manoeuvrability and efficiency more than compensated for the reduction in working width. "Ultimately, we liked what we saw and decided to keep it," he says. "The biggest advantage is that it's smaller and more manageable. It's better on the headlands than what we were previously running and we can turn quicker, which means we're spending more time working and less time manoeuvring."

That flexibility extends beyond field performance alone and with a lower draft requirement than the machine



Joker RT



Terrano MT



Terrano FX

 **HORSCH**

PERFECT PREPARATION IN ALL CONDITIONS

Disc or tine, shallow and/or deep cultivation, 3m to 12m, high performance cultivators for all conditions: **Joker, Terrano, Cruiser, Fortis, Tiger** and **Finer**. To discover more about the wide and versatile range of cultivators, drills and sprayers, speak to your local HORSCH branch. **HORSCH.COM**

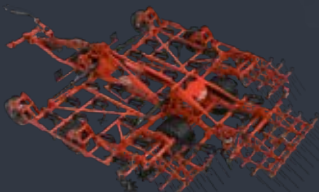
TOGETHER FOR A HEALTHY AGRICULTURE



TINE CULTIVATOR RANGE

Your soil is a key asset for quality crop production. KUHN offers a wide range of soil cultivation equipment, designed to perform when creating the ideal seedbed.

HIGHLANDER



CULTIMER



PROLANDER



OPTIMER



PERFORMER



be strong, be **KUHN**

www.kuhn.co.uk



An accessible option

Originally launched as a straightforward alternative to the flagship Performer 1000 series, the Select range now includes 3m, 4m and 5m models, offering growers a more accessible route into one-pass cultivation while retaining the core features of the wider platform.

► it replaced, the Performer Select has also widened the choice of tractors capable of operating it. "We can pull it with a smaller tractor, which gives us more flexibility," he explains. "We don't have to rely on one particular tractor, so we can use other machines if required."

So how exactly does the Performer stack up from a technical perspective? Originally launched as a straightforward alternative to the flagship Performer 1000 series, the Select range now includes 3m, 4m and 5m models, offering growers a more accessible route into one-pass cultivation while retaining the core features of the wider Performer platform.

According to Kuhn area sales manager Marcus Ainley, the Performer was designed as a true one-pass cultivator capable of creating either a seedbed or false seedbed immediately after harvest. "The Performer is Kuhn's version of a disc-and-tine combination cultivator," he explains. "Its primary role is to create either a seedbed or a false seedbed in a single pass following harvest. However, it's also a very versatile machine and can be used in a range of different situations throughout the year."

While designed as a deep-loosening cultivator, Marcus says the machine's adaptability allows it to perform a variety of roles depending on seasonal requirements. "You can use it as a traditional stubble cultivator, but equally you can run shallower cultivations if required."

"If conditions dictate, the roller can be removed and the machine used almost like a tine drag to open soils up in the spring without creating excessive consolidation."

The machine's layout follows a straightforward sequence designed to maximise soil movement while maintaining residue flow. At the front, twin gangs of cultivation discs chop residues and break up root structures before material reaches the loosening legs. "The discs are there to process the surface material and start the cultivation process," explains Marcus. "One of the major design features of the Performer is the overall length of the machine, which creates excellent trash flow."

This becomes particularly important in high-residue situations, he points out. "If you're cultivating maize stubbles or other high-residue crops, material

requires space to move through the machine. The Performer is very difficult to block because of the spacing and overall layout, meaning residues continue to flow through the machine rather than building up around the cultivation elements.”

Behind the discs sit the deep-loosening tines, which are designed to alleviate compaction and create soil movement through the profile.

Something unique to the machine is that Kuhn manufactures all of the wearing metal themselves. “In practical terms, this means the leg itself is drop forged, while the mounting system uses high-tensile steel to provide additional flexibility.”

That flexibility forms an important part of the machine’s protection system, he continues. Although the legs feature auto-reset protection, the mounting arrangement also allows the leg to flex laterally when encountering an obstacle. “The leg can move up to 15cm either side, meaning it doesn’t always have to trip over a stone or obstacle. It can often flex around it, reducing stress on the reset system and helping to protect the machine.”

A range of point options allows operators to tailor the machine to different cultivation objectives. For example, growers seeking minimal disturbance can opt for a narrow loosening point, while wider points and wings create greater surface movement. “Some growers want maximum loosening with minimal soil movement, while others want more mixing and cultivation closer to the surface,” says Marcus. “There’s flexibility depending on what you’re trying to achieve.”

“There’s flexibility depending on what you’re trying to achieve.”



A true one-pass cultivator

According to Kuhn area sales manager Marcus Ainley, the Performer was designed as a true one-pass cultivator capable of creating either a seedbed or false seedbed immediately after harvest.

Following the tines, a row of levelling discs redistributes soil before it reaches the rear packer. “The levelling discs aren’t carrying out cultivation in their own right,” he explains. “Their purpose is to level the surface after the tines have passed through, filling in any ridges and creating a more uniform finish.”

Consolidation is then completed by the rear packer, with two options available depending on soil type and the desired finish. The HD roller provides deeper consolidation and leaves a weatherproof finish, while the Double U roller is designed to provide more surface tamping and improved performance on lighter soils. “The choice largely depends on soil type and what the customer is trying to achieve,” comments Marcus.

Back in Yorkshire, the Performer Select completed its first full season on the farm last year. “We’ve been really happy with it,” says Alan. “It did the job we wanted it to do and performed well in different conditions.”

the smart farmers fan



Introducing the ultimate smart crop conditioning fan

Uses **50% less energy**

Increases airflow **by 15%**

Recoups your investment **within 3 years**



evansandpearce.com

01935 850750  

MACHINERY Cultivation equip & ploughs

- Something he notes as particularly impressive is the durability of the wearing metal. “The wearing parts seem very tough,” he notes. “After a full season’s work we’re seeing very little wear on the points. They’re not cheap, but if they last as long as they look like they will, then they’ll be worth it.”

If there was one feature Alan would add, it would be the ability to lift the legs independently from the rest of the machine, something available on his previous cultivator. But overall, he believes the machine strikes a strong balance between simplicity, performance and practicality. “At the end of the day, it does exactly what we bought it for. It’s simple, flexible and it suits the farm.” ●

What’s new in cultivation?

Low-disturbance loosening, residue management and one-pass establishment continue to shape machinery development. Here’s a look at just three of the latest cultivation launches to hit the market

PÖTTINGER

Pöttinger has introduced a series of updates to its Plano shallow cultivator range, aimed at increasing versatility across a wider range of cultivation and mechanical weed control tasks.

Among the new additions is a heavy-duty tine system which can be fitted in place of the rear roller. Arranged as a three-row harrow, the tines distribute residues, leave a loose soil structure and help place uprooted weeds on the soil surface. The system is hydraulically adjustable and can be folded rearwards from the cab to clear blockages.

New spiral spring tines have also been added to the range, offering an alternative to the existing pre-tensioned tine design. Suited to light and medium soils, they are designed to improve residue flow while producing a finer seedbed finish.

Other additions include wheel mark loosening tines, which can alleviate compaction in tramlines without increasing the working depth across the whole machine, and new 220mm Durastar Plus duck foot shares.

COUSINS OF EMNETH

Cousins of Emneth also used Cereals 2026 to showcase its new Switchblade combination cultivator, designed to combine low-disturbance loosening, shallow tillage and consolidation in a single pass.

Targeted at growers looking to minimise soil movement while maintaining effective cultivation, the machine combines the company’s Step Change low-disturbance loosening tines with shallow cultivation discs and rear consolidation. The loosening tines are capable of working to depths of up to 30cm, while two rows of staggered wavy discs cut through residues and create surface tilth with minimal soil inversion.

The discs are individually mounted on rubber suspension units and can be adjusted hydraulically on the move to suit varying field conditions. Consolidation is then provided by an open channel soil-to-soil roller mounted at the rear of the machine.

According to Cousins, the Switchblade weighs around 0.5t less than comparable machines, helping to reduce lift capacity and horsepower requirements while improving handling.

Alongside the new cultivator, the company also highlighted updates to

The Solitair ST seed drill

Performance that delivers in everyday life.

With its wide range of equipment options, the LEMKEN Solitair ST is particularly flexible, efficient and powerful. Perfect crop emergence combines with high area output – ideal for large-scale farms.





its Heavy-Duty Springtine Cultivator. Available in a three-bar configuration for stubble and general cultivation work, the machine can now be specified with a new following harrow option designed to create a finer finish and remove residual tine marks.

The Type 28 Press range has also been updated with a new universal frame, allowing growers to choose between three different front-end cultivation systems

depending on soil type and cultivation objectives.

WEAVING MACHINERY

Weaving Machinery used Cereals to debut its new Raptor cultivator, a one-pass machine designed to deliver deep cultivation while maintaining a straightforward setup and operation.

Designed to work down to depths of 23cm, the Raptor features two rows of 560mm cutting discs, followed by

two rows of sprung-loaded tines capable of applying up to 900kg of force each. A row of levelling discs and a full-width disc roller complete the cultivation sequence.

Available in 3m, 4m, 5m and 6m working widths, the machine features a lower-link hitch arrangement to improve manoeuvrability and headland performance.

According to Weaving, the Raptor has been designed to require only two hydraulic services through a standard

switchbox control system, helping to simplify operation. The cultivator is suitable for tractors from 160hp upwards, and is intended to operate at forward speeds of 10-12km/h.

The launch marks Weaving's entry into the one-pass cultivator market, with the machine designed to offer growers a versatile cultivation tool capable of working across a range of soil conditions and establishment systems, says the firm.

Next level ultra-shallow tillage performance



50% higher intensity

The new third disc axle front tool adds 50% more tools to the ground, delivering higher intensity, more mixing, and stronger emergence of weeds and leftover seeds. All while preserving soil moisture and structure. The third disc axle is available for Carrier XL 425-725, Carrier XT 425-625 and Carrier 925.

VÄDERSTAD

Where farming starts

New tech boosts big baler efficiency



“This could prevent up to 80% of typical downtime, and help inexperienced operators to drive the Cubix to its full potential.”

DANIEL MOERSCH

Big baler manufacturers are developing designs that put more into each package for faster workrates and fewer bales from each field, while also harnessing technology to improve quality and efficiency. *CPM* speaks to the sector's key players.

By Martin Rickatson

From higher workrates and greater knotter/knot reliability, to greater densities that cut bale numbers, big baler evolution centres on rapidly turning residues into valuable resources that contribute to overall crop return.

Among the most significant developments is the Claas Cubix, an all-new 120x90cm big baler previewed at Agritechnica 2025, and set for 2027-28 sales following final testing. With features including AI-supported bale density control, all-new drive concept and a novel double-loop knotter design, the Cubix is claimed capable of processing up to 70t/hr of straw, or up to 50t/hr with the Claas Finecut chopper option.

“The Cubix consistently produces 210kg/m³ densities, peaking at up to 235kg/m³,” says Daniel Moersch, square baler product specialist at Claas.

“Key to this is the straight power flow from a main gearbox integrated into the baler frame, and two longitudinally-arranged 202kg flywheels, which store sufficient drive energy to maintain smooth, consistently high compression. With the main gearbox integrated

centrally in the drawbar, there's then a power belt for each flywheel.

“An intelligent switch starts the two flywheels sequentially to minimise the required start-up energy. Once they've attained 1650rpm, the packer ram and then the rotor are engaged.”

Should an overload occur, drive to both flywheels is immediately disconnected by electro-hydraulic multi-plate clutches, and the packer ram is actively braked. “This eliminates any need for cam clutches and shear bolts, while foreign object damage is prevented and the baler can be rapidly restarted,” explains Daniel.

The packer ram, rotor and rake drives are switched individually via integrated clutches. When the baler drive is disconnected, the ram is stopped at 35° from rear dead centre, and when restarted, the baler then first makes an idle stroke before the next compression stroke, providing further powertrain protection.

A new pre-chamber features a pre-tensioned oil-bathed claw coupling that mechanically-operates the pre-chamber rake with alternate filling

and raking strokes. “When the filling stroke is engaged, the claw coupling is preloaded, ensuring uniform feeding to the upper area when filling the press chamber,” says Daniel.

“Because the claw coupling drive is connected to a stepper gear, the gear shift occurs only when the claw coupling is still.

“Interconnected torque sensors in the rotor and rake gearbox measure the gearbox loads, using AI to continuously regulate automatic systems governing control of bale density and length. If an impending overload is detected



The stats

Straw bale density and output figures for the Claas Cubix are 210-235kg/m³ and 70t/hr, says the firm's Daniel Moersch.



Double plunger

Kuhn's SB balers feature its Twinpack double plunger design, which compacts the bale in series during a complete plunger cycle, for more force per surface area.

in the torque curve, the rotor and pick-up are automatically disengaged before a blockage can occur.

"We believe this could prevent up to 80% of typical downtime, and will help inexperienced operators drive the Cubix to its full potential."

Tractor Implement Management (TIM) matches forward speed to baler load, with 'maximum density' and 'high throughput' modes. AI-supported software based on torque sensor values then automatically regulates forward speed to optimise performance to those mode targets. "In addition to AI-supported density and bale length control, in testing we've seen no more than 2% deviation in bale weights," adds Daniel.

"This helps to maximise legal trailer weights without risking overloading, for full transport efficiency."

To match the higher density capability, collaboration with Schumacher Group has created a new knotter that produces two loop knots in each operation, said to combine the advantages and address the respective weaknesses of McCormick and Deering knotters. The double loop maintains twine tensile strength at around 70%, significantly higher than that of Deering knotters.

"We can either pack in more material, or use more economical twine with the same strength. Because twine loads are comparable to a Deering knotter, only six knotters are required meaning significant twine savings and cutting twine refill times. The double loop knotter also produces no twine waste, further cutting twine costs and protecting the environment," explains Daniel.

KUHN

Kuhn's SB square balers now include pick-up enhancements to improve

intake and a bale channel expansion to boost bale density consistency.

At the pick-up, a power feed roller actively follows swath height, while increased overall tine-to-tine width improves crop flow consistency to the rotor, removing power demand peaks and reducing blockage risk. Bale channel length is now 3.75m, incorporating nine cylinders and resulting in consistent bale density, particularly in very dry material, suggests Kuhn UK's John Hulland.

"SB balers retain our Twinpack double plunger design, which produces uniform high density bales without higher strain on machine or operator, with 25% higher bale densities in dry crops compared with competitors," he says.

"Twinpack's split upper and lower plunger elements are connected via a triangle rod, compacting the bale in series during a complete plunger cycle, with greater force applied per surface area, while avoiding peak loads.

"This reduces power requirement and the 'nodding' impact associated with weighty plungers. Despite the heavier bales, the load on the machine is comparable with a conventional 120x90cm baler, which eliminates the need for an oversized driveline, flywheel and main frame, or a higher horsepower tractor."

NEW HOLLAND

Recent New Holland BigBaler Plus and BigBaler High Density updates include availability of IntelliSense baler automation across the range, a new operating terminal, full telematics integration via New Holland FieldOps, and improved maintenance features.

"IntelliSense uses LiDAR technology to continuously adjust the tractor steering to follow the swath, optimise chamber filling and maintain ideal speed," explains New Holland's Sion Whittingham.

"This means more consistent bale density and shape, reduced blockage risk, and improved fuel efficiency, plus easier operation for less experienced operators.

"Enhanced New Holland FieldOps telematics now enables recording of individual bale locations, plus associated characteristics such as moisture content. Boundary AI creation means users can create field boundaries before starting work."

Compatible with both open and closed-centre tractor systems, load-sensing hydraulics are now available for all New Holland big balers, allowing control of key functions either from the

cab or via baler-mounted buttons.

"With fewer hydraulic couplings required, setup is simpler and routine operations such as bale ejection, chute control and automatic axle locking are easier," suggests Sion.

"For 2027, further updates include a new CropCutter chopping system with smart driveline, a lighter knife drawer and faster knife exchange, plus optional UltraCutter system, extending maximum knife number from 29 (40mm theoretical chop length) to 57 knives (19.5mm) for greater bale density.

"A new rotor driveline in development has an automatically-controlled hydraulic slip clutch with torque measurement. Automatically adjusted, it provides real-time load status feedback, helping confident full-capacity operation. Should a blockage occur, the driveline safely re-engages with a torque boost of up to 20%."

FENDT AND MF

Tandem-axle Fendt and Massey Ferguson big balers now feature improved suspension and passive steering, plus larger standard tyres. With five rather than four tine bars means swifter swath gathering, while new plastic pick-up bands improve crop flow, cut noise and prevent contaminant ingress, says Fendt's Ed Dennett.

"Packer crankshaft bearings are now factory lubricated for life, while spring tension pre-compression of the sensor flap in the chamber is now lever-adjustable according to conditions. The bale chute, now retained by straps rather than chains, can be folded from the in-cab terminal.

"As for bale length, this is now monitored electronically to ensure preset limits aren't exceeded. An optional twine monitor – standard on XD models – records twine used and provides a 'low' warning," he lists. ●



New Holland updates

Recent New Holland BigBaler Plus and BigBaler High Density updates include availability of IntelliSense baler automation across the range.



WITH ANDREW WILSON

Talking TATIES

More food for thought

“It hardly seems a fortnight since spring and here we are at the cusp of harvest already, the irrigators are at full chat, the hay is made, sheds washed and kit almost ready.

That makes us sound incredibly organised, doesn't it? If only. One flaw in having quite a large armoury of kit is that it all requires attention at some point, which takes a bit of fitting in at times. Some key machines are serviced by respective specialists, but most things go through the farm workshop, which has evolved over time – it has its own filing cabinet now!

We have some appraisal sheets that serve as an aide memoir for all of those little niggles that develop towards the end of a season but don't actually stop you at the time. Such things are easily forgotten eight months later, so an hour walking around a machine making notes while things are fresh is always time well spent.

Much as I dislike the term, we have a few standard operating procedures for things like trailer servicing, where we are quite thorough. If there isn't a year's worth of wear in the brake shoes, spring bushes, wheel bearings, tyres or drawbar eye, then we fit new – I don't want a trailer laid up with poor brakes halfway through

lifting any more than I want an operator coming a cropper with such a thing on the road.

It's another tester of a season, and in these parts root crops are struggling for moisture earlier than they were in 2025. We can only irrigate about a quarter of our potatoes and two thirds of the beet this year, but it's a slog getting around when we're trying to avoid hot daytime hours and are often wrestling with the reality of rather antiquated kit.

A recent dilemma was that of maleic hydrazide on the irrigated crops – fresh tuberisation is a direct response to crop stress and very evident this year, so I grasped the opportunity of a cooler weekend and applied MH in the evening to the irrigated crops. The crops without water are noticeably behind and far too stressed at the moment to even consider such a thing, but hopefully being as we're in the first week of July, there's a bit of time yet. We've proven many times here that a hot growing season increases the physiological age of the daughter tubers significantly, which facilitates early dormancy break in store, which together with delayed movement down the line is a problem that we can all do without.

To pull out a positive, the effect of earlier foliar nutrition and biostimulants to boost the crop's resilience and susceptibility to alternaria has thus far proven fruitful. Calculating return on the cost of such things isn't always

easy, but we're hosting a couple of official trials on the subject this year, which will make the accuracy of such calculations much greater.

During the past two years we've significantly upgraded our grain drying facilities to improve efficiency and reduce over-drying. It had very little exercise last year, and so far, looks like it'll be redundant again in 2026, but what's not to be underestimated is the effect of the heat of the sun on the grain temperature at intake. I had an eye-watering quote this year to upgrade our grain cooling facilities, which given current market prices, is unaffordable.

Running grain through the dryer at either end of the day simply to cool it seems a bit extravagant, but it's much more thorough and effective than pushing it into a heap and hoping a few pedestals can work some magic, in my experience.

Grain in store needs to increase in value by more than the cost of the money it is tying up, plus the cost of its storage and any weight loss. At a pound a month carry, that equation just doesn't look favourable, and with an impending fertiliser tax on the horizon, I feel the shed space and finance will be better employed procuring and storing inputs for 2027 than it will storing grain.

Despite the doldrums of the markets, I remain optimistic for the future of British farming, but the need to be adaptable and react to opportunity is more important than it's ever been. What does that mean for us?

Focus on what consistently works and keep tweaking.

Study cost and value, yet don't glue the chequebook shut – zero investment all too often results in a reverse trajectory that's hard to recover from. Seek out more achievable premiums, ask 'what if?' and consider the consequence of change.

SWOT analysis is quick and easy and often paints a picture that shows what has to happen, which combined with honesty and gut feel, can move things forward into the future.

Finally, and arguably most importantly, continue to invest in people, because a key strength of any business is the team on the ground. This was made very clear to me recently when we had a phenomenally busy fortnight haymaking, irrigating, concreting and setting up for our recent celebrations. To say my team all went way above and beyond without even being asked is an understatement – it was noticed lads, thank you very much indeed.

Keep safe, keep chewing the fat, and happy harvesting. ●

YOUR CORRESPONDENT

Andrew Wilson is a fourth-generation tenant of the Castle Howard Estate in North Yorkshire.

He has a strategic approach to direct drilling on his varied soil types and grows a wide variety of crops. He's passionate about the potato industry and having been utilising cover crops to reduce cultivation and chemical use since 2011, dipped his toe in the water of regenerative potatoes in 2021.

@SpudSlingsby

“I feel the shed space and finance will be better employed procuring and storing inputs for 2027 than it will storing grain.”

Rethinking drought management

“Tuber numbers are higher and more consistent, and uniformity of the crop has increased as stresses are having less of an effect.”

SIMON QUINCE

With early summer record temperatures creating even more challenges for potato growers, new research and product development into heat and drought stress mitigation may offer significant hope for the future. CPM investigates...

By Rob Jones

With a high demand for water at critical times of the growing season, potatoes are on the frontline of the increasing threat of heat and drought stress. In fact, according to Niab's Dr Sarah Roberts, while the issue has always been a threat, it's one that's now a more worrying and frequent problem.

“This is partly because of the increasing variability of UK weather, but also because of the regulation around water abstraction,” she explains. “Licences are more difficult to get and when there's a national drought, agriculture is one of the taps that gets turned off first.

“Rain-fed production versus irrigated is roughly a 50:50 split in the UK. A lot of growers don't have irrigation as it's extremely costly from an infrastructure, equipment and fuel-use point of view.”

Heat and drought stress affect potatoes

at two critical times in their development, with the first of these being tuber initiation taking place in the 2-4 week window after emergence, she continues. “High average temperatures, those above 20°C at this time, really affect tuberisation, with night time temperatures being critical. If these are over 20°C, the process will slow down but it'll typically stop above 25°C, although there's some variation in heat tolerance between varieties.

“The next critical period is bulking when yield can be badly affected by heat and drought stress, but quality can be reduced too. When average temperatures exceed 20°C, potatoes reduce the partitioning of resources to the tubers and there's no net growth – tubers or haulm – above 28°C.

“Potato tubers are 80% water so a simple lack of moisture during bulking up will have a significant impact, but so too do variations in

water availability during that time.”

Sarah explains that when a drought breaks, for example, plants will start growing again and this can result in ‘all sorts of weird and wonderful’ tubers. “These are very difficult to market while presenting huge challenges for the processors.”

ALTERNATIVE APPROACHES

As weather patterns and rainfall become less predictable, it's becoming critical to evaluate ways to mitigate against heat and drought stress, believes Sarah. This involves looking at alternatives such as biological solutions.

“Niab has tested different products during the years, but it's a complex area and most haven't lived up to their hype under trial conditions, possibly as the stress conditions these products were designed to protect against weren't always experienced within the trials.

“It's not impossible that purely rain-fed crops will become increasingly less viable in the future, so heat and drought stress is an important topic to address.”

Dr Christine Jones, crop research scientist at Dyson Farming Research, agrees, although suggests using the right product in the right place can

Managing blight – views from the field

Dry conditions have kept potato blight risk low in many regions, but how are potato agronomists planning to manage the disease as the season progresses?

According to Agrii's Ed Maule, with mancozeb gone from the toolkit, Lieto (zoxamide+ cymoxanil) has formed the base of late blight programmes in his crops across Norfolk, Suffolk and Essex, with the first spray applied soon after full emergence.

"We'll stick to 7-day spray intervals; we don't extend them because of the aggressive blight strains we're now seeing in the UK," he adds. "We're also using fluazinam again, plus cymoxanil for the kickback, so will be alternating chemistry."

"Then subject to the blight risk, as we go into rapid canopy, we'll look at products like Infinito (fluopicolide+ propamocarb hydrochloride) and Privest (ametoctradin+ potassium phosphonates)."

Cyazofamid (as in Ranman Top) and amisulbrom (as in Shinkon) should provide cover through until stable canopy, when Ed says he'll return to Infinito for systemic and translaminar protection, and Ranman Top for tuber blight protection through until desiccation. Should blight pressure rise, he'll reduce spray intervals to four or five days, with Infinito used earlier in the programme.

While the identification of the EU_43_A1 blight strain in neighbouring Suffolk hasn't changed Ed's approach to



Strategic choices

According to Agrii's Ed Maule, with mancozeb gone from the toolkit, Lieto (zoxamide+ cymoxanil) has formed the base of late blight programmes in the crops he manages.

managing late blight, he notes the importance of taking care with CAA group actives and OSBPI oxathiapiprolin.

"But products like Previcur Flex (propamocarb



1,4SIGHT®



SETTING THE STANDARD

For over 25 years, 1,4SIGHT® has led the way in potato sprout controls.

Unlike surface treatments, it works from within - restoring dormancy and stopping sprouting at the source.

The result: longer storage, fewer losses, better potatoes.

Trusted worldwide. Proven over decades.

+44 1738 633 859 www.dormfresh.co.uk



hydrochloride) – which we can be paired with Zorvec Entecta (oxathiapiprolin+ amisulbrom) – give the flexibility to use Zorvec effectively on our dominant blight strain. The key is making sure we're not relying on products in isolation," raises Ed.

With mancozeb effective against both phytophthora and alternaria, any weaknesses in varietal susceptibility or fungicide programmes against the latter may become more apparent this season, he raises.

"We won't know where the gaps are until we've been through the season, but essentially, the more the crop is stressed, the more likely it is to be affected by alternaria."

As such, he says he'll focus on keeping crop nutrition well-managed to improve overall resilience, and integrating alternaria-specific (in potatoes) products such as Caligula (fluopyram+ prothioconazole) into overall strategies.

At Pickenham on the Brecklands of south west Norfolk, VCS Potatoes' Graham Tomalin says his fungicide programmes commence with fluazinam plus cymoxanil, before bringing in a systemic product such as Infinito as canopies start to expand more quickly.

Mindful of the late blight strains present in the UK, developing an anti-resistance strategy is now an essential part of Graham's approach to blight control. He says key to this will be ensuring appropriate use is made of the range of blight fungicide chemistry currently available.

"We have to get away from 'there's resistance to this, don't use it'; it happened with metalaxyl and then fluazinam. We can't do that anymore, we have to use the chemistry that's available, but use it with the right partners so there's an anti-resistance strategy within each application and over the whole programme," he explains.

Graham believes there's sufficient chemistry available to protect crops, but up to the point of a major outbreak. "It'd be challenging to remain within the FRAC guidelines if we had a significant blight outbreak early in the crop. Up to that point we'd be fine, but if we have to try and cure that outbreak, then we'll find it more difficult. We'll quite quickly run out of options."

► deliver significant benefits. "It's a long process though, and you're probably not going to see results from a stress reduction product when it's tested in a year with ideal growing conditions.

"It's also important to remember not all biostimulants are the same; we have to learn how best to use the individual options. The more scientific information there is behind them, the better the understanding we have and the more we're able to use them effectively."

GROUNDING IN EVIDENCE

With product Status (MTU+ pidolic acid) from Intracrop, for example, much work has been carried out to understand its chemistry and how it works, providing a solid starting point

for how best to use it, she says.

"The challenging 2025 potato growing season, characterised by multiple heatwaves, high transpiration rates and lack of rainfall, created the ideal conditions to look at this in greater detail. We chose two trials sites – one on irrigated heathland with the variety Elland, and one on siltland with Caledonian Rose.

"Mid-season stress caused the untreated plots to stall on the irrigated heathland site with no further increase in tuber weight. However, the Status-treated plots maintained bulking, resulting in a 26% yield uplift, from 66t/ha to 83t/ha freshweight."

Christine adds that at the siltland site, early-season stress limited total yield potential across the board, but the treated ►



Whatever the blight pressure, you can rely on Ranman Top.

Keep using Ranman Top to maintain your protection against foliar and tuber blight. With no known resistance to any current or potential blight strain, it's proven, robust and reliable. It's also a great tank mix partner. In fact, Ranman Top is the perfect all-rounder: great value throughout, highly capable when disease pressure rises. Choose the UK's leading potato fungicide. Visit www.certisbelchim.co.uk/ranmantop

RANMAN® TOP

 **Certis Belchim**
GROWING TOGETHER

Use plant protection products safely. Always read the label and product information before use. Ranman® Top (MAPP 20353) contains cyazofamid and is a registered trademark of Ishihara Sangyo Kaisha, Ltd. Contact Certis Belchim on 0845 373 0305, e-mail info.uk@certisbelchim.com or visit www.certisbelchim.co.uk. © Certis Belchim 2025



Performance under pressure

Dr Christine Jones says trials involving Status (MTU+ pidolic acid) have delivered impressive results, despite challenging seasonal conditions.

plots still delivered 45t/ha compared with 32t/ha for the untreated plots, representing a 41% increase in final yield.

"These were impressive results in a very challenging season so we're repeating the trials this year at the same sites. With it shaping up to be another high stress year, we're hoping to get even

greater insight into its use and benefits."

Simon Quince, farm manager at P. J. Lee and Sons in Ely, Cambridgeshire, says one of the biggest challenges the business now faces comes from increasing variable weather. With more than 5000ha of cropping across different soil types, prolonged drought followed by intense rainfall causes significant problems throughout the diverse rotation of sugar beet, maize, wheat and vegetables, including 500ha of potatoes, he says.

VULNERABLE CROP

"It's definitely getting worse, with potatoes being one of the most susceptible crops to the changes, particularly as we're aiming for a high-end quality crop that we can store safely though until late spring the following year.

"Although we're in the driest part of the country, we're able to irrigate about 75% of the potato area, but the main problem we have is fluctuations in temperature – particularly between night and day."

Simon highlights that one night at the end of May this year, the temperature fell to -10 C. "That can cause havoc with plants at that stage. The drier springs are also adding to the problem,

especially as we have restrictions on the water we can abstract for irrigation."

Status was first used in the farm's sugar beet in 2022 but proved so successful that it was quickly adopted for the farm's potatoes, where Simon suggests it's delivered a 'massive difference'. "It's helped to negate the effects on the crop of the different stresses we experience and allows them to recover quickly and keep growing. We apply it with the first blight spray to get the rooting developing early on and have definitely seen improvements in tuber survival.

"Tuber numbers are higher and more consistent than they used to be, and uniformity of the crop has increased as successive stresses are having less of an effect. We're hanging on to those better quality early tubers without secondary ones coming in; so more tubers per plant, and greater uniformity of size too."

The return on investment (ROI) is also impressive, says Simon. "Even at the current low prices for potatoes, you only have to see a 150kg/ha yield improvement for it to be cost effective. The price of the treatment is so low relatively, that it only has to work on 50% of the crop for it to deliver a benefit on the bottom line." ●



BTS 1915

SIGNIFICANTLY DIFFERENT

Tolerance: Rhizomania

- ✓ Highest yielding variety on the BBRO Recommended List 2027
- ✓ High adjusted tonnes: 103.4% treated / 103.8% untreated
- ✓ Stable yield over several seasons and challenging weather conditions



BETASEED.
SIMPLY DIFFERENT.

www.betaseed.com/uk/en



WITH JANINE ADAMSON

LASTWORD

Extraordinary ordinary

believe that farming generates more of these exceptional souls than most other sectors – we're extremely lucky.

So what's instigated this sudden recognition for one's peers? Well, a couple of industry stalwarts announced their retirements recently and I thought to myself, heck, you'll be jolly missed. Yes, Pamela Chambers and Hazel Doonan, I'm referring to you!

This isn't meant to embarrass either in the slightest, but I just wanted to show a nod of appreciation for what these two fabulous women have achieved during their careers. Both have dedicated themselves to their subject areas and represented our industry in a positive, encouraging manner. And you know what, they've done it all with grace and integrity, and critically, shown kindness to others, myself being one.

As I approach the big 4-0, I find myself reflecting even more than usual. Criticism of 'our beloved tome' and its management choices continues to fire my way like a machine gun. There's the

old adage – if you've nothing nice to say, then say nothing at all, which doesn't seem to apply where I'm the one held responsible. But regardless, you begin to question if it is in fact a 'you' problem.

However, what I do know is, I don't want to traverse the years and think, maybe I should have been a bit kinder to folks along the way. Naturally, being the gaffer means I have to make firm decisions, but I don't take them lightly. I'm sure some of you will sympathise with being a leader, often comes heavy choices, but surely it's the delivery that counts?

Some days I'm an impenetrable rhino, others a porous sponge, it varies. But for me, the reason why the aforementioned ladies have made a difference is not for what they've said or necessarily done, but how they've made others feel during the process. The words of encouragement, the willingness to help – it all goes a long way, particularly when I'm in an absorbent mood.

There are other names out

there too who are top notch at their jobs and blinking lovely people, and that's how I want to be thought of. I don't need to pull someone down; blimey, I've even admitted I was wrong about Cereals!

You can respect someone but think they're an idiot, adore someone but think they're useless; all can coexist. I guess what I'm getting at is... it is possible to be good at your job *and* a good person, as demonstrated by two recently retired ladies. So let's have more of that, please. ●

YOUR EDITOR

Janine Adamson began her journalistic career writing obituaries for a local newspaper but fast found her stride within agricultural communications. Now, more than 15 years later, she finds herself at the helm of *CPM*. A proud Staffordshire girl from the Moorlands, Janine takes pride in tackling subjects which although aren't exclusively farming, affect everyone.

“ As with most industries, names and faces in agriculture come and go, people shift things up, or factors beyond control have an influence. But it's when someone retires having committed a lifetime to a cause, that you realise occasionally, a single person can indeed be indispensable.

It's never those who are shouting from the rooftops either, it's often individuals who are quietly effective, super sleuthing their way through daily business, casually making the ordinary extraordinary.

And you know what, I truly

Social media user? Connect with us on Instagram and help to grow *CPM* online.

Just follow **cropproductionmagazine** to keep up to date with what the team is up to, as well as to engage with our latest content.

We're also active on LinkedIn, X and Facebook so why not join the discussion?



BASF

We create chemistry

REVYSTAR® XE BOOST YOUR RETURNS +£369/HA*



***WHEN
REVYSTAR® XE
IS APPLIED
TWICE AT 1L/HA****

When it comes to sugar beet, Revystar® XE is unbeatable.

With proven, long-lasting control against key diseases like cercospora, rust, powdery mildew and ramularia, Revystar® XE helps your crop stay cleaner, greener and more productive for longer.

Visit agricentre.basf.co.uk/Revystar-XE to find out more.

**Value represents the yield difference between two applications of Revystar® XE at 1l/ha compared to Angle® at 1l/ha followed by Caligula® at 1l/ha. Based on a sugar beet price of £30/t. Kynetec Pricing 2025. N=5 2023-2024.

Use plant protection products safely. Always read the label and product information before use. For further product information including warning phrases and symbols refer to www.agricentre.basf.co.uk. Revystar® XE contains mefen-trifluconazole (Revysol®) and flupyroxad (Xemium®). Revystar® XE, Revysol®, and Xemium® are registered Trademarks of BASF. © BASF 2026. All other brand names on this advert are trademarks of other manufacturers in which proprietary rights may exist. All rights reserved.