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Editor's letter

THIS issue of *British Potato Review* has been an absolute belter to work on. The stream of information flowing in has been tremendous and true testament to the enthusiasm and willingness to share good practice and expertise that goes hand-in-hand with the British potato industry.

While it's been a delight to hear from so many different sectors of the industry and report on all number of topics within field, lab, store and legislation environments, I have to admit I'm looking forward to what I feel is a well-earned rest after putting this one to press!

We've got lots of updates to share with you in our pests and disease sections this month, with some valuable advice and insights from many different specialists. Some of those pesky little visitors none of us want to see – wireworm, aphids and spider mites – are the topic of different conversations, while late blight has warranted an extensive feature focus.

Some of those 'off-the-wall' potato topics have also come into the limelight recently and we highlight how the worthy spud is helping boost the proteins markets.

Plans have been hotting up for those two key events that nobody in the industry wants to miss – the *British Potato Industry Awards* and *British Potato Industry Show*, which take place alongside each other in November in Harrogate. Turn to our focus feature to find out which seminar speakers have been announced, who's on this year's judging panel, the name of our new celebrity host, and how to submit an entry for the newly-launched and easy-to-enter categories.

Lots to keep you busy, as if your favourite crop isn't doing that already!

With this issue literally bursting at the seams, we've also got plenty of other people features, interviews and seminar recordings to share with you on our website and save for our July issue, so watch this space and sign up to our weekly e-letters to be kept in the loop.



Stephanie Cornwall

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Editor

Stephanie Cornwall 01778 395055 stephanie.cornwall@warnersgroup.co.uk

Sales Manager

Victoria Liddington 01778 392046 victoria.liddington@warnersgroup.co.uk

Publisher

Juliet Loiselle 01778 391067 julietl@warnersgroup.co.uk

Design

Dean Cole deanc@warnersgroup.co.uk

Subscriptions

01778 392464 subscriptions@warnersgroup.co.uk

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Warners Group Publications, The Maltings, West Street, Bourne, PE10 9PH

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Residue improvements in Europe

THE European Potato Value Chain's latest report on CIPC residue monitoring for the 2023-2024 season reveals there has been consistent improvements in residue levels in Europe.

During the monitoring period, 0.3% of samples exceeded the temporary Maximum Residue Level (tMRL) of 0.35mg/kg - a big improvement on the previous year, when 13% of samples exceeded the 0.4mg/kg tMRL.

*CIPC residue data needed in UK - see storage article on page 10.



15 million meals milestone from supplier's charity work

THE equivalent of 15 million meals have now been donated to charity by potato supplier Albert Bartlett via its 15-year partnership with FareShare.

The UK charity, which celebrates its 30th birthday this year, aims to tackle food waste for social good.

Amongst the organisations helped by Albert Bartlett's donations are The Heart of

Scotstoun in Glasgow and New Beginnings, Improving Lives (NBIL) in Liverpool.

The Heart of Scotstoun has used the surplus potatoes to support its community café and provide meals to vulnerable groups while NBIL uses the potatoes to provide food parcels and stock its mobile food pantry.

Wireworm and IPM findings presented

CONCLUSIONS and recommendations from an Innovative Farmers field lab were presented at a recent Wireworm and Integrated Pest Management Webinar.

Those presenting their findings and sharing recommended actions included: Martyn Cox - Director of Blackthorn Arable, agronomist and expert on wireworm in the UK; Richard Griffith - Senior Trials Agronomist &

DeCyst Sales, Produce Solutions; Ben Clunie - Applied entomologist with expertise in biological control of wireworm, Harper Adams University; Hugh Blogg - Horticultural Advisor, Soil Association, coordinator of the wireworm field lab.

Full coverage of the event is available on the British Potato website at https://britishpotato.co.uk/

TB research and the French table potato's impact

THE role potatoes can play in tuberculosis research and the impact of the French table potato market on the rest of Europe will be highlights of a forthcoming European potato trade conference.

The Europatat Congress will take place in Lille, France, next month (June), when the activities of the trade association's five commissions will first be reviewed.

The commissions are made up of Potatoes for consumption, seed potatoes, sustainability, technical and regulatory issues and RUCIP (Rules and Practices of the Inter-European Trade In Potatoes) and their activities will be reviewed on the first day of the three-day conference, on June 11th.

* For more events news, turn to page 55.







Ring rot found in imported ware potatoes

RING rot has been found in ware potatoes imported from Poland to Great Britain, and an invesigation is underway to identify the source of the disease.

During routine inspections, two related consignments of ware potatoes imported by the same Polish exporter tested positive for Ring Rot (Clavibacter sependonicus), and the The UK Plant Health Service is working with The National Plant Protection Organisation (NPPO) of Poland to gather further information regarding the source of the infected consignment.

Tracing of the affected consignments has been completed, with inspections completed at several locations linked to its movement, together with destruction of the remaining stocks, according to the UK Plant

Service's information portal, stressing that none of the locations involved were potato growers or linked to agriculture.

Until further notice, there will be increased inspections on consignments of ware potatoes from Poland and an update will be published when more information is available.

"There will be a 100% inspection rate and latent testing of all consignments of Polish ware, including for bulk consignments. This has been raised from 50%. If there are any suspect symptoms, the consignments will be put on hold, pending diagnosis," the service announcement states, adding that latent testing of 400 tubers will be carried out, an increase from 200 tubers for all consignments.

"Any findings at a processor would result in a Statutory Plant Health notice being issued, which would require a full clean down and disinfection of the premises before operations could resume." Irrespective of whether there are suspect symptoms, consignments from the affected Polish exporter will be held pending the results of latent testing and any consignment of ware potatoes found to be infected with Clavibacter sependonicus, will be required to be destroyed under a Statutory Plant Health Notice.

"As Clavibacter sependonicus is listed as a GB Quarantine Pest, any confirmed findings would result in official response measures being put in place. Surveillance will be carried out to identify infected and probably infected tubers or plants, places of production and other premises handling potatoes, machinery, vehicles, vessels, stores and any other objects including packaging material.

"Any findings at a processor would result in a Statutory Plant Health notice being issued, which would require a full clean down and disinfection of the premises before operations could resume."

Anyone intending to import ware potatoes is advised to refer to its guidance notes and contact APHA PHSI for any further clarification.



Helping raise temperatures

WALKERS crisps joined a 'warm up' TikTok campaign recently, launching The Temp Drop Collection for a limited time.

Using the winter temperatures to promote products that could 'raise temperatures', the Walkers products joined other Pepsico snack products, as well as some from Doughlicious and UpCircle, with spicy flavourings in the promotion.

The Temp Drop Shop featured on TikTok after 4pm during the three-day campaign, when temperatures outside had started to drop.

The decision to run the campaign followed a recent poll of 2,000 British adults, which revealed 37% citing different quirky ways of staying warm in the winter, such as energetic dancing, blanket forts and applications of Deep Heat muscle rub. More than 80% said they dislike winter because of the cold temperatures.

Growth in potato snack industry

SNACK food producers are optimistic about the next three years, with 92% envisaging growth, according to a recently-published white paper.

'Snack Foods Packaging Trends', published by The Association for Packaging and Processing Technologies, reveals that 88% plan to purchase new machinery over the next three years as a result of new product lines and packaging options. More than half have machinery that is between 20 and 30 years old.

Complete automation is likely to replace manual operation, with the recruitment and retention of labour being a large factor for prompting new machinery purchases and adapting new technology, those surveyed revealed.

Improvements in throughput, food safety and the need to reduce bottlenecks while improving quality control are also key reasons given for imminent purchases.

Manufacturer launches grower support package

IN an effort to support its 250-strong network of UK growers who have faced increased financial pressures over the past year, frozen potato product manufacturer McCain has launched a new ongoing support package.

The package equates to an additional £30 million investment over the next three years.

A major purchaser of the UK potato crop, McCain says it is keen to ensure the long-term sustainability and resilience of British potato growing, which it says is vital to the country's food security.

It is already working with growers to help them transition to regenerative practices and ensure fair prices for their potatoes.

A survey of arable farming decision makers commissioned by McCain revealed that rising energy (35%) and fertiliser costs (32%), as well as environmental threats (36%), are having the biggest pressure on farmers' finances, with half of growers saying this had prompted them to reconsider their future in growing.

The range of support initiatives from McCain will include:

 Adjusting the price per tonne paid for potatoes to reflect the increasing risk of yield variation

- Access to strategic capital support, providing a direct cash injection covering up to 33% of total investment into assets such irrigation infrastructure and storage
- Setting out a 20% advanced payment of contract value to help with cashflow and support the increased negative working capital growers are facing
- · Ensuring a fair and sustainable price for growers

James Young, Vice President, Agriculture at McCain Foods GB said: "British potato growers are facing a myriad of unprecedented challenges from rising input costs to extreme weather events. At McCain, we pride ourselves on the strong partnerships we have built with our 250 growers and are committed to supporting them. We believe this package bolsters our ongoing collaboration with growers to help ensure the long-term sustainability of British agriculture."

McCain is also working with growers to navigate extreme weather patterns, such as heavy rainfall, flooding and unseasonably mild temperatures, that are placing additional strain on farmers' finances. Together with its growers, McCain has committed to implementing regenerative agricultural

practices across 100% of its global potato acreage by the end of 2030.

The package has been welcomed by growers. Sam Daw, a grower for McCain Food GB, said his business's partnership with McCain had helped provide "clear and positive impact" on direction and investment.

"The new package has rejuvenated confidence in the sector, reshaped our cashflow and allowed for investment and growth planning," he said, adding: "The commitment to regenerative agriculture complements our other farming enterprises. Incorporating manures from our livestock, keeping green cover over fields for longer with cover crops and utilising reduced soil movement cultivation equipment across a wider range of crops - the farm's relationship with McCain is so much more than a potato crop."

To support its growers on this transition, McCain is testing regenerative agriculture practices and trialling new technology at its Farms of the Future projects, located in McCain's hometown of Florenceville, New Brunswick, and in South Africa. This is supported in the UK by three demonstration farms across the country, where growers will be invited to see the results firsthand.

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Chef speaks out on potato waste

THE Love Food Hate Waste survey, carried out by the Waste and Resources Action programme (WRAP) revealed that around three quarters of UK adults prefer loose to packaged when buying fresh potatoes, and an award-winning chef campaigned for consumers to value their potatoes more during the recent Food Waste Action Week.

Award-winning author, chef and campaigner Max La highlighted the reality of how much pre-packaged fruit and vegetables, particularly potatoes, end up in the bin in a tongue-in-cheek home cooking video.

At the same time, the Love Food Hate Waste survey indicates that UK adults who buy fresh prefer loose, including Max.

"It floors me that we are throwing away so many potatoes every year before we have had chance to use them. Buying them loose would allow us to choose an amount we know we'd realistically use, whether that is one giant potato for baking or a few smaller ones to make mash," he said.

Each year in UK homes 510,000 tonnes of potatoes are binned, representing 46% of all potatoes bought.

Of the adults in the UK (16+) who buy fresh fruit and vegetables, 78% said they would be likely to buy their usual fruit and veg loose if they were sold that way, which was one of the highest given answers compared to other packaging formats – followed by paper bags or sacks (77%) and cardboard trays/boxes and cartons (75%).

On the other hand, less than half said they would be likely to buy their usual fruit and veg in plastic packaging, such as plastic trays/boxes/cartons (46%), and plastic bags/sacks (47%). The only packaging format with a lower preference score was wooden crates (43%). When survey respondents were asked about the fresh fruit or vegetables they buy

most often, on balance, loose came out on top – 56% preferred loose compared to 39% who preferred packaged.

Of the 56% who would prefer their fruit and veg loose, over two thirds (68%) say this would allow them to buy exactly the amount they need.

When asked their reasons for why they throw away food that they had not eaten, 75% of UK adults (16+) who admitted to doing this, stated that the food was out of date/had gone off, indicating that people are wasting food and buying more than they have time to use.

"It floors me that we are throwing away so many potatoes every year before we have had chance to use them."





The foliage forte Second season of TRIP trials demonstrates how science is slowly overcoming scepticism when it comes to direct nutrient applications. One of the projects main projects main projects main possible to evaluate ways to minimise the application and in particular nitrogen, phosphate and potassium.

ESULTS of the second season of the Transformative Reduced Input Potatoes (TRIP) trials have highlighted that direct applications are driving increased nutrient use efficiency, while highlighting the importance of getting the right mix of ingredients.

One of the project's main aims is to evaluate ways to minimise the application of soil-applied inputs and in particular nitrogen, phosphate and potassium.

The main alternative to traditional methods of applying inputs via the soil is to use systems that deliver nutrients directly to the plant. Foliar applications ensure direct and indirect cellular uptake through the stomata, trichomes, leaf wax layer (cuticula) or through movement in the xylem (passive) or phloem (active).

The aim of the TRIPS research is to achieve increased absorption rates and a means of translocation to the growing points to improve nutrient use efficiency (NUE) as the method the potato plant will use to absorb is dependent on the product's formulation

Foliar applications have been used for more than 30 years, but there is still scepticism in their effectiveness when it comes to applying nitrogen, phosphate and other nutrients in this way. This scepticism is often based on historic issues such as leaf scorch, low dose application resulting in the need for several passes, as well as the need for specific weather conditions or a perceived lack of effectiveness.

Within the TRIP project, Simon Fox, MD of Emerald Research Ltd (ERL), has been leading work to develop and optimise plant nutrition formulations that offer easy uptake and assimilation by the crop that can be delivered directly to the crop canopy via foliar sprays.

He said: "As with Crop Protection Products (CPP), formulation is key to success with foliar-applied nutrients and biostimulants.

The right mix of active ingredients requires significant, thorough and meticulous formulation in order to deliver them safely and efficiently to the right targets within the plant."

Through optimising the plant's ability to utilise the nutrients applied through foliar applications, there is a huge potential to reduce 'nutrient over application' which is not uncommon with standard nitrogen and phosphate recommendations, he said.

To enable farmers and growers to feel confident in foliar applications, their concerns around using them on farm must be addressed, so the TRIP team has looked at developing formulations that:

- Are rapidly rain-fast and absorbed removing concerns around weather intervals
- Have low to zero scorch characteristics preventing detrimental crop damage
- Can be mixed with CPPs removing the need for repeated tractor passes
- Have high Nutrient Use Efficiency (NUE)

To meet the above criteria, all nutrient candidate's assays go through rigorous laboratory and glass-house trials on varying crops before they are trialled in field plots, from which the top performing assays are taken forwards to strip trials.

Having carried out much of this work during the first year of the project, the best products were selected to go forwards for randomised plot tests in 2024.

2024 DFR trials

As part of the 2024 season's trials, Dyson Farming Research (DFR) conducted replicated plot trials comparing potato yield responses to soil-applied versus soil plus foliar-applied nitrogen, phosphate or potassium.

Two nitrogen trials were conducted, one on a low organic matter site and the other on a high organic matter site. Both experiments

showed improved nutrient use efficiency of the directly-applied 62kg/ha of nitrogen, combined with the benefit of no additional environmental losses to soil or water.

On the low organic matter site, application of 100kg N/ha to soil, plus 62kg N/ha to the foliage, gave a yield equivalent to 300kg N/ha applied to soil. On the high organic matter site, application of 100kg N/ha to soil, plus 62kg N/ha to the foliage, gave a yield equivalent to 200kg N/ha applied to soil, while combining the foliar treatment with 200kg N/ha applied to soil gave a yield equivalent to 300kg N/ha applied to soil.

In the phosphate field trials, direct application of phosphate to the leaf was shown to have a beneficial effect on yield, with equivalent results from treatments P200+SP and P300. By avoiding the soil as a means of nutrient transport, the direct application ensured rapid use and avoids soil lock-up, Simon said.

With the potassium experiment, there was little response to application of more than 100kg K2O/ha to soil. However, a comparison of all treatments with potash applied to soil against potash applied to soil plus foliage, showed a significant yield response to the foliar application, again demonstrating efficient use of foliar-applied nutrients.

Commercial on-farm trials

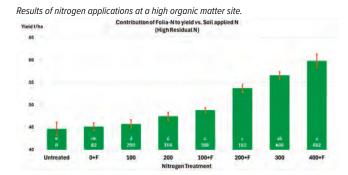
Running concurrently with the DFR randomised plot trials, the project also trialled the foliar products as part of a systematic approach to reducing overall input levels on farm. Strip trials looked at the practicalities of nutrient stacking using foliar application, and the impact on yield and gross margin.

The results revealed it is possible to reduce the levels of nitrogen and phosphate input, with no detrimental loss of yield but with an improved gross margin.

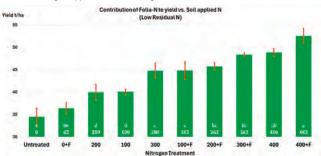












Foliar application advantages

Aside from the reduction in inputs through the improved nutrient use efficiency, as well as yield responses and improved gross margin, foliar applications offer several additional benefits.

Work though bodies such as Rothamsted, AHDB and ADAS has shown that nutrient use efficiency (NUE) of soil-applied nitrogen is typically 55% or less for many crops, and even lower for potatoes, owing to their shallow and poorly-developed root system. Later top dressings have an even lower in NUE.

The TRIP research supports a growing body of evidence that an NUE of 90% or more can be achieved from foliar-applied nutrients, including nitrogen, allowing growers to reduce their overall nitrogen applications by up to 35%.

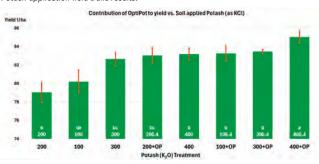
This can be realised because it is directly applied to the leaves, bypassing the need for the nitrogen to pass into the soil, where it risks being washed away, volatilisation as ammonia or nitrous oxide, being leached through the soil and into watercourses, those working on the project have stressed.

Another advantage is that macro and micronutrient applications are timed to meet a crop's increased need for energy at each growth stage and as such, foliar applications can ensure immediate uptake and use. Without having to rely on rain/dew required to dissolve soilapplied products, foliar uptake minimises the time delay between application and crop use.

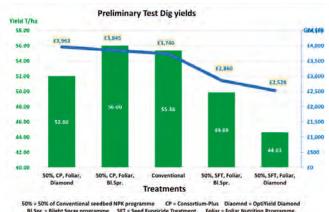
Furthermore, the precision application of treatments to the leaf area has been shown to significantly reduce the level of inputs that come into direct contact with the soil. In the case of nitrogen, this minimises run-off caused by heavy rain, which in turn contributes to

Phosphate application trials results.

Potash application field trails results.



The trials were laid out as follows.



a reduction in the build-up of nitrates in watercourses and the resulting algae blooms.

With regard to phosphate, it is a practical way to prevent losses through soil lock-up attributed to 'nutrient over application'.

By feeding the crop rather than the soil, soil health is not impaired through excess chemical applications, with root mass development therefore being supported, maximising nutrient uptake from the existing soil reserves.

The TRIP Project

The TRIP (Transformative Reduced Input in Potatoes) project is funded by The Department for Environment, Food and Rural Affairs (Defra) and the UK Research and Innovation (UKRI) Transforming Food Production Challenge. The project is receiving £1.74m over a 36-month period running for three growing seasons until harvest 2025.

The project is run as a collaboration with a consortium of key industry, academic and farming partners, including Emerald Research Ltd, Dyson Farming, Bangor University, The James Hutton Institute and Light Science Technologies

Potato growing uses intensive soil cultivation and very large inputs of inorganic nutrients, herbicides, fungicides and insecticides. Large amounts of energy are also used in cooled storage to prevent post-production sprouting prior to consumer use. This results in continuous degradation of farm soil organic matter, and large emissions of CO2 and N2O, two major greenhouse gases.

The 36-month research programme will develop a regenerative method to address these problems and provide cost-competitive solutions to potato growers.

Urgent Call to protect potato stores

CIPC residue data needed to ensure level set at a rate that enables potato stores to remain in use.

OTATO storage capacity in Britain could be at risk without the input of store operators and owners, it has been claimed.

An urgent call has gone out for CIPC residue samples to be submitted to ensure a piece of legislation that secures stores' futures remains in place.

The CIPC Residues Monitoring Group, which has made the call to store operators, says It is crucial that those operating in the British potato industry continue to supply monitoring data to retain the temporary Maximum Residue Level (tMRL) which is annually reviewed.

The Chemicals Regulation Division (CRD) set the tMRL) for chlorpropham (CIPC) at 0.35 mg/kg, effective from April 10th, 2024 and its continuation depends entirely on whether the British potato industry can provide evidence that it's still needed, the group has stressed.

"CIPC was a staple in sprout suppression for decades. But the legacy residues it leaves behind are now putting our storage capacity at risk. If we can't demonstrate that a tMRL above the limit of detection (0.01 ppm) is still necessary, stores with historic CIPC use may no longer be usable. The consequences for growers, packers, and the wider supply chain would be significant," the group stated in a recent public announcement.

Data collected last year shows that without the tMRL, 22.5% of storage facilities would have exceeded the detection limit. These stores would not have been permitted for use had the limit been set to the detection threshold.

"This is why it's so important to keep the data flowing," the group states.

Most growers already have access to the necessary data. It often comes through customer testing of potato samples or Red Tractor certification sampling.

The CRMG coordinates the anonymised data submission to CRD on behalf of the entire industry submissions can be made by sending residue data to the group's Independent Chair, Adrian Cunnington, at adrian@potatostorageinsight.com. Adrian will anonymise the data before submitting it to CRD.

For the 2025 CRD submission, CRMG needs at least 125 new samples. Those who have potato stores previously treated with CIPC and are holding crops for at least two months this season, should provide at least one of their regular multi-residue test results.

"It is crucial that industry continues to supply monitoring data to retain the temporary MRL. HSE will oversee this to ensure the tMRL continues to be set at an appropriate level. Its retention relies on the industry providing the evidence that it's still needed," Adrian said.

What is needed

If you have potato stores previously treated with CIPC and are holding or have held crops for at least two months this season, provide at least one of your regular multi-residue test results that includes chlorpropham.

Even those who sent test results last year, should re-submit data for this season

Residue data should be sent to CRMG'S Independent Chair, Adrian Cunnington, at

adrian@potatostorageinsight.com

An online form can be completed. Attach a copy of your lab result.

Data must be submitted by May 31st in order to be included in the 2025 submission.

In 2024, the CIPC Residues Monitoring Group submitted 102 residue data results from potato samples held in stores during 2023/24. The stores had been previously treated with CIPC (chlorpropham) at some time in their history.

These data were voluntarily submitted to the group, on an anonymous basis, in answer to a request to the potato industry for information from the Health & Safety Executive to allow the suitability of the new temporary maximum residue level for CIPC to be assessed.

Data collected last year shows that, without the tMRL, around one in four storage facilities would have exceeded the limit of detection (LoD). These stores could have generated exceedances had the tMRL not been introduced.

Sprout control supplier comes of age

POTATO sprout control technology provider, Biofresh Safestore, celebrates 21 years of service this month (May) and to mark its anniversary, offered a 10% installation discount to attendees of the Strategic Potato Storage Day committing to a site survey on the day.

The company completed its first Safestore system installation in 2004 and has since gone on to install systems treating more than half a million tonnes of potatoes at farms and potato stores across the UK, Europe and further afield.







Biostimulant receives official verification

MEX's biostimulant Kelpak is now available with the European CE mark for Registered Biostimulants (PFC Cat 6), providing the added assurance of an official verification.

The product is an organic biostimulant containing concentrated extract of the kelp species Ecklonia maxima which can be used on potatoes to enhance root growth and improve crop establishment, ultimately leading to higher yield and better quality.

It is trusted for its proven ability to support crop resilience, enhance root development, and improve quality and yield. Now, with its registered status, farmers can be further assured of its efficacy. The European CE mark highlights Kelpak's compliance with stringent regulatory standards.

Kelpak helps to increase plant tolerance to abiotic stress and is manufactured using a unique cell-burst process without heat, chemical digestion or dehydration. The manufacturer says this patented process ensures maximum retention of the auxins and cytokinins found in this species of kelp.

Kelpak also contains a wide range of nutrients, vitamins and amino acids

Fuller soil understanding for advisors

RM has launched an online course developed in partnership with BASIS which will give those advising potato growers a fuller understanding of soil analysis.

Entitled Laboratory Analysis 1: Soil Nutrients and written by NRM agronomists, it is the first in a two-part series.

The programme is structured to guide participants through key aspects of soil nutrient analysis, exploring sample quality and the importance of precise sampling, then moves on to explaining units of measurement and the interpretation of laboratory nutrient results. The final section describes the laboratory process itself, from sample preparation to reporting results, offering a behind-the-scenes look at how nutrients are measured.

Course co-author Dr Sajjad Awan who is Soil & Crop Nutrition Agronomist at NRM, said: "Understanding soil nutrients is fundamental to making informed decisions to better manage crops and soils."

Scientific company furthers government service

ERA Science Limited, which offers crop testing and molecular facilities to help UK potato growers, will be providing future scientific and strategic services to government after being awarded the Specialist Science and Contingency Services (SSCS) contract by the Department for Environment, Food & Rural Affairs (Defra), the Food Standards Agency and the Home Office.

This contract has been awarded for an initial five-year term, with options to extend for up to five further years.

Building upon a decade of support to the government under a Long-Term Services Agreement (LTSA) since 2015, this new contract ensures the continuation and expansion of its scientific work. Under the LTSA, Fera has supported Defra and other government departments across a broad spectrum of strategic science services, including advancing research, enhancing data analysis, strengthening border security, protecting the natural environment and helping to ensure food safety.

The SSCS contract is designed to maintain consistency and quality while delivering value for money through structured pricing and rigorous performance measures. Additionally, it aims to drive further excellence in service delivery, fostering innovation and scientific advancement over its term.

Fera Chief Executive Officer Andrew Swift said the award would enable Fera to reinforce its strong relationship with Defra,



the Food Standards Agency (FSA), and the Health and Safety Executive (HSE), while building on past successes.

"The specialist scientific and strategic services delivered under this contract will have the potential to support the government's effort to drive growth for the UK economy," he said.

"The translatable nature of innovation and scientific service being delivered under the SSCS will foster and strengthen the private sector by supporting the early adoption of technology, cutting-edge research, datadriven insights and sustainable solutions."



A liquid diet

When it comes to nutrition, what are the arguments for changing from a solid fertilisation system. We share some insights.



ITH unpredictable weather patterns effectively shortening the growing season, maximising the accuracy and efficiency of fertiliser applications is crucial.

Liquid fertilisers make precise and optimal applications possible, and there are potential benefits for growers who want to make the switch from a solid system.

Liquid fertilisers can be spread further and faster. They absorb quickly so applications aren't held up by less-than-ideal weather conditions as would be the case with solid spreaders. Then there's the accuracy that's possible, especially when it comes to headlands.

Sarah Walby, Account Manager for Yara's Crop Nutrition Services team, said: "On headlands, you can be particularly accurate with a stream jet nozzle to fertilise to the edge of the crop and no further. There is no wastage, there's nothing sent into a ditch, but equally it's maximising that headland yield which is sometimes the part that's lacking if you haven't managed to spin a solid fertiliser far enough."



A more targeted approach with liquid fertilisers is also becoming increasingly important as more land is entered into environmental schemes and less is available for food production. Growers need to be as precise as possible in managing cropped ground and maximising crop nutrition to the land that's available.

Liquids versus solids

Converting to liquid from a solid system is easy enough to do. For example, Yara's system is tank-based system, so there are no bags to be unloaded, and tanks are rented out to farms, so there are no upfront costs to consider.

Growers thinking about making the switch do need to consider their sprayer capacity. If spray capacity is already stretched in terms of size and timings, adding an extra process may bring more challenges than benefits.

On the cusp of a biologicals boom?

One Doncaster grower has been impressed at the low impact on dry matter during his first biologicals trial while an agriscience specialist says concepts are now becoming more robust.



IDELY predicted to overtake the size of the fungicides market by the end of the decade, the use of biologicals in UK potato growing is growing year on year.

Knowledge, experience and trust are required for agronomists to recommend a product and for a farmer to invest in it. That takes time, but all the drivers for growth are in place.

Biologicals have a good origin story: They are naturally derived, sustainable, and designed to unlock yield potential while protecting the environment – all beneficial for potato growing businesses. With fewer regulatory hoops to jump through – for the time being at least, manufacturers are also able to get their innovations to market quicker than conventional crop protection chemistry.

Globally, the market for biologicals is put at \$9bn but experts believe this will reach \$25bn by 2035, making it 20-25% of the overall global crop protection market.

Corteva Agriscience moved quickly to establish itself as a main player in the biologicals market. As well as investing in R&D, the organisation completed its purchase of companies Stoller and Symborg in 2023.

Corteva Agriscience's Category Marketing Manager for biologicals, John Sellars, doesn't believe biologicals will replace conventional chemistry, which he says remain important tools for growers to produce crops, but says their adoption is growing with growers regarding them as "complementary, sustainably-advantaged solutions".

Biologicals aren't a new concept, but as all sectors of the potato industry are striving to meet strict climate change targets, their importance will increase, with many growers now looking for alternatives and starting to see them as part of the solution. "The concepts are becoming more robust. We now have formulations and technology that enable longer shelf life and allow delivery and use that couldn't be achieved before," John said. "It isn't just one thing meaning that biologicals are rapidly becoming more centre-stage. A variety of factors are coming together."

Regulatory pressure on synthetic crop protection products is also a significant driver, as more and more products face restrictions, an outright ban or fail to secure legislation at the development stage.

"Regulations and legislation will result in more active ingredients being taken out of the market in the future," said John. "The industry is desperate for new modes of action. We have fewer available to us, and this will only reduce further over time, plus resistance is an issue.

"For biologicals, the hurdles to launch a product in terms of regulation are a lot lower, so a new product can be brought to market quickly."

Efficacy is also good and will improve as more research is put into practice and smaller companies merge to combine expertise. This will also boost market reach, as increased investment enables concepts to be scaled up, he said.





Whether growers opt for liquid or solid fertiliser, the advice as always is to get the soil pH and overall health right. Growers are advised to carry out soil testing every three to five years, at the same time of the year, ideally when the soil is cool, and prior to any fertiliser or organic manure applications.

This enables timely adjustment of the crop nutrition strategy and time to budget, if there's a lot of liming to do.

"We talk about a lot of cost in our industry, but the money being spent on correcting your pH is always going to be beneficial because plants that are below target can't properly utilise the crop nutrition you're applying," said Sarah.

New distribution hub

Sales manager for OMEX Ireland, Luke Thornton, said liquid fertilisers are revolutionising nutrient management within tillage applications across Ireland.

"Our liquid fertiliser solutions are designed to optimise nutrient uptake, maximise productivity, and support sustainable farming practices," he said, adding that they offer a precision-based

approach, delivering essential nutrients exactly where and when they are needed.

OMEX Ireland has officially opened the country's first and largest dedicated liquid fertiliser distribution hub at the Port of Cork.

The Cork terminal is the largest of its kind in Ireland and is strategically positioned to serve all key agricultural regions. The state-of-the-art facility utilises cutting edge fertiliser technology, operating 24/7 to supply liquid N+S fertilisers.

The facility was officially inaugurated on March 5th, with key representatives from OMEX, including Chairman Max Winkler and Managing Director Sam Bell.



FACTFILE

There are several variables when it comes to applying liquid fertiliser to potatoes depending on whether they are being grown for seed, ware and so on.

Yara's main focus is on the 'profit from placement' approach. Smarter inputs help to reduce waste, and drive efficiency through accurate placement and Sarah encourages liquid placement for potato crops because she believes it offers increased efficiency as follows:

- Fertiliser is placed directly into a moist root zone, a controlled distance from the seed
- Placement reduces the chance of nutrient leaching
- By placing a high concentration of P, we reduce the chances of phosphate lock up by using broadcast phosphate
- Ample NPK supply even in dry periods, with no scorch risk The Yara Multi product range offers a tailored approach, with more than 300 different grades available to suit the grower's requirements.

As with any fast-moving technology, the main disadvantages come from the regulatory and policy environment needing to catch up with biologicals and their rapid integration into the market.

"We're building the plane and flying it at the same time," said John. "Biologicals are an emerging market in the UK and Europe and that dataset isn't the same as conventional products for that reason.

"However, that's not to say that biologicals aren't put through the same robust trials and testing practices. A lot of these products have already been trialled and tested elsewhere in the world, where their use is commonplace. We're just characterising them for our particular markets.

"If a product is available then it is robust and trustworthy. We know from market research that growers want data-supported concepts, so scientific rigour is essential."

'Unbelievable' results in **Doncaster**

Doncaster grower Andrew Houghton said he was sceptical before trying biologicals for the first time but is now a convert after seeing significant increases in yield.

EW Houghton & Sons grows 5-600 acres of potatoes every year, which it sells to Walkers. Under pressure to reduce its carbon footprint and keen to boost yields, Andrew agreed to trial BlueN on two varieties of potatoes: Punchy and Arsenal.

"I decided to try BlueN because it looked promising," Andrew says. "However, I'd never used a biological product before, so I was a bit sceptical. We didn't have any problems with quality before, but processing potatoes never yield particularly well."

The trials were conducted in the middle of a field, so the area was treated exactly the same as the rest of the field, the only difference being a 333g/Ha application of BlueN on 13 June.

BlueN was applied at growth stage GS 51-55 when flower buds were present, before being harvested on September 5th.

"Overall, the Punchy trial area delivered bigger yields and fewer smaller potatoes," Andrew said.

Whereas the untreated crop delivered 46.07T/ha, the area treated with BlueN yielded 59.33T/ha - a yield increase of 13.26T/ha.

Arsenal delivered a slightly smaller, but still tangible, yield increase. The untreated plot delivered 53.37T/ha, whereas the area treated with BlueN yielded 58.42T/ha - an increase of 5.05T/ha.

"We have to be very careful because nitrogen does affect the quality - it lowers the dry matter. However, BlueN didn't," Andrew said. "It didn't alter the fry colour, so we were very pleased with it."

Andrew was particularly pleased with the results considering the poor weather conditions the farm was forced to contend with last year.

"I will use BlueN again this year," he said. "It seems unbelievable that you can apply it to the crops and then they can use nitrogen from the atmosphere. It will be interesting to see what difference it makes if we have better conditions this year as well."

LINCOLNSHIRE-based G & A Crop Nutrition Ltd, which advises on modern techniques and products, in combination with foliar nutrition, to advance crop yields, recently shared this photo with British Potato Review, in a potato field where it has helped a grower use biologicals to his advantage.

The photo shows Maris Piper planting on the East Coast Lincolnshire silts where

a potato grower has successfully substituted conventional chemistry for beneficial bacteria, carbon, proteins and organic acids to give the best skin finish.



Campaign to change biostimulant legislation

MERALD Research (ERL), supplier of crop nutrition programmes and the OptiYield range of biostimulants used by potato growers, has launched a campaign to modernise UK regulation of biopesticides.

Its board adviser, George Eustice, has set out recommendations to enable new, low impact biological products to make it to market faster and support the transition away from synthetic chemical pesticides.

George, a former Secretary of State at DEFRA, said: "UK policy on microbials and pheromones is governed by legacy EU laws, which make little sense. Biopesticides are regulated as active ingredients in very much the same way as synthetic chemical pesticides, even though they often use compounds that are well understood and abundant in the natural environment. In most cases, the environment has evolved over millions of years to accommodate them.

"As soon as a biological product makes a plant protection claim, it is forced through the same regulatory regime as synthetic chemicals. In reality, the boundaries between good nutrition, a healthy soil biome and plant health overlap with crop protection objectives. It is ridiculous to regulate biopesticides in the same way as synthetic chemical products."

George has set out a package of proposals for the UK government to consider, which he says would bring the legislation into line with the reformed approach to regulating precision breeding techniques such as gene editing and borrows elements used in the regulation of herbal medicines.

He said: "It has long been established that traditional herbal medicines should be regulated very differently to pharmaceutical drugs because they are naturally occurring compounds that have often been used for decades in traditional medicine for certain conditions. There is a proportionate registration scheme for such products.

"In addition, through the Genetic Technology Act, Defra established a registration scheme for precision-bred organisms that replaced outdated EU processes and is probably the closest template to adopt for a reformed approach to biopesticide regulation." He recommended the following threestage assessment process:

- A company seeking to bring a biopesticide product to market would submit an application to the Health and Safety Executive for a marketing authorisation under a new Biopesticide Marketing Authorisation scheme.
- 2. If the product was derived from naturally occurring compounds, they would be judged eligible for the registration scheme. The process could be supported by the establishment of a "green list" of commonly used natural compounds in agriculture.
- 3. Following assessment for eligibility for the scheme, both the FSA and the Advisory Committee of Releases to the Environment (ACRE) could carry out risk assessments on health and the environment respectively. They could be asked to triage products into a light touch 'tier 1' assessment or a more detailed 'tier 2' assessment just as happens now with precision breeding techniques such as gene editing.



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More than skin-deep

First skin-transplant potato variety obtains plant breeders' rights

HE Board for Plant Varieties in the Netherlands has granted plant breeders' rights to a new potato variety which is the first of its kind to feature a skin transplant.

The new variety is developed using KeyGene's proprietary 2S1* technique for creating graft hybrids. The technique combines desirable skin traits, such as drought tolerance and insect repellence, from one variety with high-yield traits from another.

KeyGene's new 2S1* potato variety combines the skin of Pimpernel with the inner cell layers of Bintje. This way, the variety retains many of Bintje's essential properties, supplemented with a suite of skin-related traits from Pimpernel, which are manifested on all aboveground plant parts plus the tubers.

The combination of Pimpernel skin and Bintje inner cells has proved to be stable. After several years of seed potato production, the seed potatoes, the plants growing from the seed potatoes, and the potatoes produced by these plants faithfully maintain their unique combination of cell layers.

KeyGene Scientist Jeroen Stuurman, who has been the lead developer of the 2S1* technology, said: "We have made an old breeding dream finally come true by developing a skin-grafted potato variety. While this type of grafting is a rare natural phenomenon, sometimes seen to occur on grafted fruit trees in ancient orchards, our new 2S1 technology turns it into a rational technique to harness natural genetic variation for breeding purposes in an entirely new way."

Roeland van Ham, CEO of KeyGene, said the achievement marked a real breakthrough in plant breeding.

"It offers significant potential for the development of new varieties in vegetatively-propagated crops, such as potato, fruit trees and berries, in a much shorter time frame," he said. "We also see potential for new product concepts in seed-propagated crops. For all these crops, our technology can help address



Jeroen Stuurman, Scientist and Lead Developer

some of the toughest breeding challenges in sustainable food production."

The granting of Plant Breeders' Rights by Board for Plant Varieties in the Netherlands proves that these skin-transplant varieties can be commercialised as new varieties.

Practical research Unveiled Open day focusses on field trials results, with key updates from participants.

HE 2025 Hutchinsons Potato Trials Results day hosted at Worth Farms, Boston, recently, focussed on field trials results and practical research on PCN, crop safety with post-emergence herbicides, wireworm, catch crops, late blight and Alternaria.

Simon Faulkner of SDF Agriculture updated delegates on results from Hutchinsons' PCN varietal resistance and tolerance trials assessing a mix of older and newer varieties with and without applications of a nematicide (fosthiazate).

The replicated trial monitored 26 varieties put forward by a number of breeders, with varieties for processing, packing, chipping and crisping, with Lanorma, Cara, Markies and Maris Piper as control varieties.

The background PCN level for the field was 20 eggs/gram, and on creating the plots, the plots were then re-sampled to identify eggs/g per plot, which ranged from 0.5-20 eggs/g of soil.

Results showed newer varieties exhibited better resistance. "Cara had the highest yield, but as it has no resistance, PCN numbers went from seven eggs/g to 686 eggs/g despite an application of a nematicide, while some of resistant varieties saw a reduction from 12 egg/g to 0.5 eggs/g under the same conditions," said Simon.

There were nine varieties which did particularly well, obtaining a pf/pi of <0.3 when no nematicides had been applied.

He reminded delegates that tolerance means a particular variety can still maintain growth when under considerable pressure from PCN and more vigorous canopies are an indication of this.

Herbicide crop safety

Michael Rodger of Richard Austin Agriculture said timing of post emergence herbicide applications is key to minimising damage and results from Hutchinsons' herbicide crop safety trials across 26 new and established varieties, gave very different results from those in 2023

"Most of the varieties showed some form of chlorosis," he said. "The difference between weather conditions was also telling, with some of the varieties which did not show sensitivity to metribuzin last year, showing symptoms of scorch this year."

He put this down to strong sunlight and water-stress at the time of treatment. He also revealed that some of the crops hit by herbicides became more vulnerable to secondary infections such as Botrytis and Alternaria.



Technical Root Crop Manager Darryl Shailes spoke about work done at the James Hutton Institute last year.



Simon Faulkner of SDF Agriculture spoke about PCN varietal resistance and tolerance trials.



Martyn Cox of Blackthorn Arable updated on latest wireworm findings.

"Crop safety is variety specific and knowing the susceptibility to herbicide damage of individual varieties, plus assessing any stress the crop is under, provides crucial data for basing decisions on which active to use."

Also presenting the results of PCN trials, he revealed fewer PCN eggs per plot at the end of the trial from a number of varieties across the freshpack, processing, chipping and crisping sectors.

"We were not only looking at the PF:PI ratios, but also the relationship with yield in plots treated with nematicide and those left untreated as a measure of tolerance."

Some of the varieties trialled showed different results last year from PCN trials done in 2023. "Results are very specific to soil type and initial egg counts. These trials were done on Lincolnshire silts, but outcomes can be very different on lighter sandy soils especially with regards to tolerance."

Options on wireworm

Remedial action for wireworm needs to start at least three years ahead of planting a potato crop, advised wireworm specialist Martyn Cox of Blackthorn Arable. This implies that where potatoes are grown in the rotation is key to minimising wireworm damage, and growers should not be fixated on the autumn before potato planting, he said.

"Growing broad leaf crops two to three years ahead of potatoes, as these are less favoured for egg laying, is one of the options available for controlling wireworm. As some insecticides can reduce adult beetle activity if used when they are active in crops, this is another possibility, as is cultivating immediately soon after harvesting cereals and subsequently keeping fields free of vegetation for at least a month," said Martyn.

He recommended avoiding cereal species in cover crops during high-risks parts of the rotation.

Click beetles prefer to lay eggs in May and June in land with vegetation, so cereals followed by cover crops or left with weedy stubbles provide a good source of food after hatching and into autumn, he said. "There is a widely-held belief that cultivation will get rid of wireworms and although inversion cultivation when they are active in the upper profile can reduce a population, it will not get rid of them."

Martyn said those identified in arable soils are three Agriotes spp.: A. obscurus, which is present throughout the UK; A. lineatus, is also present, but to a lesser extent; A. sputator which is common in East Anglia but fades out around the Humber. Other species commonly damaging crops belong to the genera Athous, others including Hemicrepidius are regularly found in some soils. They can damage potatoes but do not appear to damage other crops. Adrastus pallens can be very common and even large numbers do not appear to damage potatoes at all.

Factors that indicate higher Agriotes risk include grass crops and cereals, land with good soil moisture retention, lower-lying more humid areas, also near to other areas of permanent grass such as irrigation reservoirs and river banks, he said, adding: "Wireworm can build up without your realising it, and in early August a crop may be past salvaging."

Fight Against Blight

Hutchinsons is one of the sponsors of the Fight Against Blight, and its Technical Root Crop Manager Darryl Shailes spoke about work done at the James Hutton Institute last year, when outbreaks of blight strain EU_46_A1 were identified very late in the season for the first time.

"The resistance found in Europe is due to their blight control strategies and the tendency to block spray," he said.







AGRONOMIST TRIALS

He said EU_46_A1 has the ability to become insensitive to OXTP and CAA group of fungicides. The samples taken in the UK were tested for the resistance genes at JHI and found to have the gene for resistance to OXTP but not CAA's – something growers need to consider when devising blight strategies this year.

He emphasised the need to alternate different modes of activity, not only to control blight but to manage resistance and noted that last year there was a high number of outbreaks of blight across all the potato growing areas. Collected data showed EU_36_A2 to be the dominant strain in England.

"We should all be Blight Scouts to report infections and send samples to Fight Against Blight. It is the only way we know what is going on, and the results when reported promptly, can help you manage the populations more effectively."

His tips for late blight control included good hygiene to reduce inoculum sources, following an effective anti-resistance strategy, alternating different modes of activity, avoiding the use of single actives, maintaining a maximum of seven-day intervals, reducing intervals once blight is active, using a mixture of curative and contact actives, ensuring the sprayer is set up to avoid misses.

2024 PCN trials were undertaken by Hutchinsons with the aim of building better understanding of how to get the best results from growing DeCyst-Prickly (Solanum sisymbriifolium) and DeCyst Broadleaf (Solanum scabrum) as cover/trap crops.

"However, we were not able to get it to grow very well and had to destroy it early because it was outcompeted by weeds," said Darryl. "This was a good reminder that a catch crop is a crop and needs to be treated as such. Creating good seedbeds, drilling at the right seed rate at the right depth, with about 70kg/ha of N, and effective weed control are all key."

"Aclonifen has just been approved under an EAMU so will be very useful going forward. However, in 2023 one of our growers trialled the DeCyst Broadleaf and got a very tall, lush crop, resulting in a massive reduction of PCN in that particular field."

The results from the storage appraisal trials will be presented on May 21st at the SPoT Store open event at Fleet Lodge Farm, Holbeach.

"There is a widely-held belief that cultivation will get rid of wireworms and although inversion cultivation when they are active in the upper profile can reduce a population, it will not get rid of them."

Martyn Cox, Agronomist



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College highlights how four new recruits are faring in their new roles during Scottish Apprenticeship Week.

RURAL college has highlighted the important role apprentices will play in the future of the British potato industry by showing how four apprentices have been forging a career in food production with Albert Bartlett.

Scotland's Rural College (SRUC) used the recent Scottish Apprenticeship Week to show how the four started out in January, undertaking the Modern Apprenticeship (MA) in Food and Drink Operations (Production and Processing Skills), based at the Albert Bartlett potato facility in Airdrie.

The four apprentices - Aaron Simpson, Nikki Condron, Taylor McQuade and Aaron Hawthorne are all working in Chilled - Low Care.

Taylor said: "I chose this apprenticeship as it's a great opportunity to gain a qualification while learning new skills. I have learned through this programme there are lots of opportunities for staff to progress through the business, and that Albert Bartlett value their staff."

The course challenges them to develop their skills while working full time, gaining a greater understanding of their operating environment and studying towards an industry-recognised qualification in the process.

Dr Mary Thomson, SRUC's Vice-Principal - Skills and Lifelong Learning, said: "Scottish Apprenticeship Week is dedicated to showcasing the importance of lifelong learning, and this is an excellent example of it in practice. These apprentices have taken an exciting step into a vibrant industry, and we're delighted to be able to support them along it as they work at Albert Bartlett."

Albert Bartlett, as a firm, has a history of investing in young talent and encouraging professional development among its staff.

Head of HR David Jackson said: "Apprentices play a vital role in our business, giving routes for younger staff to grow their abilities and confidence and to progress within their profession. We believe strongly in giving young workers every opportunity to develop themselves and realise their futures with us."

In September 2024, there were 38,595 Modern Apprentices training in Scotland according to Skills Development Scotland, an increase of 4.4% from the year prior.

Apprentices are a key part of the labour force, and the programmes offer access to education for those who have taken less traditional routes to learning, especially young



Aaron Simpson and Aaron Hawthorne time, gaining a greater understanding of their op

environment and studying towards an industry

Apprentices working in Chilled – Low Care believe there are many opportunities to forge a career in potato production.

people. Of all apprentices currently studying in Scotland, 52.5% are under 20.

SRUC is a key provider of Modern Apprenticeships across Scotland, especially in rural and remote locations. Learners can be distance-based, block release or day release, with the style of learning moulded to the needs of the learner.

Albert Bartlett, founded in 1948, has become known in particular for its potatoes, especially the 'Rooster' variety.









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'Know your enemies'

Andrew Goodinson offers insights on building better understanding of some of the most common pests and diseases before building effective strategies to keep on top of them.

HIS year growers need to strengthen their strategies for aphid control as the incidence of aphid-transmitted viruses such as potato leaf roll virus (PLRV) and PVY are on the increase, especially in seed crops, according to Andrew.

Once a plant is infected, the virus alters its defence mechanisms, affecting the movement of carbohydrates and sugars.

The virus challenge forms part of a general trend in yellows viruses in a potato crops.

Potato leaf roll virus can affect tuber numbers, size and quality characteristics, and therefore impact on marketability and profitability. Virus in ware crops causes between 30 -80 % yield loss, as well as affecting quality – and fry colours in processing varieties, he warns.

"PLRV vectors settle on potato plants to feed from the phloem and acquire the virus which can take up to four hours to be absorbed. The virus eventually enters the salivary gland and is transmitted through the probe into the leaf, so it takes a few days for aphids to become infective."

The main aphids involved in transmission of PLRV in potato are the colonising aphids, such as the peach potato aphid (Myzus persicae), the potato aphid (Macrosiphum euphorbiae), and the glasshouse potato aphid (Aulacorthum solani).

Andrew Goodinson, Agronomist and Potato specialist at Hutchinsons, offers advice and insights to help growers ensure the best results from their potato crops. Based in Herefordshire, Andrew has been working for Hutchinsons for 18 years and looks after 8000 ha of farmland, including farms in the Welsh borders, south Shropshire and Worcester. Most of the potato crops he looks after are destined for the crisping or processing markets.



"The main factor for Virus Y infection is location, and the only way to stop this virus is to grow in an area where there are no other potatoes."

Non-persistent viruses, such as mosaic viruses, are vectored by a wide range of non-colonising aphids.

"Transmission is very rapid – between 30 minutes and two hours – and as the virus is held in the mouth parts of the aphid, so just a short probe by the aphid can result in the plant becoming infected."

"Symptoms of these mosaic viruses can be similar, showing lack of plant vigour, smaller

leaves, leaf distortion and mottling, and cracking on the tuber surface. This is a real challenge for growers to deal with, as transmission to a potato crop is really fast and there are times when the aphid has already transmitted the virus before the insecticide kills it.

"The main factor for Virus Y infection is location, and the only way to stop this virus is to grow in an area where there are no other potatoes."

More incidence of Alternaria is being recorded in GB.



The impact of Alternaria on a field relies on a number of criteria such as varietal susceptibility, plant stress and weather conditions.









Increasing incidents

Reasons behind increasing virus incidence are complex and nuanced, but may be partly down to virus evolution, climate change, and a depleted conventional plant protection toolbox which has also been subjected to label changes.

"This implies we need to combine chemicals and cultural controls better, and ensure we are using them correctly to ensure efficacy," said Andrew, going on to add that a lot of damage is done in the early stages of crop development, but infection can happen later in the season than expected, including at desiccation. It is therefore crucial to keep on top of aphid populations until the haulm is dead.

"Virus in the leaves does not always mean virus in the tubers, so if you are growing a seed crop it is always worthwhile sending leaves for analysis during the growing season and tubers after harvest to accurately diagnose potential virus infection to manage the crop accordingly."

Monitoring aphid and ladybird populations is key for knowing when, or if, to spray. It is also important to know which aphids are in the crop, because not all of them vector virus. Use of forecasting tools and water traps help predict numbers and timing for their entry into crops.

Moreover, monitoring crops and identifying those that are infected is also key, as roguing infected plants reduces virus inoculum and therefore virus transmission.

Control measures

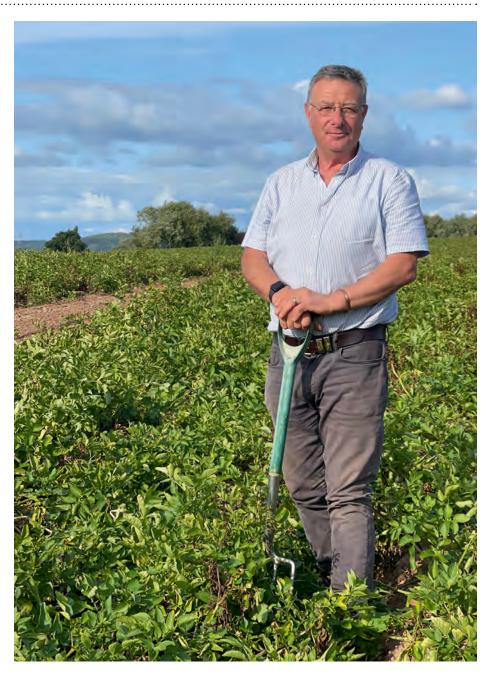
Mineral oils, which are only approved for use in seed crops, work by coating the stylet so it becomes more difficult for the aphid to transmit the virus.

"If you opt for applying mineral oil to deter aphids from landing, it is important to stop applying it before tuber initiation. Also, care needs to be taken if the young plants are under stress because if sunlight levels are high, it can scorch the leaves and affect yield," said Andrew. "If you use it, because it is non-selective, you are also preventing aphid predators and other beneficials from landing on the crop.

"IPM programmes are complicated because of the predator/aphid relationships. You have to have sufficient numbers of aphids for their predators to feed on."

Flower and grass margins provide habitat for predators, as well as reducing field run-off, but they can also provide a place for aphids to settle and thrive. He warns against treating ware crops with aphicides before the threshold of five aphids per compound leaf is reached.

While there has been widespread resistance to pyrethroids for a number of years, there is hope on the horizon with products offering two new mode of action becoming available. Flupyardifurone, (approved called Sivanto Prime) which works through both contact and ingestion,



with knockdown taking seven days has also been approved.

"We also need to look harder at genetics to find new varieties with tolerance to these viruses," said Andrew.

He goes on to note the importance of undertaking effective testing for home-saved seed for virus.

"You often just take a hundred tubers from a batch of thousands, rather than a properly representative sample, yet the results from testing are used to base a decision on whether or not to plant these potatoes. This is a huge investment on a minute amount of information.

"Planting certified seed will help reduce the risk of virus inoculum being present in the daughter tubers."

Leafhoppers

Leafhoppers are piercing and sucking insects and a relatively recent pest, says Andrew.

"At the moment they are more frequent in the east of the country, but they may be more common than we think, as they may not be correctly identified in other areas."

They insert their piercing-sucking mouthparts into the underside of potato leaves and feed on phloem and xylem, sucking out plant juices, which causes the leaves to appear mottled with 'hopper burn' scorch on top of the leaf.

Leafhopper injury reduces production and translocation of photosynthate, and may increase sugar content in the tubers.

Potato cyst nematodes (PCN)

The amount of land infested with PCN is increasing, so varietal tolerance and resistance to this pathogen is becoming critical, notes Andrew.

"PCN has recently become one of the major limitations to seed potato growing in Scotland as you are not allowed to grow seed on infected soils." →

Tolerant varieties still produce good yields despite PCN infestation, with the downside that the PCN populations continue to thrive. Resistant varieties stop multiplication of the pest, but yields can take a hit if the variety is not tolerant as well.

"This implies that ideally varieties should have both tolerance and resistance to the two species of PCN present in GB, Globodera rostochiensis and G. pallida," said Andrew.

As there are a number of popular varieties resistant to G. rostochiensis, this has selected for burgeoning populations of G. pallida.

"Breeders are well aware of the problem, and newer varieties with better PCN resistance and tolerance, are coming through the system, and trials held by Hutchinsons have identified some as looking particularly promising.

"These new varieties will widen the processors' and growers' choices, whether they are destined for processing or fresh markets."

The problem is that PCN feed and reproduce on potato roots, causing poor growth, wilting, and can result in early senescence.

"It is always advisable to wait for a couple of days to allow soil conditions to improve if the weather is unsuitable and always ensure seedbed conditions are optimal to give the crop best start and provide good conditions for root development.

"Tolerance is particularly important in years where crops are planted in less than ideal soil

conditions leading to crops not having the root system or sufficient biomass to reduce the effect of the pests."

This is partly because bigger roots are better able to scavenge for nutrients and water, to help the plant reach its maximum potential.

Andrew always recommends testing the fields for PCN levels prior to making decisions on which crop to grow, but observes that soil testing needs to become more effective, subdividing the field into small plots for testing.

"This reduces the chance of missing hotspots."

Alternaria

More incidence of Alternaria is being recorded in GB, which may be because the pathogen thrives in conditions that stress the potato plants, such as a warm dry period, followed by hot, humid weather.

"Critical times for infection are pre- and post-flowering, and as we are getting such weather patterns more frequently, there is more opportunity for timing to coincide," he notes.

Under certain weather conditions can the disease progression be mild. "This implies that ensuring sufficient plant nutrient levels and soil moisture is key at this important timing to keep stress to a minimum." This year, Hutchinsons plans to do potato trials using the biostimulant Scyon, which has given good results in cereals, peas and beans.

"You often just take a hundred tubers from a batch of thousands, rather than a properly representative sample, yet the results from testing are used to base a decision on whether or not to plant these potatoes. This is a huge investment on a minute amount of information."

PCN has recently become one of the major limitations to seed potato growing in Scotland as you are not allowed to arow seed on infected soils



Newer varieties with better PCN resistance and tolerance, are coming through the system, and trials have identified some as looking particularly promising.



The impact of Alternaria on a field relies on a number of criteria such as varietal susceptibility, plant stress and weather conditions.

"We are also getting better at identifying it; previously it was sometimes confused with ozone damage and/or magnesium deficiency."

While no varieties are either resistant or tolerant to the pathogen, there are some particularly susceptible varieties, including some old favourites such as Markies, Melody, King Edward and Vivaldi.

"We know that the pathogen grows better at higher temperatures, thus the link with climate change has been suggested. "

He goes on to explain that the name 'early blight' for Alternaria is misleading because Alternaria is a soil-borne fungal pathogen, while Phytophthora infestans (also known as late blight) is an oomycete, which, despite appearing similar, is a completely different species.

"Until now we have been able to control Alternaria with mancozeb, but most blight sprays do not control it."

Currently available control options include Belanty (Revysol), which is a new generation of triazole; Caligula (fluopyram and prothioconazole); Carial Star/Amphore Plus (difenoconazole and mandipropamid); Signum (boscalid + pyraclostrobin); Amistar (azoxystrobin); and Narita (difenoconazole).

He notes that while Azoxystrobin (which is a Qol fungicide) and Boscalid (which is a SDH), will offer some control, growers will still need to consider adopting anti-resistance strategies in the absence of mancozeb.

"We need to look at specific Alternaria sprays pre-flowering, ensuring adequate nutrition by tissue and sap testing, managing irrigation. At Hutchinsons we are doing more research on the performance of potential replacement actives as well as integrated crop management solutions." 📴









Soil moisture levels need careful checking

ITH countrywide rainfall figures once again below average in March, potato growers are being urged to assess their soil conditions and carefully weigh up their early season herbicide programs when planning the planting of potato crops this year.

Commercial Technical Manager for FMC Antonia Walker, who specialises in potatoes, says it's important to ensure that there is adequate moisture in the soil to enable the formation of good seedbeds.

"Getting those all-important ridges is crucial for creating optimum growing conditions for your potato crop."

The lack of rainfall we have experienced in recent weeks has meant that light, sandy soils have become dry, making planting conditions more challenging.

"On the lighter soils it could be a cause of concern if the dry spell continues, especially in terms of soil preparations for planting. "Getting those all-important ridges is crucial for creating optimum growing conditions for your potato crop."

With it being so dry, some growers have even mentioned the possibility of having to irrigate before planting to facilitate better ridging up processes," said Antonia.

With reduced rainfall posing one challenge, fluctuating temperatures have also been seen across the country.

"One minute you have glorious sunshine with temperatures reaching 16 degrees, but this has typically been coupled with cold frosty mornings which isn't conducive for planting as soil temperatures are still too cold."

With limited options for the control of emerged weeds in potatoes, Antonia recommends the use of Carfentrazone-ethyl products such as FMC's Shark which can be used on seed and ware crops.

"This really is a good foundation to your broad-leaved weed control programme in potatoes," she said. "Shark is particularly good at controlling polygonum species, but it can also control groundsel up to two cotyledons as well as being very strong on nettle and willowherb. Shark provides a solid base to your potato crop weed control programme and can be mixed with residual partners if required."

She said, with the bright sunny conditions we are experiencing right now, PPO inhibitors can work rapidly and she recommends application from mid-morning to midafternoon to achieve optimum results.





An Incy Wincy solution to pests?

New research identifies potential resistance tool in mite's saliva.

ESEARCHERS have identified two new proteins in spider mite saliva that influence plant defense responses and could be used as natural pest control solutions within potato crops.

Overuse of chemical pesticides has driven resistance in agricultural pests, including the adaptable two-spotted spider mite (Tetranychus urticae), which can damage potato crops in the UK, causing reduced yields, especially in hot, dry conditions.

Unlike many other pests, they rapidly develop resistance to chemical pesticides, making control efforts increasingly challenging. Researchers from Japan have discovered novel elicitor proteins, Tet3 and Tet4, in mite saliva that could enhance sustainable pest control. They found that these proteins play a crucial role in modulating plant defence responses by acting as key players in the complex interactions between parasite and host, paving the way for new mite countermeasures.

The microscopic arachnids infest a wide range of crops and can reproduce extremely quickly. Mite damage in potatoes is a minute stippling of the leaves and sometimes a bronzing. Mites reproduce rapidly and can build up to unmanageable populations in just a few days under the right conditions.

With pesticide resistance on the rise, growers worldwide are urgently seeking alternative, sustainable pest control strategies.

A research team led by Professor Gen-ichiro Arimura from the Department of Biological Science and Technology, Faculty of Advanced Engineering, Tokyo University of Science, Japan, closely examined the fine molecular interplay that occurs between T. urticae mites and their host plants. The team focused on specific substances called elicitors, secreted by T. urticae, and examined their biological effects on various crops.

"An elicitor is a molecule that plants or pests possess that can enhance the defense response of plants," Gen-ichiro said. "In our previous research, we identified two tetranins, labeled Tet1 and Tet2, as elicitors in the salivary glands of two-spotted spider mites. These substances induce defence responses in the common bean and other commercially important crops."

The research team investigated the effects of an additional 18 salivary gland proteins on the resistance of common bean leaves to T. urticae. According to this initial screening, they identified two new tetranins—Tet3 and Tet4—that appear to reduce the reproduction of spider mites on the plants.

After a series of experiments involving genetic engineering and advanced molecular and biochemical methods, the team uncovered the roles of Tet3 and Tet4 in the complex interactions between T. urticae and its host plants. Interestingly, they found that the expression of Tet3 and Tet4 varies greatly depending on which plant the mites fed on. Mites feeding on common beans, their preferred host, had significantly higher levels of Tet3 and Tet4 expression than those on cucumbers, a less preferred option.

Notably, plants exposed to mites with higher expression of Tet3 and Tet4 exhibited stronger defence responses, including



increased calcium-ion influx, higher generation of reactive oxygen species, and elevated expression of a defensive gene named PR1. The individual application of Tet3 and Tet4 to plants had different effects on plant defence responses, highlighting the specificity of each elicitor's role. "Taken together, our findings show that these tetranins respond to variable host cues that may optimise herbivore fitness by altering the anti-mite response of the host plant," the scientist said.

The implications of these findings are twofold. First, understanding the molecular mechanisms that underlie interactions between organisms leads to a better understanding of evolution, ecosystems, and biodiversity. Elicitors such as tetranins act as crucial links in these complex systems, making their detailed study essential for uncovering broader biological insights.

From an agricultural perspective, tetranins and similar elicitors offer potential for crop improvement, as insights into the elicitorsensing system can aid in breeding more sensitive and resilient crops.













Partners sought for second phase of research project



Enigma Collaborative Projects Director at Fera Science, Adam Bedford, said the second phase of wireworm research is focused on understanding wireworm at a local level.



Dr Larissa Collins is Lead Scientist on the Eniama I project.

UNDING partners are being sought to join a collaborative research project into wireworm.
Findings from Fera Science's research project, Enigma I – Wireworm IPM,

research project, Enigma I – Wireworm IPM, are now driving a second crucial phase of the collaborative research.

As climate change creates more hospitable conditions for wireworm, agri-food organisations with a commercial interest in protecting affected potato crops are invited to join the next stage of the project as cofunding partners.

Enigma Collaborative Projects Director at Fera Science, Adam Bedford, said new partners will join multinational businesses already committed to the second phase of industry research.

"Building on three years of partner-led R&D, new participants will have exclusive access to our Enigma I findings so far, which have filled longstanding gaps in knowledge on wireworm lifecycles and damage patterns, and helped model the risk the pest poses in future," Adam said.

"Our second phase of wireworm research is focused on understanding wireworm at a local level, equipping partners with tailored guidance on sustainable wireworm control to help minimise crop losses."

With support from Fera's scientists, each project partner will obtain a bespoke risk assessment based on crop type, rotation, location and other risk factors, alongside a suite of recommendations to help reduce wireworm populations.

Dr Larissa Collins, Lead Scientist on the Enigma I project and Entomology Programme Manager at Fera, said: "Leveraging key outcomes of our wireworm research so far, we'll be working on producing a replicable model that partners can use to help identify the potential wireworm risk and tailor control methods across different growing sites, as part of an integrated pest management strategy.

"The results of this project come at a crucial time for the industry with reports of the pest continuing to increase across the country."

Larissa said the upcoming research will include further analysis of cover cropping and other non-chemical control methods for the pest – such as beneficial predator insects - shaped by the needs of growers involved in Enigma I from the start.

"As Enigma I evolves, industry partners will continue to play a pivotal role in steering the project's direction - whatever we test has to be practical for use in the field," said Larissa.

Adam stressed that partners will gain actionable insights through every step of the R&D project.

"Partners will be able to take away practical solutions that are immediately applicable to their businesses and, as co-funders, have genuine influence over the project's outcomes," he said.

To register interest in joining the next phase of the research project, visit **www.fera.co.uk/our-science/enigma-research-model**.









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Wireworm spread hits tuber surface damage

EASONAL updates on wireworm infestation rates, current control methods and a potential new player in the armoury, were recently shared at a Potato Power meeting held by Syngenta.

Syngenta Potato Technical Manager Andy Cunningham said damage is an increasing risk in potato crops across the country, including eastern counties and up into the Scottish borders.

Higher populations of wireworm have been associated with increases in green cover throughout the rotation, increasing organic matter and soil moisture retention, reduced soil cultivations in min-till cereal establishment and less use of insecticidal seed treatments in arable crops, those who attended Syngenta's recent Potato Power meeting were told.

Andy highlighted that all these risk factors for wireworm damage in potatoes are beneficial for the arable rotation, which makes for challenging IPM strategies through the rotation. He urged growers and agronomists should now be routinely risk assessing for click beetle and wireworm populations on fields in advance of potato cropping.

"Being aware of the problem is key for developing an effective control strategy to target treatments effectively and to minimise damage," he said.

Monitoring techniques can use pheromone traps, with lures specifically for the three primary Agrostis (click beetle) species, or using bait traps of seed balls with 50:50 wheat and maize buried in the soil when conditions warm up, where wireworm are attracted to C02 produced as the seeds germinate.

"The pheromone traps are highly selective and give a very good indication of click beetle presence across the area, with capture thresholds as a guide to suggested actions. Bait traps are more specific to the field, but if



Syngenta Potato Technical Manager Andy Cunningham said damage is an increasing risk in potato crops across the country

you do find any wireworm then it accurately indicates potato crops will be likely subjected to attack," said Andy.

With the historic loss of Vydate and Mocap for wireworm control, Nemathorin is the only nematicide available for growers to reduce the damage caused, he told those present, adding: "Trials have shown results can be very good, and equal to the nematicides previously used for the purpose. However, when wireworm is the only target soil pest, the Nemathorin application rate is just 15 kg/ha – half the rate used for the control of PCN or for targeting FLN.

"The application technique is imperative to avoid mixing in too much soil and over diluting the treatment. It needs to be accurately applied and evenly incorporated into the top 15-20 cm of the soil profile only.

"For most growers, that means applying as a specific pass on a bed tiller directly in front of the potato planter. Nemathorin is such an important and significant investment in the potato growing programme that it makes economic and agronomic sense to get the best performance with accurate application."

Andy said new developments could offer a better long-term solution to the growing issue of wireworm. Syngenta trials with a new research product, based on the active ingredient tefluthrin, has shown excellent results, he said. The product formulation gives improved vapour activity in the soil profile around the bait points.

"Application trials have looked at in-furrow treatments to achieve protection around the growing tubers, but for growers who may not have the required applicators overall incorporation has also been successful in the research," he adds. Results have now been submitted for the product's UK registration for the control of wireworm in potatoes and maize.

Top Tips for Nemathorin application

- Service & calibrate applicators before the season
- Operators should have PA4 or PA4G qualification
- Take the online course on the Nematicide Stewardship Programme website
- Apply accurately and incorporate to a depth of 15-20cm in one pass
- $\bullet \ Plant \ immediately \ after \ application$
- Follow best practice NSP Guidelines



The continual creep

Historically associated with grassland rotations in the south and west, changing farming practices and climatic conditions has seen a continuous creep of the soil-borne pest over recent seasons.

Damage from wireworm boring into tubers can result in high levels of crop downgrade, as well as creating an entry point for tuber rots and disease pathogens. Any historic evidence of infestation indicates presence of adult click beetle species in the area - and the ongoing threat of its larval stage, wireworm.



Aphid-borne viruses continue to challenge seed potato production in Great Britain and vigilance, combined with integrated approaches and innovative strategies, are required to combat the problem.

ESPITE a fall in levels found in 2024 seed potato crop inspections in a major British seed growing region, transmission of aphid-borne virus diseases remains a major industry challenge.

To maintain the downward trend this year, seed growers across the country are advised to keep a close eye on national and local aphid monitoring services and be ready to commence control programmes as soon as vectors start to move.

Planting progress

With ware crops in the ground by the third week of March in the traditionally-early areas of Ayrshire, and pockets of Morayshire, Fife and East Lothian, most seed growers made a start to planting in the first week of April, according to SAC Consulting Senior Potato Consultant Gavin Prentice.

According to the aphid flight forecasts published by SASA (Science and Advice for Scottish Agriculture) and Rothamsted Research, the first aphids are predicted to arrive in Scotland on or around May 29th, which is about two weeks earlier than average.

In England, first flights are predicted to be almost two weeks later than average, on or around May 15th.



"Predictions of early aphid flights in Scotland are a concern, but a favourable spring means that crops should be in the ground early in good time, and many could emerge before the first problem aphid flights occur," Gavin said.

With the highest risk of virus transmission occurring between crop emergence and stable canopy, growers need to be on the ball with their protection programmes, he adds.

Major challenge

Levels of the persistently-transmitted virus potato leaf roll virus (PLRV) have increased in Scotland in recent seasons, while non-



persistently transmitted virus potato virus Y (PVY) and its variants are still an issue across potato production regions.

PVY currently poses the main threat in English seed potato producing areas in Yorkshire and East Anglia.

After two seasons of increase, Scottish Seed Potato Classification Scheme (SPCS) results for 2024 show a decrease in the percentage of crops downgraded or failed because of the presence of PVY or PLRV at inspection. This points to a potentially reduced virus burden this season.

"In 2024, 8.4% of Scottish seed crops were downgraded for virus and 0.8% failed; the previous year 15.4% were downgraded, and 1.8% failed. →







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Ladybirds can be beneficial in controlling aphid populations, which are vectors for potato viruses like Potato Virus Y (PVY).

"That's essentially half the amount of virus physically found during inspections. It's still much higher than historical levels though, so despite the trend going in the right direction, there is much more that needs to be done," Gavin said.

IPM approach

A rigorous integrated pest management (IPM) approach, outlined in the Scottish Aphid Borne Virus Working Group (SABVWG) 'Six Steps to ensure effective virus management in potato crops' document is crucial for the effective management of aphid vectored viruses.

The guidelines were updated last month and advice on removing virus-infected plants through a range of measures, including early rogueing is amongst the recommendations.

This is an effective disease management strategy if infected material can be removed before aphid vectors are present in significant numbers, but there are limitations – symptoms of within-season (primary) transmission are often not seen.

A new asymptomatic strain of PLRV, recently identified by James Hutton Institute (JHI) virologist Dr Eugene Ryabov, may potentially have contributed to the rise in virus levels seen in recent seasons, says Gavin.

"That said, researchers at JHI are investigating if there have been changes in PLRV, as so far we know very little about its variants in Great Britain," he said.

The guidelines also advise growers to "know the enemy" and act on monitoring information from the nationwide suction trap network, alongside local yellow water trap data, to anticipate aphid flights and keep track of active aphid species.

Services such as SASA's website and SAC Consulting's weekly in-season pest and disease alert can also help to keep members up to date in terms of insecticide management and aphid risk, adds Gavin.

Insecticide programme

Use of a targeted spray programme is advised as part of an IPM strategy - using plant protection products when target aphid species are flying and, importantly, covering the full growing season.

"This is something that we advise growers to adhere to, because while the risk of virus transmission is often very high at the start of the season, it can remain high come desiccation, depending on aphid numbers and species present, especially post-desiccation if any regrowth is seen.

"To target that threat with an insecticide programme, the two key translaminar insecticides we have in our armoury – acetamiprid in InSyst and flonicamid in Teppeki – are vital to control PLRV.

"Spirotetramat in Movento is also an option, but can only be applied post flowering," says Gavin.

Certis Belchim's Technical Account Manager in Scotland, Cristina Ruiz-Alonso, said both can be applied twice in seed potatoes, and labels stipulate a minimum 21day application interval between each of the two individual product applications.

This means the two products should be alternated on 14-day intervals to meet this label requirement and, when used in a four-spray sequence, should provide crops several weeks' protection against colonising aphids.

Cristina also points out that while Teppeki active flonicamid and acetamiprid in InSyst both have a translaminar effect (they penetrate the leaf tissue and form a reservoir of active substance within that leaf), both have very distinct modes of action.

Flonicamid is a feeding inhibitor picked up as the aphid probes the leaf and acetamiprid works by both contact and ingestion.

"InSyst is ideal for use at the beginning of the insecticide programme where aphids are present in the crop, as its contact activity provides rapid knockdown soon after application. With flonicamid, aphids will stop feeding within an hour of ingesting Teppeki, halting virus transmission, but death can take up to 72 hours," Cristina said.

She adds that flonicamid is the only active substance in Insecticide Resistance Action Committee (IRAC) group 29, with acetamiprid sitting in IRAC Group 4A, so they are perfect partners for resistance management perspective, too.

Role of pyrethroids

Gavin believes sensible and targeted use of pyrethroids still have a place in the spray schedule, as they provide rapid knock-down of some aphid species.

However, there is resistance to pyrethroids in key vectors, including peach potato aphid, a highly efficient transmitter of both PLRV and PVY. Questions have also been raised about the effect of pyrethroids on aphids' natural enemies.

The peach-potato and potato aphid are the two main vectors for PVY and PLRV but there are also other vectors for PVY, including the glasshouse-potato aphid, black bean aphid, pea aphid, willow-carrot aphid, grain aphid and bird cherry-oat aphid.

Gavin says if you have these other probing aphid species present in significant numbers, it may be worth using a pyrethroid, although it also depends on their propensity to carry and transmit virus.

"Last year we saw quite a few black bean aphids, but their PVY infectivity index is only 0.1. However, high numbers still create a high level of potential virus pressure within the crop. Whereas, for example, peach potato aphid, has a PVY index of 1, so it's very quick to transfer virus as it probes, so even small numbers are a concern."

Alternative approaches

IPM methods such as mulching, mesh netting, dyes and flower strips can also play a role in virus management, but more work is needed on their use and efficacy, suggests Gavin.

"IPM is essential for aphid vectored virus management. We have good evidence that measures like mulching work if they coincide with early aphid flights, but they need to be integrated with other measures such as a robust crop protection program.

"For some other measures, we need to find out how effective they are and when best to deploy them."

One additional tool that is attracting increasing interest is tuber virus indexing, which detects the presence of viral DNA from growing on tests or seed tubers using ELISA or PCR methods. Sampling is best conducted in the field, walking a W-shape pattern, collected between crop desiccation and harvest.





Historically, this type of testing was reserved for high-grade input seed stocks but is starting to be more widely used to flush disease out of the entire production system.

"Only time will tell what virus inoculum levels will be like this season, but we have had some positive feedback from clients who are tuber indexing, with results and appropriate management suggesting less inoculum will be going back into the ground.

"You have to be mindful that tuber indexing is only as good as the sample taken and works on confidence levels, we have seen an increase in testing, if virus levels remain, I would suggest it may become a more standard practice across the industry in the future," said Gavin.

A Yorkshire approach to virus

Seed Production Manager Tom England's approach to virus management is based on limiting field seed generations, a carefullytargeted insecticide programme, virus testing and a focus on good hygiene.

Overseeing the growing and procurement of around 14,000t of seed for East Yorkshirebased Humble Potatoes, Tom - also chairman of the Yorkshire Highland Seed Potato Growers Association (YHSPGA) - is wellaware of the cost of virus infection.

Part of the AKP Group, Humble Potatoes grows around 270ha of seed potatoes each year, from Bridlington down to The Humber.

Tom's meticulous approach to virus management stems from 2018, when a combination of high aphid numbers and drought resulted in high levels of infection in the following season's ware crop.

"The entire Yorkshire area was affected. It was off the back of a massive drought. The only thing that was green were potatoes, and because of the heat, they weren't growing. We got a lot of aphid pressure, and ultimately a huge virus problem," says Tom.

Tom says it was a turning point for growers in Yorkshire and changes to the way seed is grown in the area were necessary.

"We couldn't have done it without the seed houses. They've been hugely supportive and entire production models have evolved to help address the issue and make sure that what we're supplying to ware growers is reliable seed of high health status."

A key change has been a shift away from use of commercial grade Field generation 5 (Fg5) and Fg6 seed.

"Now, when we look at the generation of seed entered for inspection in Yorkshire, it's primarily Fg3 and Fg4, when previously we would be doing Fg5 and Fg6 out to ware.

"The virus loading curve really starts to head up sharply once you get past Fg5," said Tom.

Needless to say, this approach has resulted in a big increase in seed costs, adding around £1500/ha.

While PVY currently poses the main virus threat to Yorkshire seed crops, PLRV is firmly on Tom's radar now, too.

"We're looking at our management strategies in terms of trying to keep it out or, if we see it in a stock, how are we going to manage that stock to contain it, because we really don't want an increase in PLRV here in Yorkshire," he says.

With the 2018 season still very much in mind, in the intervening years Tom has developed a tried and tested insecticide programme to protect Humble Potatoes' seed crops.

"Everything gets full rate insecticides, and we use a lot of mineral oil. There are concerns about phytotoxicity and the downsides of using oil, but we've had to overcome those worries," he says.

Paraffinic mineral oil (as an adjuvant) is applied at 4L/ha from 20% crop emergence to fully emerged, tank mixed with a basic blight product, while Teppeki and InSyst are the insecticides of choice from 100% emergence.

"I haven't used a pyrethroid since 2019," Tom said. "They are not selective. They are damaging to the beneficials that I like to see in crops and there is resistance to them in the aphids I'm trying to control. Teppeki and InSyst are more selective and they're safer products to apply."

Tom employs a Teppeki-oil-InSyst-oil-Teppeki-oil-Insyst sequence from 100% emergence, with intervals managed according to product labels and aphid pressure.

Where mineral oil applications are restricted by growth stage or incompatibility with blight products, a silicon product is used.

"This serves the same purpose as the oil, functioning as a stylet cleanser and helping prevent non-persistent virus transmission," said Tom. "Insecticides will be applied right up to haulm destruction and then we will be aiming for quick and efficient haulm destruction."

Monitoring is also an important part of his integrated virus management plan and this season Certis Belchim has helped YHSPGA fund a yellow water trap network in the local area.

The aim is to fill any gaps in the existing trap network to ensure a constant supply of aphid flight data for the region. PR



Six Steps for effective management

SABVWG comprises SASA, SRUC, Scottish Agronomy, James Hutton Institute, Seed Potato Organisation, British Potato Trade Association, McCain, Agrovista and the Pre Basic Growers Association. For spring 2025, its Six Steps document has been updated as follows to make it easier to understand and implement virus and vector control measures:

- 1. Source healthy seed and isolate crops from sources of infection
- 2. Remove infected plants before virus can spread
- 3. Use resistant varieties and mitigate risks in susceptible varieties
- 4. Act on monitoring information
- 5. Use targeted spray programmes
- 6. Continue control measures until haulm is dead

Stay ahead of an evolving threat

As late blight continues to become more aggressive, and the options to control it are further reduced, how do growers build an effective control programme?

OOK at any of the Fight Against Blight (FAB) or Euroblight data and it is clear to see that the threat from late blight is constantly changing as the blight pathogen evolves and adapts to the way it is managed.

EU36 continues to dominate populations in England, particularly eastern counties, whereas in Scotland, it is EU6, although 2024 did also see a re-emergence of EU41, a genotype that has demonstrated insensitivity to active substance metalaxyl-M.

Last season also saw the UK's first confirmed cases of the EU46 genotype in Wales and Eastern Scotland. EU46 is already present in Germany, Denmark and the Netherlands and is known to have resistance to oxysterol binding protein inhibitor (OSBPI) oxathiapiprolin, as well as isolates with reduced sensitivity to mandipropamid and metalaxyl-M.

The historical reliance on blocks of chemistry in these countries may well have led to this resistance issue, and while UK growers have long taken a far more varied approach to fungicide use, the discovery of EU46 shows there is no room for complacency.

Alongside these constantly-shifting threats, the control options available are



Certis Belchim's Global Crop Manager for potatoes and beet. Ed Binaham.



Aaronomist Graham Tomalin.

who also farms in Norfolk. becoming increasingly limited as actives, such as mancozeb - available for the last time this season - are lost to regulation, and others succumb to resistance, putting greater pressure on those that remain.

Agronomists and manufacturers of disease control products are advising growers that they will need to rely more heavily than ever on an integrated approach to manage late blight this season.

Certis Belchim's Global Crop Manager for potatoes and beet, Ed Bingham, who also farms in Norfolk, said: "As an industry, we need to take a more integrated approach to tackling blight. It's not just about what sprays we use, it's about the nutrition of the crop, using resistant varieties, controlling volunteers across the



Certis Belchim's Technical Specialist, Cristina Ruiz Alonso.



Sipcam UK's Technical Manager Stewart Woodhead.

rotation, and staying one step ahead of whatever's coming along next."

The independent work by initiatives such as FAB is invaluable for understanding the disease, the genotypes present, and the control strategies required, he adds.

Sipcam UK's Technical Manager Stewart Woodhead said there's more to consider than which chemistry is under pressure from various blight strains and using the fungicide programme to combat resistance build-up should be a key focus.

He said: "A combination of understanding blight strain populations, adjusting chemistry to best support resistance management and choosing cultivars to compliment the programme are just some of the considerations that will be needed going forwards."



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ronomists urge growers to start late blight fungicide programmes early and aim to remain in a otectant situation throughout the season

Increasingly aggressive

VCS Potatoes Ltd Agronomist Graham Tomalin recognises late blight is becoming more aggressive, with the arrival of EU36 a few years ago marking a step-change from the likes of Blue 13 and Pink 6.

"What we see in the field correlates with research that shows lesion growth and sporulation capacity is greater than the strains we were previously working with. If the right conditions exist, blight is now much quicker to spread and infect new plants."

Indeed, research shows EU36 can produce more than 800,000 spores per cm2 of lesion per week in lab conditions, says Certis Belchim's Technical Specialist, Cristina Ruiz Alonso. That could be equivalent to 1.5 billion spores per ha at 1% disease severity.

That spore production over seven days is almost 20% greater than 43_A1, for example, highlighting the aggressiveness of 36_A2, she says.

"It's important to understand the behaviour of different genotypes and how aggressive they are, as this helps us manage them in the field."

Graham agrees on the importance of understanding the blight populations in a specific area, but says this testing only gives a snapshot of whatever samples are collected, so other genotypes may be present, but undetected.

Fungicide programmes

How then do growers guard against these known, and unknown threats when planning fungicide programmes?

For Graham, the key is to start early and aim to remain in a protectant situation, utilising the most suitable active ingredients for specific crop stages and risk situations throughout the season.



Alternating chemistry and modes of action is vital, and in most situations, he says growers should use two different forms of chemistry in every application to avoid placing too much pressure on any single active, either by using a co-formulation, or mixing suitable partners.

Start early

Blight protection begins from the outset, as risk will be there as soon as crops emerge if conditions are conducive.

"In my experience, those crops that have not been properly protected at the start will be the first to be at risk of blight because they haven't built up a level of protection," Ed said. "Whatever you use, you've got to have a good programme, especially on long-term storage crops were tuber blight is more of a concern. There's no sense trying to cut corners."

Graham says growers cannot be too prescriptive though.

"There are certain products you'd use at certain times, such as those with tuber blight activity, or good systemic activity during rapid canopy expansion, but nothing is fixed in stone. Any blight programme has to react to whatever infection pressure and risk develops through the season."

Growers are advised to maintain tight intervals to avoid getting into curative situations, and by mixing and matching actives, they can reduce the chances of fuelling resistance buildup, while spreading risk against the different strains of blight that may be present.

Understand active ingredients

When considering which products to use, the advice is to understand the active ingredients available and where they are best used in the programme.

Consider aspects such as the main mode of activity (systemic or translaminar protectant, for example), FRAC classification, effectiveness on tuber blight and/or foliar blight, suitable mix partners, optimum application conditions, and how and when should it be applied.

Products such as Ranman Top (cyazofamid), for example, can sometimes get "pigeon-holed" as an end of season option applied around desiccation for its tuber blight activity. However, while this is an important timing, it should also be considered from tuber initiation onwards to protect developing tubers. ->

"In the Netherlands two years ago, we were finding tuber blight in August, well before desiccation," said Ed. He says Ranman Top has proven to be a very effective option over the 25 years it has been on the market, with no known resistance, suitability for a range of timings, and excellent rain fastness.

"With mancozeb going and question marks over other active ingredients, I think it could be the backbone of many blight sprays going forward. But as a single active ingredient product, it should always be used in mix with an effective partner."

One potential mix partner is Shirlan (fluazinam), an active ingredient that is being carefully reintroduced into more programmes.

Although there is a history of fluazinam resistance in genotype EU37, a change in use of the active several years ago led to a sharp decline in resistant populations, and fluazinam is still effective against most other genotypes, including EU43 and EU46, but should not be used alone.

"I've been using fluazinam in combination with other actives for the past couple of years as it is a useful mixing partner at various points throughout the season," Graham said. "Target alternation with other actives and aim to avoid back-to-back applications though. I would, however, change this approach if EU37 was identified by FAB monitoring in the local area."

For early canopy development, Stewart said Lieto from Sipcam UK is also a great option, containing 330g/kg Cymoxanil (Group 27) and 330g/kg Zoxamide (Group 40), providing two alternate modes of action to the Quinone inside Inhibitors (QiI) e.g. Cyazofamid and Carboxylic Acid Amide (CAA). It effectively combines two Mandipropamid fungicides in one product.

"With up to six applications permissible per crop, it should be considered as a preventative application at first risk of blight infection. With flexible application rates, consider using Lieto as part of the blight programme in combination with actives from differing fungicide groups, as part of an overall resistance strategy," he said.

"These include cyanoacetamide oxime, valifenalate, fluopicolide, propamocarb and benthiavalicarb. It is also important not to forget fluazinam, cymoxanil and oxathiaptprolin to ensure a good success rate vs resistance build up, limiting the impact from the increasing resistant strains."

Watch for seed infection

Although very rare, seed-borne blight infection can be a potential risk if lower quality stocks have been bought in, so growers must be vigilant.

Seed infection is often characterised by multiple lesions on isolated plants soon after emergence, while those around them are unaffected, Graham said.

"It's quite rare to find blight in the seed, but if you did, a robust fungicide programme would be needed right from the start."

Early use of Ranman Top would be an effective option for managing any possible seed-borne infection, says Cristina.

Again, it should be used at full rate, with a suitable mix partner, such as mancozeb or cymoxanil, the latter offering more curative action if required, she notes.

Some growers may also choose to visit seed suppliers in-season to check the quality and health of crops, ensuring they will get the best possible seed, she adds.

Continental shift in blight approach

Unlike the UK, growers in many continental countries have historically taken a different approach to blight control, often involving "blocks" of key products, not always used in mix, and sometimes at reduced rates if disease pressure is lower.

Inevitably this has put a lot of pressure on fungicides and selected for resistant genotypes, such as EU43, which has CAA resistance, and was first found in Denmark. It increased rapidly to account for 75% of the population in 2022, according to Euroblight monitoring data (www.euroblight.net).

However, Ed says a change in strategy saw EU43 fall to 15% in 2024, with growers moving away from blocks of actives, alternating chemistry, and introducing fluazinam into many mixes.

EU46 has also stayed at a relatively low level with this approach, although Denmark is unique in also having a large "miscellaneous" category of blight genotypes which have not yet been defined.

The Netherlands too has traditionally relied on blocks of two, three, sometimes four applications of the same product, which has again created a "hotbed for resistance", he says.

EU43 was identified in the Netherlands in 2022 and exploded in the bad blight year of 2023. At the same time, a new strain with resistance to CAA and OSBPI chemistry also appeared.

"Last season was the first for real change though, with far greater focus on mixing and alternating available chemistry, more similar to the UK, in an attempt to combat late blight evolution without mancozeb.

"There are signs of success, as EU43 declined considerably in 2024, although EU46 remained at the same level. EU36 increased and although it does not have any resistance, it is a very aggressive form of late blight."









"A combination of understanding blight strain populations, adjusting chemistry to best support resistance management and choosing cultivars to compliment the programme are just some of the considerations that will be needed."

Stewart Woodhead, Technical Manager, Sipcam UK

"The key thing to remember is that pathogen evolution will always be one step ahead, but even without mancozeb, we can still have confidence in effective management.

"We've got the right building blocks in terms of chemistry available; growers need to keep alternating and mixing as much as possible and using active ingredients at the full effective rates."

Sensitivity testing

David Cooke from the James Hutton Institute notes that FAB lab testing of cyazofamid and several other active ingredients against isolates from the main GB genotypes last year did find slight differences in sensitivity among clones, with EU41 showing reduced sensitivity.

However, he stresses this does not mean there is resistance.

"These are only representative isolates. It doesn't imply that the whole of that clone responds in the same way. There is a very similar situation with EU46 and mandipropamid, where we have seen some differences in the sensitivity of EU46 to mandipropamid compared to other clonal lineages."

He also points out that the concentrations of actives used in the testing are far below field rates.

"Nevertheless, it is something to bear in mind. Given the solo inclusion of cyazofamid in Ranman Top, growers need to mix actives and alternate mode of action.

"Again, it hammers home the message that solo exposure, even at low doses, may result in selection within the population. During the period between sprays, concentrations on plants may drop to the point where selection can occur with some genotypes being more active in a crop than others."

Potential new blight option

UK potato growers may soon have another option for blight control, as Certis Belchim hopes to bring its new cyazofamid and valifenalate-based fungicide to the UK market.

The product is already available in three other European countries and is currently going through the UK regulatory approvals system.

"It's a mix of two active ingredients from different classifications, mixed at the full rates of each in one product, which is very unique," says Ed.

"We are seeing a benefit from mixing those two active ingredients together at full rate, especially on foliar blight."

Choice of Cultivar

CHOICE of cultivar should be considered as an additional approach to blight management and a compliment to blight fungicides rather than an option in its own right, Stewart stressed.

"Often the built-in resistance helps to delay the onset of the infection rather than eradicate the need for blight control," he said.

Examples of varieties with a late blight on foliage resistance score of 9 are second earlies Athlete or Jacky, early maincrop such as Alouette or Carousel or Maincrop such as Beyonce or Carolus.

"These varieties are useful options in high-risk blight areas and provide a level of security when conditions at application are less than ideal. They do, however, come with a level of risk for other issues so if potato cyst nematode is a problem for example, it is worth checking the wider varietal characteristics," he said.

Cultural Control

Other integrated control options include removal volunteers and hosts which can rapidly pass on infection to crops.

"Often found growing in grading dumps or in field, volunteers' removal of green bridge is vital for minimising risk," said Stewart.

"Field location (although often part of a good rotation) also needs to be considered, particularly if neighbouring allotments or gardens that can house hosts. Field margins with wooded areas can also create a microclimate that promotes oospore production leading to early development of the disease and should be considered as much as the telegraph pole in the way of the spray boom!"





Water dispersible granule - 330g/kg of Cymoxanil & 330g/kg of Zoxamide



A protectant fungicide for the control of late blight in potato

LIETO

Two active ingredients; two different FRAC groups

Unique combination of active ingredients

Curative & protective modes of action

Compliments resistance strategy

Good blight programme mix partner

Flexible application for early infection



'All credit to the contributors'



INCE joining GB Potatoes in 2023, I have been continually inspired by the sheer passion that runs through our industry. Growing potatoes is not for the faint-hearted.

Those involved take on significant risk to produce a crop that consumers rely on and demand. The cost of production, loss of crop protection products, access to water and labour, competition for land, rising rental prices, and the growing impact of climate change are just some of the major challenges facing our sector.

Although we do not have precise, up-to-date figures on potato production in Great Britain, it is clear that the total growing area has been steadily shrinking over the past decade, while the number of growers has dropped significantly.

As a result, it is becoming increasingly noticeable that the same individuals are stepping forward time and again to represent the sector in industry forums and consultations. These contributors deserve immense credit for giving their time and expertise to help guide the industry through a complex and ever-changing landscape.

A sector that stands together

At GB Potatoes, we are committed to tackling the challenges facing the industry. A great example of this is the National Virus Forum, last held in February 2025 at FERA near York, where over 40 stakeholders from across **Scott Walker**, CEO GB Potatoes, praises those who've devoted their time to the organisation's latest projects, including the National Virus Forum and PCN collaboration

the industry came together to address the growing threat of potato viruses, particularly as virus strains continue to evolve.

One of the key outcomes of this forum was a commitment by GB Potatoes to establish and lead a technical working group to put the forum's recommendations into practice.

We have pledged to secure funding to support the group. However, financing the project is just one piece of the puzzle. Finding the right people and providing the necessary coordination, facilitation, and resources is just as important and thanks to the support of our members, GB Potatoes is well-positioned to deliver on this commitment.

This kind of behind-the-scenes work is often overlooked, yet it is crucial for the long-term success and resilience of our sector.

Working together on PCN

Another major issue where collaboration is essential is Potato Cyst Nematode (PCN). In partnership with CUPGRA through the GB PCN Forum, we are tackling the serious knowledge gaps that still exist among some growers, particularly around the difference between tolerance and resistance.

To help address this, the forum has commissioned Dr Matt Back of Harper Adams University to update the PCN guides previously published by AHDB. The first draft of the updated guidance has already been received and will be made available soon. Initially, the new guides will be shared exclusively with members of GB Potatoes and CUPGRA. However, in the interest of raising awareness and supporting the entire industry, a simpler summary guide will also be made available more widely.

Without initiatives like this, PCN-related efforts would remain fragmented, with knowledge and solutions accessible only to a few. Our goal is to ensure that the whole industry can benefit through a unified, coordinated approach.

Quiet but crucial conversations

The virus and PCN initiatives are just the tip of the iceberg. GB Potatoes is also engaged in ongoing dialogue with government departments and regulatory agencies to ensure policymakers understand the challenges our sector faces. These conversations are essential to building the relationships and channels of communication that will be critical if and when a major crisis arises.

While many of these discussions cannot be shared publicly, please know they are happening behind the scenes—on your behalf.

We all hope to avoid the next major threat to our industry, but if one comes, we must be prepared to act swiftly and speak with one voice.

Join Us

To continue this work, to represent your interests, amplify your voice, and safeguard your future, we need your support. Becoming a member of GB Potatoes is simple and affordable, especially when you consider the scale of investment already required to grow a crop of potatoes. Protecting that investment means supporting the structures that protect the sector.

To get involved or to learn more, please email us at info@gb-potatoes.co.uk or visit www.gb-potatoes.co.uk. We are always keen to hear your thoughts, ideas, and suggestions.

Let us continue to build an industry that works together—one that is informed, resilient, and driven by the passion and commitment that defines British potato growing.





Impressive line-up for show and awards

New announcements made for seminar speakers, judging panel and awards host as plans hot up for key British potato industry events.

HE British Potato team has made some key announcements for this year's show and awards, which take place at Harrogate in November.

A strong mix of seminar speakers are being lined up for the two-day show which takes place at the Yorkshire Event Centre on November 19th and 20th, while the speaker and judging panel have now been announced for

the awards event which takes place on the first night of the show - this time at a new venue.

The theme of this year's show will be the potato's role on consumers' plates, both in the UK and internationally. From consumer habits to global supply chains, seminar speakers will look at how the UK fits into the wider market and what the industry can learn from other global players.

Seminar line-up

Prof David Hughes will head up the seminars with a talk entitled 'Let's Talk Food!'. An Emeritus Professor of Food Marketing at Imperial College London, David is widely known as 'Dr Food', and is a regular speaker at international conferences and seminars on global food industry issues, particularly consumer and retail trends.

Having lived and worked in Europe, North America, the Caribbean, Africa and South East Asia, he was co-owner of a hydroponic fresh herb business in Florida with the Publix grocery chain his principal customer, an agri-food management consulting business in Canada and has extensive experience as an international advisory board member with banks, agri-food companies and industry associations.

Other seminar speakers will include Cedric Porter and James Young.

Cedric regularly speaks at events across the world and is a commentator on the

potato market for outlets such as the BBC and New York Times. His talk is entitled 'International Trends'.

James joined McCain Foods in September 2021 as Vice President, Agriculture for the GB business and has been involved in the sourcing of more than 650,000t of potatoes annually from growers and suppliers across the UK.

Further speakers are expected to be announced in coming weeks.













David Hughes

Awards host

Jamie Sutherland will be the host at this year's British Potato Industry Awards, which will take place at the Majestic, Ripon Road, Harrogate.

Hailing from Liverpool, Jamie is a headline act on the comedy circuit, working for some of the country's finest clubs and being the corporate hospitality MC at Everton FC for all home games. He has supported some of the biggest names in comedy and gained a reputation as one of the rising stars of comedy with sell-out crowds. Jamie has also taken his show into Europe and as far as Sydney, Australia.



"The aim is not to pit the same kind of businesses against each other, but to look more at how they are involved in collaborations and any work that has been benefiting the potato sector overall."

Stephanie Cornwall, British Potato Review Editor

New judging panel and

The 2025 British Potato Industry Awards have been given a completely new look and entry criteria, and with this in mind, the newlyannounced judging panel incorporates people from all sectors of the British potato supply chain, with varying skill sets. There will be different judging combinations for each category to ensure a fair and informed choice of winners.

The panel includes Adrian Cunnington, Alex Godfrey, Antonia Walker, Mark Taylor, David Nelson, Jim Godfrey and Stephanie Cornwall and will be chaired by Juliet Loiselle, Publisher with Warners Group, which owns the British Potato brand.

The award categories themselves are simple to enter. All but two of the categories are open to businesses and organisations who are believed to be making stand-out contributions in different areas of potato supply. The criteria of each award is outlined on the British Potato

website and entries just have to respond to the three bullet points in turn, providing logos, photos or illustrations wherever relevant. There is no limit to how many categories are entered for the same business or organisation.

The aim is not to pit the same kind of businesses against each other, but to look more at how they are involved in collaborations and any work that has been benefiting the potato sector overall," said British Potato Review Editor Stephanie Cornwall.

"There is so much going on in the world of research, trials, new developments, engineering, marketing and more, and we've seen some great reports on these coming through over the past couple of years. This is the chance to highlight everything your company or organisation has been involved in and why you think they should be rewarded, regardless of what sector you're operating in."

The two individual categories are for those who are firmly established in the industry

and have made key contributions over the past two years, and younger candidates who are relatively new to the industry but have made a marked impression in the same time period. Any business or individual can enter someone for these awards.

"Again, we've met some keen young people who really know their stuff and have come up with some great ideas, or really proved their worth to their employers and the industry in the past 18 months. We'd like to see people put them forward for the Young Achiever's Award," said Stephanie.

"Similarly, the British Potato Industry Award is something many in the potato industry see as the ultimate accolade - an overall service to the industry that's really come to the fore over the past couple of years. Who do you think deserves a nomination for this? We're keen to hear - anyone can make a nomination for this, so please don't be shy!"



Adrian Cunnington (storage expert)



Alex Godfrey (grower and GB Potato Chairman)



Antonia Walker (agronomist/technical specialist)



David Nelson (agronomy director - fresh potatoes)



(growing and research specialist)



(fresh potato and supply chain specialist



Stephanie Cornwall (British Potato Review Editor)



Chair Juliet Loiselle

Turning potatoes into something meaty



Paul Shapiro says the latest patent underscores the importance of forging partnerships with potato processing industries.

COMPANY that produces meat alternatives from potatoes has received its sixth US patent.

The US patent is the sixth one issued to The Better Meat Co (BMC) and covers the process of using species within filamentous fungi - the Neurospora genus and Aspergillus genus - grown in a potato-based liquid medium to create a high-protein, fiberrich biomass.

US company receives sixth patent and hopes to bring its work to the UK and Europe.

The resulting ingredient, known as Rhiza mycoprotein, can be dried, sized, and hydrated into food products or blended with plant or animal ingredients to create more sustainable protein products. The patent also covers downstream applications such as shaping into nuggets, patties, or sausages, and combining with natural flavours to mimic chicken, beef, or pork.

The company recently announced its largestyet letter of intent (LOI) for mycoprotein which is produced on a commercial scale at its contract manufacturing facility based in West Sacramento, California.

BMC has pioneered methods of fungi biomass fermentation based not only on purified sugars, but also methods relying on agricultural sidestreams as the sole carbon source, including from the potato processing industry.

The company's CEO Paul Shapiro said the new patent strengthens BMC's position in fermentation technology and underscores the importance of its partnership with potato processing industry leaders.

"The Better Meat Co is an innovation factory that continues generating major tech advancements that will help feed humanity with a much lighter footprint," he said. "Turning potatoes into meat may seem like science fiction, but this patent shows it's science fact and that our tech can scale to help solve some of the world's most pressing food security challenges."

Paul added: "Similarly to how a cow converts corn into bovine protein, our microbes can convert potatoes into mycoprotein. The difference is that you have to feed a cow for two years prior to getting a steak, whereas we harvest our mycoprotein less than one single day after our fermenter is inoculated."

While being based in the US, the company has customers in Asia and Latin America and is looking to work with potato processors in the UK and Europe in the future. It uses different varieties of potato for its work, all sourced locally.

TIME Magazine recently named the company as one of the world's top greentech companies. BMC also received novel foods regulatory approval in Singapore, following a similar United States GRAS regulatory approval for BMC's mycoprotein from both the US FDA and USDA.

In addition to its meat-like texture, the company states that Rhiza" mycoprotein has more protein than eggs, more iron and zinc than beef, more fibre than oats, and more potassium than bananas. Unlike animal-based meat, Rhiza" mycoprotein has no cholesterol, and virtually no saturated fat.

"Beef" bites made from

Rhiza mycoprotein





Production plant to follow successful five-year harvest for molecular company



OLECULAR growing pioneer PoLoPo has announced final plans for a pilot-scale production plant to process its transgenic high-protein potatoes and manufacture its protein powders following a five-ton successful harvest of protein-rich potatoes.

PoLoPo is the first company in the world to grow such a crop at scale. As a B2B company, its works with regional potato growers and processors in different countries, utilises traditional processing facilities, and collaborates with consumer packaged goods (CPG) manufacturers to create and produce food products with its protein.

The facility, which will be based in Israel, is estimated to cost less than \$1 million to

fully equip and will include machinery for potato cleaning and crushing, as well as functional protein purification and spraydrying machines. Because these proteins can be extracted and dried on standard food processing equipment in use worldwide, PoLoPo is able to keep facility costs low.

The same plans can be used as-is or slightly adapted for future plants in other regions.

The project was designed with the help of UK company NIRAS, an engineering consultancy specialising in infrastructure, green energy, and sustainable development including protein and agriculture industries. CSM Ingredients, which has a UK base in the Wirral as well as most of Europe and further afield, is working alongside the PoloPo on application developments and other aspects.

NIRAS Project Manager Tom Britton said: "PoLoPo's pilot facility design strikes the right balance between cost efficiency and functionality, ensuring a scalable and capital-conscious approach. Additionally, the facility's design and process take into account industrial machinery requirements, allowing for future growth and seamless scale-up."

PoLoPo CEO Maya Sapir-Mir said now the company has the design plans for its first facility, construction can begin on the production plant, with plans being ahead of schedule.

PoLoPo uses proprietary metabolic engineering techniques to turn potato plants into micro-biofactories. Potato plants manufacture and store the target proteins in the tuber. Tubers are harvested when they reach sufficient size, then their proteins are extracted and dried into a functional protein powder that can integrate seamlessly into current food processing lines and formulations.

PoLoPo is a molecular farming pioneer producing proteins directly in common crops, beginning with egg protein (ovalbumin) grown in potatoes. The biotechnology startup was founded in 2022 by scientists with a deep understanding of plant genetics and protein expression. PoLoPo has won multiple innovation awards and has raised \$2.3 million from leading food-tech investors including FoodLabs, Milk & Honey Ventures, CPT Capital, Siddhi Capital, Plug and Play, and Hack Capital.

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COMPLETE END OF LINE SOLUTIONS



Sunshine, tariffs and quiet restructuring

Alexander Preston discusses the new regulatory and trade environment being planted at the same time as our crops this season.



Hailing from a farming background, Alexander Preston is the founder of Preston Waldon, a Hampshire-based consultancy dedicated to agricultural public affairs and reputation management that partners with organisations from the fresh produce, growing, surveying, building/development, technology and estate management sectors. Having worked with FTSE 100 companies, trade organisations, MPs, and industry leaders, he advises on policies to boost revenue and reduce costs

HE drills are finally running. Soil temperatures are rising. After weeks of delays, a burst of glorious sunshine, stretching across March and April has brought a welcome window of action.

Across the country, from Lincolnshire to Fife, the potato season is off the starting blocks, and not a moment too soon, but as boots press into warmed earth and the rhythm of planting picks up, it's worth asking: What else is being sown this season?

Because, while growers are focused on seed depth and spacing, policymakers are busy planting something else entirely -a new regulatory and trade environment that could reshape the way our sector works long after this year's harvest is in cold store.

In early April, the US introduced a 10% blanket tariff on UK imports. It wasn't sector-specific, and potatoes weren't explicitly named, but the message was unmistakable. British exporters are already facing tighter margins, and not just on raw product. From packaging costs to shipping, every link in the chain is under fresh pressure. The effect is subtle, but spreading. Processing contracts are tightening. Input suppliers are hedging. And for export-driven agribusinesses, a price disadvantage is already starting to bite.

Closer to home, DEFRA is accelerating its own recalibration. Delinked payments are being slashed, capital grants are being positioned as incentives for tech investment, and whispers of carbon scoring becoming a prerequisite for supply contracts are growing louder. In closed-door industry briefings, we've heard it first-hand: environmental metrics aren't just a tick-box—they're becoming the new currency of market access.

Add to that the independent review of DEFRA's regulatory landscape, which confirmed what many of us suspected: enforcement isn't merely about rule, it's about using regulations to drive structural change. The message from government advisors is clear: Future compliance will be proactive, not reactive. How and why you produce, not just what, will shape your eligibility for contracts, influence funding decisions, and ultimately dictate your competitive edge.

So, what can you practically do right now?

Firstly, audit your export exposure. If you depend heavily on markets outside the UK, now is the time to stress-test your supply chain against further disruption.

Secondly, consider your carbon strategy seriously. Early moves on environmental certification or baseline carbon scoring may feel premature today—but processors and retailers are already building these metrics into their future procurement criteria. Early adoption could position you ahead of the curve.

Finally, stay plugged into policy shifts and industry development. Don't rely on headlines alone as often the real story emerges quietly in the fine print. Those subtle signals aren't just noise. They're your strategic compass.

The sunshine has returned—it's tempting to lose ourselves in the rhythm of the season. But when the drills pause, take a moment to scan beyond the horizon.

This time, it won't be the weather that catches us off guard. It'll be what we weren't looking for.







'Review health and safety before harvest'

OTATO growing businesses are being prompted to review their farm's health and safety before this year's harvest, especially if they plan to hire temporary workers, including seasonal contractors or trainees who may be unfamiliar with the farm and local area.

CXCS, a company specialising in agricultural compliance, alongside health and safety, said in a recent bulletin that it's advisable to carry out risk assessments and formulate action plans over the next few months in advance of harvest, while making sure businesses are familiar with the most up-to-date legislation.

"Effective health and safety management is essential for identifying risks on your farm and implementing measures to control or reduce them. A little time spent now could make all the difference in keeping you, your employees, and visitors safe," the company states in its latest advisory.

SFI applications closed

EFRA has announced that it has now stopped accepting new applications for the Sustainable Farming Incentive (SFI) scheme. Details of a revised SFI scheme will be announced in summer 2025, with a budget to be confirmed in the Spending Review. Defra has said it will continue to

engage with stakeholders while the scheme is reviewed to ensure the process is transparent.

Potato growers who already have an SFI agreement will continue to receive payments as normal under the terms of their agreement, while those who submitted an SFI application but have not yet received an offer, will still be offered an agreement, provided their application is eligible.

Growers with an SFI Pilot agreement will be able to apply when their pilot agreement ends.

Help tool launched

NEW subscription platform offering insights to help agri-businesses has been launched. Available as an app, inbox bulletin or online tool, Agrilook will give fortnightly updates aimed at keeping potato growers and suppliers up to date with policy, market, funding and environmental changes, and helping them to

The tool has been launched by Preston Waldon, an agri-business consultancy rooted in a fourth-generation farming family, whose Co-Founding Partner Alexander Preston writes the regular Legislation and Resources column for British Potato Review.

Subscriptions cost £10 per month, £50 for six months or £95 annually.





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Consumer awareness campaign



MCCAIN Foods has launched a campaign to improve understanding and awareness of regenerative agriculture, and the important role it plays in combating the effects of climate change on the future of food, amongst American consumers.

Its activities include setting up a "Fries of the Future" pop-up stand next to Chelsea Market in Manhatton where it will be dishing out free "regen fries" partnering with sustainability champion Rachel Brosnahan, creating a new web-based AR game that turns users into growers, teaching them how soil health may impact potato production while competing for prizes, and launching its first ever "Regen Fries" in selected retail outlets.

Forecasting platform being developed



AN artificial intelligence-based forecasting platform is being developed for potato production in Michigan, USA.

The new platform is one of four new research and outreach projects to receive a share of \$5.1 million funding from the Agricultural Climate Resiliency Program, a partnership among Michigan State University, the Michigan Plant Coalition, and the Michigan Department of Agriculture and Rural Development (MDARD).

MSU scientists are creating an artificial intelligence-based forecasting platform for potatoes, a major agricultural contributor in the southern portion of Michigan's Lower Peninsula, alongside corn, soybeans and wheat. The goal is to provide high-quality information to growers and land managers to formulate solutions-oriented strategies to increase resiliency.

The principal investigator is Jiquan Chen, a professor in the Department of Geography, Environment and Spatial Sciences.

The program, which began in 2024 and is administered by MSU AgBioResearch and MSU Extension, was created to address long-term climate and water-related challenges in plant agriculture.

Each project is funded for three years at \$1.275 million with research being carried out into efficient use of water, protection of water resources, plant and soil health, and carbon sequestration.

MDARD Director Tim Boring said the initiatives will provide practical solutions to help growers adapt now and in the future.

Artist focuses on crisps in exhibition

SWEDISH artist Dennis Duolee focussed on the social aspects of crisps and chips in a recent exhibition in Stockholm.

The artist said he wanted his work to explore how crisps unite

people and create conversations, according to a report in Snacks.

His exhibition included a tower of Vicknings crisps, produced by Swedish manufacturer Estrella, as well as a social experiment in which the artist explored how chips act as a catalyst for meetings and conversations, as people gather around to taste them.



First of Dutch potato grading machines installed in North America

A CANADIAN seed potato producer has invested in a new Dutch sorting machine which is the first of its kind in North America.

Creek Side Potatoes in central Alberta is a family business which grows several varieties across hundreds of hectares and supplies throughout Canada and the United States.

It recently invested in an Optica Q machine produced by Tolsma-Grisnich.

The Mooij family which runs the business required a machine that could handle high capacities with gentle handling. It also required a soft drop to prevent potato damage and a double discharge system that enabled flexible sorting in a single pass.

The optical sorter has been integrated into the existing sorting line and specialists are able to log into the machine remotely from the Netherlands or from new local office in Alberta.

While four or five manual handlers were previously required for sorting operations, only one person at the picking table is now required. The machine sorts up to 20 tons of seed potatoes per hour.

The machine stays current with the latest software updates from Optica Q units worldwide and enables separation of undersized potatoes from clods, stones, and other irregular items.

Increase in imports



KYRGYZSTAN has increased its potato imports this year, primarily from neighboring countries.

According to the General Administration of Customs of China, the volume of potatoes imported into the central Asia country increased from 4,800 tonnes in January to more than 8,000 tonnes in February, and more than 21,000 tonnes in March. The total value of these imports reached \$30 million.

The rise in imports came amid increasing domestic potato prices, which, according to the National Statistics Committee, rose by one-third from January to mid-April, up to 62 KGS/kg.

Crisp flavours made permanent



SWEDISH potato snack producer Estrella has launched two new flavours to its 2025 product line.

The Dill Screws flavour, along with West Coast Chips and Sea Salt, have become permanent fixtures after limited-time appearances last year. Dill Screws are made from potatoes that have been baked, dried and deep-fried and are vegan friendly. The West Coast flavour is also vegan-friendly.







Russia potato prices could be regulated by state



New outlet for Peru's over-supply



STATE regulation of potato prices could be introduced in Russia following a sharp rise in prices.

Retail prices increased by 92% last year, according to the Central Bank and Rosstat, the governmental statistics agency in Russia.

As a result, Vice Speaker of the State Duma, Boris Chernyshov, has addressed the matter with Maxim Reshetnikov, head of the Ministry of Economic Development.

Government decree allows for the imposition of marginal prices on certain essential foodstuffs for up to 90 days if their cost increases by 10% or more over 60 consecutive days, considering seasonal factors.

The monitoring potato price dynamics, accounting for potential seasonal fluctuations, and initiating a temporary price restriction if the increase surpasses established parameters has now been recommended by the Vice Speaker.

Official data from Rosstat shows a 23.9% increase in the price of potatoes since the year's start, posing a threat to food security, particularly for low-income citizens.

Spanish potato shortage widens price gap



A POTATO shortage is being seen in Spain's domestic market, with the shortfall being made up with foreign imports.

The domestic potato market in Spain is currently facing a shortage, impacting consumers as foreign produce fills the shelves. The disparity between supermarket prices and expected crop values is increasing, as highlighted by the latest Food Price Index at Origin and Destination (IPOD) from The Committee of Agriculture (COAG). The index reports an origin price of €0.39 per kilo and a destination price of €1.99 per kilo. This price gap was most pronounced in January, with figures of €0.33 and €2.02 per kilo, respectively.

Price multiplication from farm to store was over six times in January, although it eased up slightly in February. In May 2013, the origin price matched February 2025's \leq 0.39 per kilo, but the destination price has doubled from \leq 0.99 to \leq 1.99 per kilo over 12 years.

With domestic potatoes set to be harvested in about ten days, the market is currently dominated by imports from France, Egypt, and Israel.

Ministry of Agriculture data indicates a 4.5% increase in extra-early potato production compared to 2024, potentially affecting prices. Duque highlights the need for awareness about production costs and the price increases that often bypass the primary sector.

Sharp increase in exports



GEORGIA'S potato exports increased sharply in the first quarter of 2025, according to the Ministry of Environmental Protection and Agriculture.

Potato exports grew 38 times compared to the same period last year, reaching \$13.5 million, up from just \$400,000. The main destinations were Russia and Azerbaijan.

PERU has signed an agreement to secure fresh potato access to the Brazilian market.

The country's Minister of Agricultural Development and Irrigation, Ángel Manero, signed the agreement with deputy ministers of the Brazilian government, opening up its opportunity to target more than 200 million consumers and providing an opportunity to divert future potato surpluses to other markets, thereby avoiding a price drop for Peruvian farmers.

The head of Midagri also met with Carlos Fávaro, Brazil's Minister of Agriculture, Livestock, and Supply, and asked for his support in advancing access to strawberries and raspberries.

During the meeting, Minister Manero spoke about the country's irrigation projects, which will boost the agricultural sector and increase the agricultural frontier by more than one million hectares.

Minister Fávaro referred to the port of Chancay's potential as an exit route for Brazilian products to Asia. Minister Manero said it would be in Peru's interest for Brazilian companies to establish themselves in the special economic zone planned there.

Minister Manero took the opportunity to invite his Brazilian counterpart to schedule a visit to the Port of Chancay to appreciate its facilities.

Minister Ángel Manero also visited Brazil within the framework of the Latin American Association for the Development of Agricultural Insurance's XVIII International Congress, held in Brasilia earlier, recently.

\$80 million investment in plant



FOOD giant PepsiCo has increased the investment in its Saudi Arabia potato plant ito \$80 million.

Since 2017, PepsiCo has invested \$2.4 billion in Saudi Arabia's agricultural and food industries and expanded to 86 operational sites.

All of the potatoes used are locally sourced, including those at the production facility in Dammam.

Price drops thanks to over supply and more



OVER-SUPPLY and storage quality have been blamed for a current price drop for Ukrainian potatoes.

Producers in the country are adjusting prices according to project analysts information and analytics platform EastFruit with growers being keen to sell remaining stocks quickly as storage quality declines.

EastFruit's daily monitoring shows wholesale prices in Ukraine have dropped to 13–23 UAH/kg (\$0.31–0.56/kg), marking a 14% decrease compared to the previous week. The price decline is attributed to increased supply from both domestic and imported sources. Notably, Polish potatoes from last year's harvest are available in the market, priced similarly to local products.

Despite the current situation, Ukrainian potatoes remain, on average, 28% pricier than in early April 2024. With ample supply, further price reductions have not been ruled out by local growers.



Plentiful production this season



POTATO production in Egypt has been prolific this season.

While demand was slow in January, market pick-up after March greatly improved accroding to Export Manager of the Plantix Group, Mohammed Hassan.

"The start of the season was not good, especially in European markets. We noticed a slower than usual demand," he said in an interview with Fresh Plaza. "The situation changed in March with a pick-up in demand in many parts of the world. Our exports to countries like Greece and Italy are currently dynamic, as well as in African markets."

Egyptian exporters have reported that international buyers have increased their orders for Egyptian potatoes, particularly Russia, which is experiencing domestic supply problems.

This was reflected in prices. Because of the abundance of production, the season began with lower prices than last season, and improved thereafter, without exceeding the price threshold of the 2024 season, according to Hassan.

"We're still struggling to export to key markets. In Spain, for example, the volumes we manage to send are very low compared to last season due to restrictions," Hassan adds.

The Egyptian potato season typically continues until June, with exports extended until October thanks to cold storage.

Early potatoes benefit from asparagus season



THE early potato sector in Germany benefited from the start of the asparagus season, according to the country's Federal Office for Agriculture and Food (BLE).

With somewhat limited availability from both Cyprus and southern Italy, prices remained firm, with small increases also reported locally, according to the BLE.

In the storage potato sector, good quality potatoes were traded at mostly unchanged prices and supply was on par with demand.

Potato sector sees cautious recovery



SOUTH Africa's potato industry is showing signs of cautious optimism for the 2025 season, following a year marked by climate challenges, input cost pressures, and constrained export opportunities, according to the Autumn 2025 Absa AgriTrends report, which highlights key developments and expectations shaping the outlook for the sector.

Accolades for potato soap

ENACTUS-UPEI, a club focused on sustainable entrepreneurship at the University of Prince Edward Island, has developed a unique potato soap, Spuds2Suds, which has garnered significant accolades.



After extensive research and collaboration with local farmers, the team crafted a sustainable soap from wasted potatoes, enriched with hydrating oils and vitamins, according to a report in Fresh Plaza.

Their efforts earned them first place in the Canadian Tire Environmental Sustainability Challenge and second place in the Innovation and Impact Challenge at the Enactus Regionals in Halifax. The soap is available locally, with every sale contributing a bar to a local food bank. The team is set to compete nationally in Calgary.

GMO potato variety meets import criteria



THE South Korean government is revisiting the import approval process for a genetically-modified organism (GMO) potato developed in the United States.

The Rural Development Administration (RDA), led by Commissioner Kwon Jae-han, has assessed that a GMO potato variety meets environmental safety standards, removing a barrier to its import.

This decision coincides with renewed trade pressure from the USA, leading to concerns about the ease of entry for American GMO potatoes into South Korea.

Early start on new potatoes



BELGIUM supplier Agra Claessens made an early start on its new potato sales to accommodate Easter demand.

In the Moerzeke region of East Flanders, consumers were keen to see the first Moese Patatten, a recognised Flemish regional specialty, on the market.

Moese Potatoes are traditionally grown in the bend of the Scheldt River, where early potatoes, grown under foil or in greenhouses, are better protected from spring frosts and were less impacted by cold weather than varieties grown in regions on higher sandy soils, according to Stijn Windey of Agra Claessens.

Stijn said: "Had it not been for Easter, we might have waited a little longer, but they're looking very good, and we didn't want to deprive people of the delicious combination of new potatoes and asparagus on the Easter menu."

The supplier was the first in Flanders to harvest potatoes. The grower-supplier said the clay soil ives the potatoes a bit more flavour.

"Twenty years ago, we were among the first in the region to start growing early potatoes in greenhouses, but since then, early cultivation has become more common in Tholen and across Flanders. Still, we've been able to start earlier again this year compared to last season."

He said this year's quality had been good, planting had been on time and low temperatures had been minimal.











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New report: Agtech support is lacking

NEW research from Barclays has revealed that while a large proportion of potato growers plan to adopt technological innovations with the potential to improve productivity and bottom lines, they are not being provided with the support needed.

Barclays' latest report, Agritech: Supporting The Future Of Farming draws on insights from growers and agtech companies to highlight key barriers slowing the adoption of transformative technologies. Financial challenges coupled with perceived lack of government support were highlighted as the primary obstacles.

Almost half (45%) of those surveyed cited an unclear return on investment and extensive upfront costs (41%) as key financial barriers, followed by a lack of knowledge on how best to use the technologies (24%).

Against a challenging political backdrop, growers felt there was more that the government could do to support them, from providing clarity around long-term policy (71%), providing more

support and guidance on sustainable farming practices (48%), to providing overall support for and promotion of UK farms (48%).

The report also highlights the risk the UK could face in falling behind other geographies if it can't get the supporting supply chain and ecosystem aligned with one company executive in the report highlighting the difference between the UK and Europe, saying the approach in Europe was far more joined-up between growers, manufacturers and universities.

Barclays is calling on government to address these barriers and carry out three key actions to aid the development and adoption of agtech, including:

- 1. Develop and communicate a clear national strategy for the agriculture transition, clearly setting out the role agreech can play
- 2. Provide broad financial support for both agtech development and adoption, including guarantees and deploying targeted support via the National Wealth Fund and British Business Bank

3. Create a catalytic ecosystem-wide hub through the combined UK agtech centres, enabling better collaboration, as well as developing a dedicated skills programme to support the domestic talent pipeline

Barclays is renewing its Eagle Lab partnership with the University of Lincoln. Launched in 2020, the partnership is focused on supporting agricultural start-ups and entrepreneurs, providing access to facilities including a dedicated robotics lab, as well as to experts across the industry.

Abdul Qureshi, Managing Director, Business Banking, Barclays, said: "We recognise it will take a collective effort to create the right enabling environment, but if we get this right, agtech can help our growers and play a meaningful role in both protecting and driving forward one of Britain's most vital sectors. As the government develops its 25-year agriculture roadmap and national food plan, there is no better time."

Agtech is worth an estimated £13bn to the UK economy.

Instant access to weather data and crop management tools

GROWERS and agronomists can gain instant access to essential weather data and digital crop management tools on the move with a new portal created by Syngenta.

The advanced digital ag Syngenta Portal app for smartphone and tablet taps into a vast global database of weather metrics, and applies the relevant information to individual farms. The weather metrics have been specifically selected by Syngenta agronomists and application specialists for their influence on crop growth and management.

The Syngenta Portal app also integrates with the company's Partnership Plan loyalty programme, giving growers access to their account, topical recommendations, new products and valuable offers. Members can view their available rewards, including gift cards from popular retailers, 3D ninety nozzles and a wide range of Apple products.

The app is available to download for free from the App Store and Google Play.



Extending electrical service into US

A COMPANY which specialises in electrical methods of weed control and crop protection is extending its service in the US.

crop.zone, whose technology has already been widely adopted in the UK and Europe, is growing its distribution network across North America, having teamed up with Wisconsin family-owned machinery supplier Big Iron Equipment to deliver its electric alternatives for desiccation, cover crops, and weed control.

Temperature mapping tool

THE Dickson Company, a provider of environmental monitoring and validation solutions, has introduced a new temperature mapping tool, designed for temperature mapping in controlled environments such as potato stores. The mapping solution enables businesses to detect temperature variations and ensure compliance with industry standards.

Plant stress measuring tool

SWISS company Vivent Biosignals has developed a sensor technology that is able to measure biotic and abiotic stresses on potato plants through measuring the plant's own internal signalling channels.

It recently launched a new mini sensor which works with a dashboard launched last year. The company has carried out extensive work with potatoes and is pursuing further work in the field during all stages of the growing cycle, as well as within storage.





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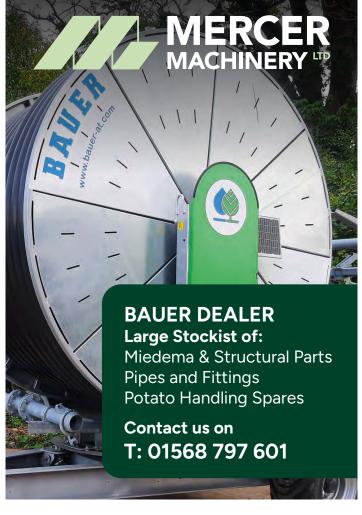


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Georgina Hargreaves looks at what makes a potato supply chain resilient and offers her advice on developing something that can withstand unpredictable changes.

UPPLY chain resilience is essentially the ability of a supply chain to recover from unexpected events and minimise the impacts on costs, customers and revenue. It encapsulates the ability to withstand disruptions and, more importantly, learn from them and assess the constant need to adapt over time.

Traditionally, supply chains sought to keep costs down and remain stable. Now though, far more is required to achieve a successful and robust supply chain. Modern supply chains need to keep up with consumers, predict and prepare for any potential peaks and troughs.



Georgina Hargreaves is a Commercial Paralegal at Beyond Corporate, a specialist practice of Beyond Law Group.







Common disruption

So why is this important for the potato Industry? Supply chain disruption is increasingly common, contributed to by unpredictable climate patterns, energy prices, labour issues, market volatility and price fluctuations as well as export and import barriers caused by political instability causing unwanted disruptions. Such disruptions place pressure on businesses throughout the supply chain.

Although technological advancements in farming can assist in increasing yields and reducing costs, the initial capital investments, as well as training and calibration time invested into such technologies, place huge financial strain on potato growers, especially those with small farms.

Disruptions can lead to price increases and delays in distribution so does your business have the contractual right to pass cost inflation on to customers? Would any prolonged delay result in a breach of contract? This is especially difficult to manage in the potato industry, where large retailers generally hold the balance of power in contract negotiations.

There are six key considerations when developing a resilient supply chain. These are contractual clauses, diversification, communication, adaptability, technology and demand.

Robust contractual clauses

Robust contractual clauses can help to protect your potatoes in the face of delays or price inflation. Such contracts should be detailed and clearly outline terms and conditions, including pricing, delivery schedules, quality standards, and dispute resolution mechanisms as a minimum, taking a more detailed look at some key provisions, we would highlight the importance of the below:

Force Majeure clauses excuse a party from performance in certain events, the scope of this can vary, including a broad variety of events, particularly extreme and unexpected weather conditions and wars.

A price variation mechanism would assist in scenarios whereby contract performance becomes more expensive, in English law if no such mechanism exists then there is no way to alter the contract price unless the parties both agree to do so. This is particularly important in the current climate, with rising energy costs creating significant additional hardship for potato farmers.

"Modern supply chains need to keep up with consumers, predict and prepare for any potential peaks and troughs."

Risk Sharing Agreements: Consider risksharing agreements with retail and wholesale partners to mitigate risks associated with adverse weather events, market fluctuations, and other unforeseen circumstances.

Termination rights and break clauses in contracts allow parties to walk away in certain circumstances, this would be useful for situations where the contract becomes unprofitable or unperformable due to delays and price increases.

Transportation and delivery should be dealt with by the contract, responsibility for delivery receipt and insurance should be clearly stipulated (or reference made to defined INCOTERMS) and should detail when risk and title pass, . Thorough storage provisions should be specified wherever possible to ensure optimum conditions and reduce spoilage of the stock.

Reliance and diversification

Diversification of supplier and supply locations, transportation, products, and customers is the second key consideration.

The use and reliance on a single supplier may lead to vulnerability. It is vital to ensure collaboratation across the entire supply chain, identifying any gaps and sourcing materials from multiple suppliers will assist in reducing dependency and minimise the impact of disruptions.

Communication and transparency

Communication and transparency throughout your supply chain and with stakeholders through broader data sharing agreements is imperative but often overlooked.

Tracking data and analytics in real-time will assist in anticipating potential disruptions and responding in a timely manner. Developing strong relationships will allow your business to make more effective responses to disruptions.

Forging these better relationships with retailers and processors can improve market access and ensure consistent demand. It can

"Supply chain resilience comes down to ensuring your business is prepared to deal with a variety of obstacles and maintain visibility and communication from farm to fork." also create access to details of best practice across the wider fresh produce market and provide solutions for developing and scaling innovation.

Adaptability

The ability to adapt a circumstances change is something that extends not just to the potato industry. A supply chain that is suitable for yesterday's economy may not be quite as suitable in a year or even a months' time. Continual assessment of how the supply chain responds to risk is essential to understand how it will deal with disruptions.

Modern technology

Modern technology can assist in increasing yields, providing trend forecasts and reducing spoilage. This digital transformation enables a proactive response to emerging challenges, such as storage conditions or shifting market dynamics. With accurate data, operations can be optimised, wastage reduced and timely deliveries can be planned maintaining the chain's efficiency and reliability. Likewise, integrating traceability mechanisms is helpful to demonstrate origin and quality, helping minimise friction in the onward supply chain.

Managing demand of products

It's necessary to consider whether anything can be done to manage increases in demand. Businesses should consider if it would be feasible to create and manage stockpiles in preparation for seasonal increases in demand. Predictive analytics can also help forecast demand, ensuring a balanced inventory.

Overall preparation

Supply chain resilience comes down to ensuring your business is prepared to deal with a variety of obstacles and maintain visibility and communication from farm to fork. More than purely defensive, supply chain resilience proactively enhances a business's ability to adapt to disruptions. Much of this can be managed through a variety of commercial and legal tools, including contracts, customer and supplier onboarding and pro-active contract management.

If you are uncertain about whether your existing contracts provide sufficient protection of your business, or require general commercial advice, please contact commercial@beyondcorporate.co.uk.

New appointments for plant health business

DE SANGOSSE LTD, a manufacturer of plant health products, has appointed two new key positions to work in its growing UK operations.

Sarah Ferrie, who has taken on the new position of Head of Marketing, has more than 25 years' experience in the agricultural industry, Sarah previously spent eight years with Interagro where she was responsible for marketing the company's range of adjuvants and biostimulants, and also held a number of technical and marketing roles with BASF.

De Sangosse (UK) Ltd has extended its UK range of molluscicides, adjuvants, plant nutrition products, seed treatments, water conditioners, pod sealants and biostimulants which provide growers with innovative approaches to protecting crops against diseases, pests and the effects of adverse weather from seed to harvest.

Stuart Sutherland, its newly-appointed Technical Business Manager, has a wealth of experience in the field of adjuvant and biostimulant technology, water and soil conditioners and pod sealants, spanning more than 26 years in agricultural crop protection.

His role within the De Sangosse team will include technical support for both UK





and international customers, new product development along with field scale trials demos. He will be predominantly based in Scotland and the north of England.

Stuart has formerly worked with Interagro (UK) Ltd. Nufarm and BASF.



Laura takes on role with

OMEX Agriculture has appointed Laura

Wood as its new business growth director.

Laura will oversee commercial strategy, identifying business growth opportunities and leading the long-term strategy for the roll-out of low-carbon products. She will also efforts, and develop key relationships with stakeholders, merchants, and customers.

Laura's career in agriculture began at Frontier, where she worked as a farm trader across the Midlands. She later transitioned to Peel Ports and most recently worked for ABP.

fertiliser company lead the western sales team and marketing

Heading up crop nutrition services

ION Gooden is the new Head of Crop Nutrition Services at Yara UK.

He is now heading up the company's retail business segment which sells its portfolio of products direct



to farm customers. As part of his role, Jon will be overseeing a team of Farm Account Managers who provide agronomic crop nutrition expertise, supporting growers to maximise yield potentials by consulting on their full nutritional needs.

OF&G interim Chief Executive

OF&G (Organic Farmers & Growers) has appointed Steve Clarkson as interim Chief Executive.

This follows the OF&G Board's mutual decision with Bill Young to part ways after his initial probationary period in the role concluded.

Steve has been a key figure within OF&G since 2002 and has held the position of Certification and Compliance Manager since 2009.

David hangs up his hat after 48-year career

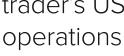
POTATO industry stalwart David Brackenbury has retired after a 48-year career.

David, a potato grading and handling machinery specialist who traded as Brackenbury Engineering Ltd retired after a successful online dispersal auction of remaining stock and fixed assets was conducted by Cheffins earlier this year.



As a Community Interest Company (CIC) OF&G must adhere to a formal recruitment process before announcing a permanent appointment to the role of chief executive.

Sean joins breeder/ trader's US





POTATO breeder and seed trader HZPC has appointed a new Business

Development Manager, Sean Davenport, to look after its activities in North America. Sean hails from a family steeped in the potato industry and has many years of experience in marketing fresh potatoes.

First female president for AEA

NOW in its 150th year, the Agricultural Engineers Association's (AEA) has a newly-elected president, Siân Pritchard.

Sian, who has been the Managing Director of Telford-based KUHN Farm Machinery since 2009, is from a farm machinery background and her family farms on the Welsh border.

She has held various machinery manufacturing roles on the continent and said she is keen to bring more young people into the industry.

Beginning her presidency on April 1st, Siân is the first female president of the AEA.







Smooth start to preparations for PotatoEurope 2025

Farm Manager: "Demonstration fields PotatoEurope 2025 planted under excellent conditions".

REPARATIONS for PotatoEurope 2025 are in full swing, with demonstration fields being planted under excellent conditions at the Open Crops of Wageningen University & Research (WUR) in Lelystad last month.

Farm Manager of this business unit, Jacob de Jong, who oversees the 25 hectares of harvesting demonstration fields said planting got off to a smooth start, in excellent weather conditions.

The mid-early potato variety Alegria has been planted on the demonstration fields. Alegria is known for its high yield, good drought resistance, and versatility. It produces oval tubers with a light-yellow flesh colour and excellent taste, making it suitable for both fresh consumption and processing into French fries.

Additionally, the variety has moderate to low susceptibility to common potato diseases, making it an attractive choice for growers. After harvest, the potatoes will be marketed through the pool of Schaap Holland from Biddinghuizen (NL).

Strong start to growing season

To ensure the quality of the potato crop, the seed potatoes have been treated with Maxim, and Amistar and liquid phosphate fertiliser have been applied in the row. The plots, consisting of marine clay with approximately 30% silt content, previously had an excellent preceding crop for the potatoes.

Last year, winter wheat was grown here, followed by yellow mustard as a green manure crop, which was ploughed under in December. The potatoes have been given a base fertilisation according to recommendations, with no animal manure applied. The planting distance within the row is 26cm.

Jacob said: "We've had a relatively dry winter and a dry spring, with frost still occurring in February. As a result, the soil now crumbles nicely, which provides a great start for the PotatoEurope fields this growing season. It's great that we can start early. This should allow us to apply desiccation in early August and achieve a good yield during the harvesting demonstrations."

During PotatoEurope 2025, which takes place on September 3rd and 4th, the potatoes will be harvested by different types of harvesting machines from AVR, Dewulf, Grimme and Ropa. Visitors will get a broad and complete view of the latest mechanisation techniques in potato cultivation.

In addition to the harvesting demonstrations, PotatoEurope 2025 offers a wide range of exhibitors showcasing the latest innovations and technologies in potato cultivation, processing, and sales.

The annual event brings together professionals from the potato sector and rotates annually among partner countries: The Netherlands, Germany, Belgium, and France. Organisers expect to welcome more than 300 Dutch and international exhibitors and more than 15,000 visitors to this year's event.





Probing into skills and profits

THE 60th National Farm Management Conference, which takes place in November, will look at how to attract and maintain skilled staff in the industry, as well as looking at new models for making farms more resilient and profitable.

With UK potato growers amongst those facing one of its most challenging periods in recent history, the conference, hosted by The Institute of Agricultural Management (IAgrM), will explore the pathways to sustainable and profitable growth in UK farming, with an expert-led focus on people, profit, and the planet.

With policy shifts, climate pressures, and economic uncertainty reshaping the agricultural landscape, organisers hope the conference will deliver practical strategies and forward-thinking insights.

The event will take place on November 6th at 1 Great George Street, Westminster, London. More details of this and other forthcoming events that may be of interest are available in our online industry calendar.

Exploring practical storage solutions

A POTATO storage day is set to take place at Fleet Lodge Farm near Holbeach, Lincolnshire on May 21st.

Organised by Potato Storage Insight Ltd and SDF Agriculture, with support from UPL and Farm Electronics, the event will be held from 9.30am to 1.30pm and will be a focused technical event with an emphasis on practical solutions to further collective knowledge and develop best practice.

The event will cover: Field and storage trials results, store remedial action, energy management developments, sprout suppression best practice, store refurbishment, storage training opportunities, CIPC residue monitoring and storage control systems.

It follows on from a similar event held for the first time last year at Winters Lane Storage complex, which attracted around 100 visitors.

Anyone interested in exhibiting at the event can get in touch with Simon Faulkner at simon.faulkner99@outlook.com or Adrian Cunnington at adrian@potatostorageinsight.com.

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Measurement & Control

A gauge to enhance your potato production process



Nordson Measurement & Control Solutions has presented the Series 9 colour gauge, which the company says is the only all-inone sensor capable of simultaneously measuring moisture, fat/oil, protein, colour, and more.

The Series 9 gauge has been a bestseller in the potato industry for several years. Installed directly on the production line, it delivers unparalleled measurement performance while maintaining simplicity and versatility in design and operation. In addition to the key constituents, the Series 9 can detect the so-called Degree of Bake, that is the change in brownness of the surface of a baked or fried product as a result of the Maillard reaction.

However, surface browning is not the only colour measurement required by the industry.

That's where the new Series 9 Colour Gauge came in.

Building on the existing flexible, future-proof platform, Nordson has expanded the capability of Series 9 gauge to create a unique process sensor capable of simultaneously measuring the colour and the key constituents of potato products.

The new Series 9 colour gauge goes beyond the Degree of Bake and can now detect the full-colour spectrum in a wide range of standard scales, including CIE (L*, a*, b*), Tristimulus (X, Y Z), RGB, CIELCH (L*, C*, h) ΔE* & ΔEcmc. Repeatable numeric colour readings, combined with other critical measurements, can be confidently used as part of a process control strategy to deliver consistent product quality every time.

The Series 9 Colour gauge already counts numerous success stories in the industrial production of various foods, namely cookies, nuts, snacks, dehydrated fruits, coffee, etc.

More information: https://www.ndc.com/food-bulkmaterials-processing/







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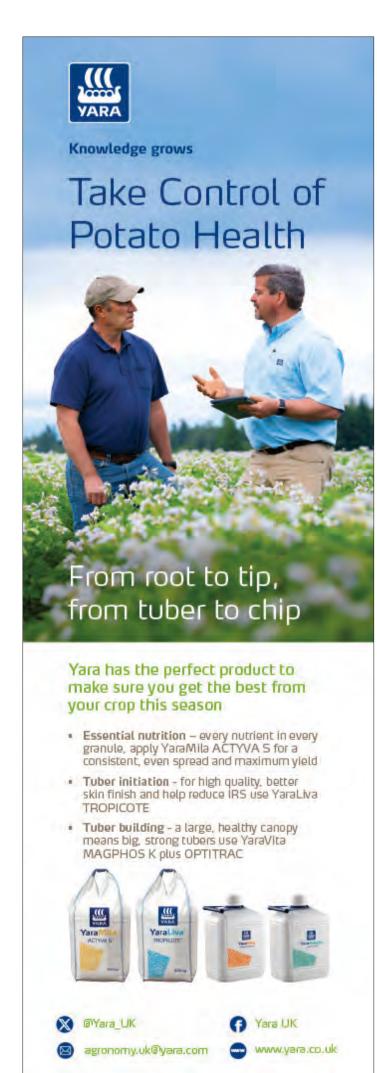
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The story of synonyms

An insatiable demand for new varieties has been generated by growers looking to cash in on high market demands and historically there has been controversy around their identity. John Marshall examines the evolution of breeding.



LDORADO championed the great potato boom at the start of the last century, when the variety bred by a former publican sold for £30 in Cupar, Fife in 1904. One single Eldorado tuber weighed four ounces.

Archibald Findlay, who bred the Eldorado variety, traded in potatoes as a sideline and was determined to breed higher-yielding varieties after hearing tales of the 1840s Irish potato famine.

Critics exposed Eldorado as being an old variety, rather than a new one.

In fact, Archibald Findlay, had used material from a previous breeder, Dundee-based William Paterson, to cross-pollinate potato flowers to develop new varieties.

It's worth taking a look at the events leading up to Archibald Findlay becoming one of Scotland's foremost breeders.

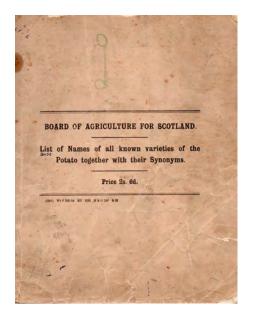
The first potatoes to Europe were shipped across the Atlantic by the conquistadores' vessels laden with gold and silver from South America. There was a need for a new food source for the rapidly-growing populations across Europe and this led to an over dependency on the potato, particularly in Ireland and the west of Scotland.

"Demand from the south was strong and there was an eagerness to get better crops from the improved seed varieties."









Some historic extracts and advertisements looking at seed potato listings.

There were a limited number of ill-assorted varieties to choose from, so a high-yielding variety like the Lumper, in spite of its deep eyes, was rapidly adopted. Everyone in the west was growing it.

Then, in 1845, a new unknown disease literally floated in on the wind and found an agreeable host. It spread like wildfire throughout the potato crops, rapidly blackening stems and rotting tubers. Famine and mass emigration were the immediate results, but on the positive side there were those that tried to look for a solution.

William Paterson was a farmer's son. His father had run a successful market garden, wholesaling and retailing near the docks in Dundee. William brought potatoes from across the world and pioneered a cross-breeding program in his quest for a disease-resistant variety. He came up trumps with his variety Victoria. The government initially showed an interest but he invested £10,000 of his own money in the project.

His Victoria and seedlings were used by others. The Champion variety was bred by John Nicoll in Scotland and widely grown in Ireland during the latter half of the 19th century, while Findlay bred from Fife, with his extensive portfolio culminating in Majestic.

Demand from the south was strong and there was an eagerness to get better crops from the improved seed varieties. Virus and wart disease added to the woes of potato blight and the new Eldorado variety had a short life span. When demand outstrips supply, prices go sky high.

T Kime, a merchant from the Fens, claimed Eldorado was actually the Evergood variety, which had been around for a few years,





which opened a whole can of worms. British biologist Salaman Redcliffe, who published various findings on potato genetics, was quoted as saying that less scrupulous traders had long been in the habit of reissuing old and tried varieties under new names, new descriptions and new prices.

Some old press advertisements I received from the great, great grandson of William Paterson clearly demonstrate this. Advertisements could promote how magnificent these new varieties were and there was no requirement for these to be backed up with trial results.

Some knowledgeable authorities at the time, notably Redcliffe Salaman in 1916, wanted to get to the bottom of this. Under the auspicates of the Royal Horticultural Society, he set up a program. Samples would be sent to a centre in Ormskirk initially testing for wart disease but also examining and comparing botanical descriptions.

WW1 interrupted this work and towards the end of the war, when food prices rapidly rose, the government took an interest.

Britain no longer ruled the waves so shipments of food from America and New Zealand were vulnerable to attack. This would get far worse in WW2 with the development of the U boat.



Potatoes were a top food that could be grown at home. "Your bread costs ships. Eat home grown potatoes instead" was promoted in WW2. After the war Salaman, as Vice President of the National Institute of Agricultural Botany, chaired the Synonym and Potato Committee to resolve the question of potato varieties.

The findings were unbelievable. I found The Board of Agriculture for Scotland's book of varieties with synonyms box of the renowned variety collector's, Donald Maclean's, treasures. This collection was left to me by his son after a covid clear-out session.

The 40 pages led to some fascinating observations. Up to Date, a very popular variety, had more than 200 synonyms, Abundance had more than 100, British Queen had 75, Sharpes Express 27 and so on.

The Highlander and Nobleman, advertised as two distinct varieties, both turned out to be Up To Date. More recently, White Heather was found to be genetically identical to Sharpe's Express.

Nowadays variety naming is perhaps less of an issue for the end user. No one knows what goes into a packet of crisps, most French fries and or mash.

Today a new variety, before being listed, must show distinctive differences. DNA finger printing will facilitate the job of today's equivalent.

Portsoy grower hosts post-harvest demonstrations

GRAY Farms in Portsoy, Scotland, recently hosted a display of post-harvest technology organised by Agropack Solutions, a Scottish distributor for Wevano, Manter, Solidtec, Inovaa, Meconaf, Scotts UK and Vegniek.

At the heart of the event was Agropack Solutions' grading and packing line, featuring contributions from Wevano, Manter, Solidtec, Inovaa, and Meconaf.

A standout attraction was the U-Vision optical potato grader, which is designed to grade potatoes by size and quality and uses

multiple cameras, while Agropack Solutions' rugged box tippler, built to handle both one and two-tonne boxes, was also popular. Designed in-house, it switches between box sizes automatically, with no adjustments needed.

Scotts UK's Evolution separators, tailored for the root crop and vegetable markets, were also showcased.



As well as live demonstrations, the event brought together growing professionals and technology advocates who were able to exchange ideas and discuss future innovation in sustainable growing. Sarah's Burger Shack delivered a Highland-inspired lunch made with locallysourced ingredients.

New trailer/container wash unveiled

BRITISH company WNV Systems has just unveiled a patented internal trailer and container wash using advanced technology.

The new Internal Trailer Wash (ITW) is a standalone, portable unit and provides an automated solution which seeks to keep costs down through water recycling and reduction in manpower and time required to sanitise vehicle and container interiors.



Family grower's grading line investment pays off

NORFOLK-based family growing business, Hugh Crane Ltd, recently installed a new Tong grading line featuring a Downs CropVision optical sorter which George Crane said has led to a dramatic increase in throughput and reduction in labour requirements.

Prior to the installation, grading into store required 10 to 12 workers on the $\,$ grading line. With the new system, even in the most challenging conditions, a maximum of two people is required. When grading out of store, the new line can run without the need for manual picking, whereas previously, two or three staff members were necessary.

Featuring a 9.4m long heavy-duty Tong hopper with 2.5m inclined section at the infeed, the new line has seen the average throughput double from 25-30 tons per hour to 50 tons per hour. As a result, Hugh Crane Ltd

has placed an order for a new four-row harvester to keep pace with the increased processing capacity.

The new grading line features Tong's EasyClean separator, EasyGrade screen modules and a series of Tong EasyFill box fillers.

George said the optical sorting element has made a huge difference in the level of sorting that can be achieved without picking-off staff.

"A key factor in selecting the Downs CropVision optical sorter was its minimal drop height as well as the optical sorter's advanced debris removal and quality-sorting capability," he added.

Tong recently received ISO 9001 accreditation by BSI (British Standards Institution), an internationally-recognised certification which acts as a benchmark for quality management systems.







forklift movements.

Wash line benefits 'clearly visible'

LINCOLNSHIRE-based Burgess Farms is seeing the benefits of a new potato wash line pay off, six months after its installation.

Burgess Farms has washed and packed its potatoes at Sutton Bridge for over 25 years. The first potato was packed at the Sutton Bridge site in 1964, when the Potato Marketing Board 'Experimental Station' was officially opened.

Today it is a major supplier of potatoes and other vegetables with an established organic heritage. Its potatoes are available in most pack sizes, formats and packaging materials, ranging from a 200g individual portion pack to a 25kg sack, and above.

Last year Burgess Farms decided to improve its product washing and product grading capabilities and began looking for viable options.

Engineering Manager David Booth said: "The senior management team were aware that the line could be significantly improved with investment in new technologies and were keen to take further advantage of optical sorting and grading. They asked me to specify a washing and packing line with a Newtec Celox at its centre."

Installed in October last year by Haith Group, the new line has significantly increased Burgess Farms' throughput and added further optical grading and sorting capabilities to the company's Sutton Bridge site. David said the investment was 'considerable'.

Once dried, a Newtec Celox P-DUAL-UHD Camera sorts the potatoes by size, shape, and quality, identifying fresh damage, black spot, dry cuts, grey damage, green and rot in a single-stage process. The Celox allows up to sixteen categories to be selected for grading and sorting and

grey damage, green and rot in a single-stage process. The Celox allows up to sixteen categories to be selected for grading and sorting and will feed four, eight or 12 lanes depending on capacity. In this setting, Burgess Farm asked for each lane installed to feature a Haith VertiFill Pro box filler and weigh platform scales with weight indicator.

The new line starts with a RotaTip TE. The award-winning box tipper

is fully electrically-powered and ejects the empty box upwards to reduce

Potatoes enter the system over a web which removes any loose soil

from the crop before transferring it into a SupaFlume de-stoner. The crop

is then washed through a semi-submerged barrel washer which features a

The potatoes are then dried by passing over a Direct-Drive Sponge Roller

Dryer. Each roller is driven directly by a shaft mounted drive which significantly

reduces maintenance costs compared to the traditional chain driven machines.

Two pintle lined rubber infeed rollers aid dewatering & debris removal.

fully rubber pintle lined barrel and floating debris removal system.

Once commissioned, David oversaw the installation of CCTV along the line, allowing the single operator to see and control every element of the line from his workstation, even including the door on the washer.

Digital features improve ease-of-use

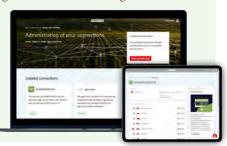
GRIMME recently presented a range of new digital features to improve ease-of-use for potato growers.

The new comment field 'Uplink UT' allows the farmer to document any specific notes. This information is documented on a task-specific basis in myGRIMME, making the transfer of handwritten notes obsolete.

AUX remote control and snapshots for the SmartView video system were revealed. The new snapshot function enables geo-referenced screenshots of all connected cameras and their transmission to the myGRIMME portal at the touch of a button. For improved user-friendliness, the views on the SmartView terminal can now be controlled remotely via any ISOBUS AUX-N device.

The Connection Manager is a centralised management solution

between myGRIMME and external farm management systems. This enables simplified data exchange, reduces the manual input effort and minimises errors.





Smart wash line integration boosts capacity at Patatas Melendez

Patatas Meléndez, a leading company in the cultivation, selection, and distribution of potatoes in Spain, has completed a major infrastructure project at its main facility in Medina del Campo—now one of Europe's most advanced post-harvest operations. The project included the installation of a custom-designed wash line and partial packing line, supplied and integrated by Wyma.

The new system was developed in collaboration with Melendez's in-house teams and other suppliers to prioritise gentle handling, automation, and real-time data capture. The result: improved quality, reduced damage, and doubled packaging output to 130 pallets per hour. Energy and water use have also been significantly reduced, supporting the company's broader sustainability goals.

To explore the full Patatas Melendez case study and see the solution in action, visit: hubs.ly/Q03jsRZW0

New SR300 three-row trailed cup planter

FOLLOWING the success of the SR200 and SR400 planters launched in 2023 and 2024, Standen Engineering Ltd recently launched the trailed three row SR300 model.

The planter is suitable for planting three rows at a time in a 1.8 or 2.0m bed and the central row can be turned off to enable two-row planting with the same planter.

It has an automatic 2.5 tonne tipping hopper which feeds seed to the planting units via sensor activated belts in the hopper floor, ensuring that the chitted seed is gently handled. This model uses the same adjustable cup design as the SR200 and 400 which enables the accurate planting of any seed size at speeds of up to 10km/h.

The automatic pressure hood control raises and lowers the hood depending on how much soil it is carrying and the in-cab touch screen controls the spacing, depth and pressure of the hood. The soil openers are staggered to help with soil flow, particularly in damp sandy soils. The SR300 also features rear wheel steering and machine levelling for hillsides.

Standen Engineering's Sales Director Edward Gilbert said: "We've had some great feedback from growers using our SR200 and SR400 planters. The new three-row SR300 model is perfect for growers working lighter land and who want to increase their planting density and yields. Plus, the ability to quickly convert it into a two-row planter by turning off the central row means that this planter is an incredibly versatile addition to a grower's kit."

Standen also offers this model in a two-row version for those who might prefer a trailed two-row planter to a tractor-mounted planter and is offering to give demonstrations of this and other machinery.



Dealer partnership in Scotland

SCOTTS Precision Manufacturing has formed a new partnership with Agropack Solutions to strengthen its presence in Scotland.

Established in 2020, Agropack Solutions will offer Scotts' Evolution Separator systems along with full sales support, technical assistance, and after-sales service, ensuring farmers have access to all the resources they need to get the most out of their equipment.







Next generation harvester

GRIMME has introduced the new generation of the two-row, selfpropelled Varitron series.

The optimisation of the series focused on the new cab, with a revised operating concept and various improvements along the crop flow for harvesting potatoes.

The new cab features generous leg room, narrow pillars and a twozone automatic climate control system. It has a large windscreen, swivelling leather seat and large CCI 1200 operator terminal with the GRIMME Digital Interface (GDI. All functions can be monitored with up to 13 cameras on a 12 inch display of the SmartView video system. In addition to the flexible operation layout, the features of zooming and live slow motion are included as standard.

All-round visibility at night and in poor weather conditions is favoured by the new LED lighting. For the documentation of harvest masses, the harvester can be equipped with an integrated system for mass mapping.

An interchangeable device is available for exchanging the intake components. The proven concept of depth control remains in place with TerraDisc and TerraControl. Uniform mechanical coupling points enable quick changeover, similar to those in the manufacturer's fourrow harvesters.

A new spiral roller is available for the roller separator, in which the material composition has been changed and the height of the spiral almost doubled. This increases the passage for impurities, boosts the separation performance and reduces wear on the rollers.

The combination of a double-separator with a downstream fitted fine haulm elevator is unique in this machine class. The double-separator can be configured as a Double-MultiSep or as a roller separator in combination with MultiSep. The GRIMME specific TwinSep can be used as a crop-friendly bypass to the roller separator.

To remove and to prevent any blockage, all main webs, the fine haulm elevator and the ring elevator can be individually and conveniently reversed from the operator cab.

The optional weather roof, available with or without side panels, protects the picking crew in all weathers. The white roof tarp is colourneutral and supports the reliable recognition of green tubers.







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