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POTATO REVIEW

SEPTEMBER/OCTOBER 2023

A NEW GENERATION OF GROWERS

DISEASE DETECTION STRATEGY

RETURN OF THE COLORADO BEETLE

BP2023 AND NPI AWARDS UPDATES

PLUS: Storage advice | Blight & Alternaria tips | Machinery & agtech

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GROWING TOGETHER

Editor's letter

THE need to get future generations involved in growing has never been greater, and education plays a key part of this.

It's therefore refreshing to see a host of initiatives taking place with children, and the fruits of their labours being harvested this summer. The East of England Agricultural Society's 'Kids Country' initiative, Aberdeenshire Monquhitter Primary School's harvest, and an annual potato growing and harvesting competition in Perth and Kinross are all good examples of how growers, communities and suppliers are working together. Our special section on page 28 gives full details of these and shows how we can all get involved.

With Colorado Potato Beetle making its first appearance in the UK since 1977, we look at why the country has been put on high alert, and we also detail how a new collaboration is working to counter the problem and produce a comprehensive strategy for future management of PCN.

In terms of disease detection, we bring details of a project whereby gas sensors use volatile biomarkers, Andy Cunningham shares some seasonal tips for Alternaria and Dr David Cooke offers advice on tackling potato blight outbreaks following the wettest July since 2009.

Andrew Goodinson shares his seasonal insights on storage, discussing some of the key points on planning, and how what takes place in the field can impact on storage and in this month's Professional Profile Solynta's co-founder and CEO Hein Kruyt shares his career journey and aspiration for the future of potato growing.

We also bring news of a number of achievements and projects in our news sections, and while we're on the subject of achievement who can forget the fast-approaching National Potato Industry Awards? Our awards co-ordinator has reported that some great entries have already been submitted and we're looking forward to announcing who's been nominated, as well as the ultimate award-winners, when we see you all on the first night of BP2023 in November.

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Yorkshire grower wins BASIS award

YORKSHIRE potato grower Mark Denness has been awarded the BASIS Paul Singleton Award for his project on seed treatments and their potential to reduce the use of pesticides and artificial nitrogen.

He received the accolade after achieving the highest number of marks for the research element of the BASIS Certificate in Crop Protection course.

After studying agricultural engineering at Harper Adams University, Mark worked as senior designer for Sumo UK Ltd. More recently he has returned to his family farm in East Yorkshire which grows potatoes as well as cereals, oilseeds, sugar beet and maize.

Collaborating on crop stress technology project

THE James Hutton Institute is collaborating with leading research groups and industrial collaborator BioAtlantis on a new European research project called "CropPrime."

With EU Horizon funding of up to €1 million confirmed, CropPrime will develop molecular priming technologies to enhance potato crop yield under stressful conditions caused by climate change.

The project will primarily focus on developing technologies to improve crop tolerance. An important aspect of the project will be the identification of natural compounds found in plant biostimulant products (which trigger natural plant processes that enhance nutrient use efficiency), derived from marine algae such as seaweed, produced by BioAtlantis, based in County Kerry, Ireland.

Additionally, the project will work on developing RNA (similar to DNA) based fungicides to reduce fungal infections in crops. The overall goal of this research is to develop sustainable agri-tech products to help crop growers protect and enhance potato crops against adverse weather conditions such as drought, heat, cold, and water-logging.

The Hutton along with its project partners, will investigate the molecular mechanisms underlying plant stress and how these relate to the physiological processes that support crop resilience.

Brothers awarded for sustainable practices

MATTHEW and Lloyd Smith from F Smith and Sons, who grow potatoes and other crops at Huntingdon, Cambridgeshire have been announced as the winners of the 2023 Rawcliffe Bridge Award for Sustainability.

Now in its second year, the accolade celebrates individuals and businesses that deliver on all three pillars of sustainability – people, profit and planet.

The Smith brothers are third-generation farmers, having inherited the farm from their father 18 years ago. The 450-acre enterprise has a wide rotation. As well as potatoes, the brothers grow wheat, barley, sugar beet, beans, sunflowers, linseed and millet.

The rotation is to support their strategy to reduce the farm's high black-grass weed pressure, improve their soil organic matter, and provide diversity within their landscape.

Their practical approach to sustainability means they only own and contract land that they can manage between the two of them.

Matthew said: "It's about people, the environment and everything linked to it. It is about collaborations and partnerships, building long-term connections and loyalty with our customers, local residents and industry. Most of all sustainability is about developing the farm for the future."

The award was presented at an event highlighting the 15 years of partnership and sustainability projects between Andrew and William Pitts and BASF at The Grange in Northampton.

Matthew and Lloyd received a commemorative award plate, as well as a year's membership to the Institute of Agricultural Management, a year's membership to Farm491, a ticket to the Oxford Farming Conference 2024 and access to BASF Sustainability experts, who will provide guidance and support for any future plans.

Funding has been awarded by Innovate UK for the nine-month TuberTurgor project.

"Bruising contributes to enormous losses in productivity and reputational damage for both growers and supermarkets."

Dr Andrew Gill, General Manager at B-hive

Goodbye to bruises?

Agri-tech innovator secures project funding to reduce bruised potato waste.

AGRI-TECH research and development business B-hive Innovations is embarking on a new collaborative programme that aims to reduce the risk of potato bruising and develop technologies that could reduce supermarket waste.

B-hive has been awarded funding by Innovate UK, as part of its Analysis for Innovators (A4I) programme, to undertake the nine-month TuberTurgor project in partnership with scientists at the National Physical Laboratory (NPL).

Together, the research team will investigate non-destructive methods of measuring turgor pressure in potatoes. This is the force inside cells that pushes outwards, allowing the cells to withstand shocks and reduce bruising.

The project will gather extensive data to provide proof of concepts for tools that ultimately could automatically sort different fresh produce by bruising risk.

Dr Barbara Correia, UKRI Future Leaders Fellow and TuberTurgor Project Lead at B-hive, said: "Growers and supermarkets are increasingly impacted by potato bruising that is brought on by prolonged periods of drought from rising global temperatures. This can drastically increase susceptibility to bruising damage during handling, so there is a supply-chain need to investigate how this can be reduced through devising early, non-destructive detection measures."

Researchers will look at ways of measuring turgor pressure.

Collaborating with the team at NPL to utilise its technical expertise and access to turgor analysis techniques, B-hive will be testing a series of prospective methods to measure turgor pressure. A range of techniques will be explored, including physical hardness measures, ultrasonic and spectroscopic testing, as well as high resolution imaging approaches.

After an initial period to define the research protocol, the team will be conducting the first testing phase from August to October to determine the most successful testing methodologies. This will inform the second testing phase to gather extensive data for the most promising techniques - set to take place from November until the project completes in March - with refinements being continually made.

Dr Tony Maxwell, Technical Lead at the National Physical Laboratory, said: "NPL has a long history in the development of measurement techniques, and we are excited to be able to apply our expertise to an issue that so directly influences agricultural productivity and the environment."

Dr Andrew Gill, General Manager at B-hive said: "The TuberTurgor project is our latest fresh-produce analysis initiative, which has been devised to help supply chains minimise waste.

"Bruising contributes to enormous losses in productivity and reputational damage for both growers and supermarkets. We are delighted to have secured funding that could help to retain a high overall quality of end produce, as growers face ongoing challenges to manage their crop."

See how growing practices have evolved ...

TAKING place on November 4th and 5th, the Newark Vintage Tractor and Heritage Show gives growers and machinery enthusiasts a chance to see how growing practices have evolved over the past century and more.

More than 1,000 vintage tractors, implements, plant machinery and commercial vehicles from across the UK will be on display.

Supplier's Farms of the Future featured in film

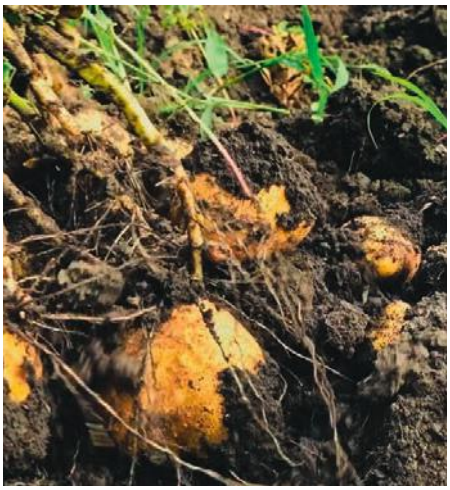
A NEW RE:TV film has premiered featuring McCain's Farms of the Future.

McCain's work at its Farms of the Future puts its regenerative agriculture research into practice on farms in varying regions and environmental conditions to showcase how regenerative farming practices can be implemented for large-scale commercial farming.

The research provided at these hubs evaluates new technologies and potato varieties to drive efficiency in potato production and regen ag adaptability, as well as removes any significant research barriers to the adoption of sustainable farming methods, which are vital for the country's climate change ambitions.

RE:TV highlights inspiring innovations and ideas emerging in response to the climate and biodiversity crisis by providing short documentary-films across its website, social platforms and through distribution partnerships with the likes of Amazon Prime, Bloomberg and Waterbear.

A remote production team has worked since the summer of 2020 to make more than 70 films with local crews all over the world, exploring a wide range of themes from direct-air carbon capture in British Columbia and sustainable aviation fuel in Illinois to regenerative agriculture in India and plastic waste recycling in Uganda.



Unique approach to identify resistance genes

A NEW EU Horizon Europe project to protect potato plants against emerging new pests has been officially launched.

European Potato Trade Association, Europatat, will be an active partner in the project, named PATAFEST, which will aim to protect potato plants by means of pest spreading and resistance characterisation, pre-harvest treatments, and post-harvest solutions.

One of the most important pests is caused by bacteria Candidatus Liberibacter solanacearum (CLso), causing a disease known as zebra chip (ZC). The introduction of CLso bacterium on potato is mainly linked to the presence of the vector psyllid Bactericera cockerelli (BC) causing severe damage, both in terms of yield losses and quality.

Main potato post-harvest diseases as dry rot, black dot and silver scurf, are caused by soil-borne pathogens that have incidence in both field and storage

The project will develop a unique approach to identify resistance genes in potato varieties against selected pests and pathogens. It will:

Characterise at molecular level the ecological pest spread pathway and identify potato disease resistance varieties against CLso and postharvest pathogens.

Provide effective preharvest plant and soil treatments against CLso vector and soil-borne pathogens combined with other cutting-edge digital technologies such as image analysis tools (mobile app) and artificial intelligence predictive models.

Develop postharvest technologies (biocontrol coating solution, controlled atmosphere storage and volatile organic compounds (VOCs) sensors) to control the incidence of soil pathogens and maintain the quality of potato tubers stored.

The PATAFEST consortium has 18 partners, including international cooperation with Ecuador, and led by Funditec. The project will run until May 2027. Europatat's role will be related with the dissemination of project's goals, results and to provide the link between the research and EU policy makers.

New look for breeding company

INTERNATIONAL potato breeding company Europlant has rebranded, with a new logo now encompassing its three divisions: Breeding, agriculture and distribution.

The decision to adopt the new logo reflects the company's growth over the past 30 years and need to have updated branding which reflects its current position.

Managing Director Jörg Renatus: "In the past 30 years, we have established a significant market position. With our new structure, we are well-positioned for the next 30 years as well. The modernised logo represents this realignment."

Border model is not fit for use, says head of FPC

THE Government's draft Border Target Operating Model (TOM), which sets out a new model for importing goods into the UK from countries inside and outside the EU following the implementation of Brexit, will severely compromise potato suppliers and others in the fresh produce supply industry, according to Chief Executive of the UK's Fresh Produce Consortium, Nigel Jenny.

Speaking to the House of Lords Horticultural Sector Committee recently, he said the model was ill thought-through.

SFI changes: Mixed response

THE Sustainable Farming Incentive 2023 began accepting applications from August.

It offers new actions on hedgerows, integrated pest management, nutrient management, farmland wildlife, buffer strips, and low input grassland. Growers could be paid from £10 per 100m for managing one side of a hedgerow (plus a further £10 per 100m to maintain or establish hedgerow trees); £129 per hectare for multi-species cover crops; or £589 for a nutrient management review.

For tenant farmers, along with other improvements made in response to Baroness Rock's review, there are shorter agreement lengths that do not require landlord consent.

Planted areas down in EU

PLANTED areas are down in many EU countries, including major producers Germany, the Netherlands and Poland.

According to market sources, average yields could be below the five-year average, and combined with the low crop acreage, the harvest could be one of the smallest on record.

Celebrities join campaign

DJ and TV presenter behind McCain's drive to support regenerative potato growing.

CELEBRITY presenters are getting behind a new campaign launched by frozen potato product manufacturer, McCain Foods, which has been launched in response to new research findings.

Love Island commentator Iain Stirling and Capital Radio DJ Roman Kemp have both become involved with the "Let's All Chip In" campaign, which highlights the positive impacts regenerative farming can have.

A campaign film features Iain Stirling spending time with McCain farmer, Imogen Stanley, at her family's farm, Rectory Farm in Oxfordshire. Throughout the film, Iain learns about the regenerative farming methods Imogen is beginning to implement, and why these are so important to the future of farming and the planet.

Roman also spent a day at Rectory Farm where he met farmer Imogen, who grows potatoes for McCain as well as other crops.

While Roman's box-fresh trainers did not survive the visit, he did learn about the new farming practices that Imogen is introducing, including planting wildflowers to attract birds and insects that help keep bad bugs at bay. He also met soil health expert Liz Stockdale to understand more about how moving the soil less helps to keep it healthy.

New research commissioned by McCain has found that a third (30%) of Brits do not know what farms do or where their food comes from, with Gen Z over four times more likely than over 55s to admit to this lack of understanding (61% vs 13%). Gen Z are also twice as likely as over 55s to be concerned about the environmental impact of the way the products they buy at the supermarket are produced (57% vs 29%).

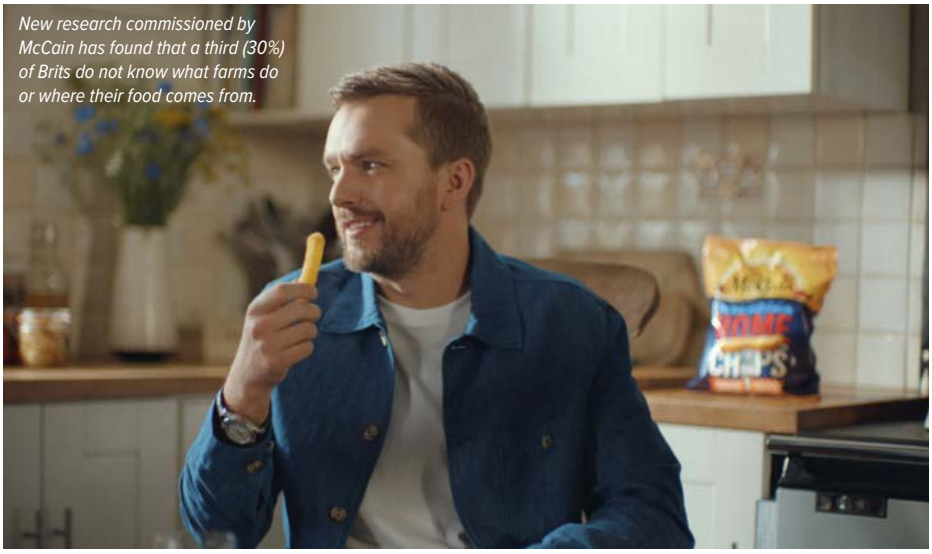
Radio host and self-confessed farm newcomer Roman Kemp spent the day at Rectory Farm in Oxfordshire where he met farmer Imogen Stanley who grows potatoes for McCain.

The campaign aims to highlight the positive impact regenerative agriculture can have on the environment and the food we eat, educating the Gen Z and millennial audience on the need for a sustainable transition.

It highlights the benefits of regenerative agriculture, with the brand committing to support its 250 British growers in transitioning to more sustainable methods of farming.

McCain recently partnered with NatWest to remove financial barriers for potato growers who are transitioning to sustainable farming practices.

Through its asset finance arm Lombard, NatWest now offers a first-of-its-kind initiative in the UK which sees the bank provide additional financial support to McCain potato growers. McCain has committed to offer a contribution towards the interest payable for assets that support regenerative agriculture practices.



New research commissioned by McCain has found that a third (30%) of Brits do not know what farms do or where their food comes from.

Other initiatives it is undertaking include grants for cover crop seed and fully funding soil health assessments, as well as offering free pollinator seed this spring.

McCain joined the Sustainable Markets Initiative (SMI) Agribusiness Task Force alongside a number of businesses and NGOs to further accelerate the scaling of greener practices in the farming industry worldwide, which have been hampered by high costs.

The company has also committed to investing in three Farms of the Future by 2025, to help advance sustainable farming practices and explore innovative agricultural technologies. Farms in New Brunswick, Canada, and Lichtenburg, South Africa, are already operational. The specialist farms showcase how regenerative farming practices, and the latest agricultural innovations can be implemented at scale.

Additionally, McCain has invested a further £50 million into contract pricing for its farmers over the past two years, with the investment helping to safeguard the future of potato farming in the UK.

On the new campaign, James Young, VP Agriculture at McCain Foods GB said: "We are pleased to launch our new 'Let's All Chip In' campaign to highlight the need to scale up the transition to regenerative agriculture. The case for making our food systems more sustainable and resilient has never been clearer, and we believe agriculture is an integral part of the solution.

"We are very proud to now raise awareness with our consumers about the fantastic progress that is ongoing on farm as we work towards our 100% Regenerative Agriculture ambition by 2030."

Pest returns to UK

As Colorado Potato Beetle makes its first appearance since 1977, we look at why the country has been put on high alert.

GROWERS, processors and the public have been warned to remain vigilant following the discovery of an outbreak of Colorado Beetle, which was confirmed in Kent in July.

The Animal and Plant Health Agency (APHA) confirmed findings of Colorado potato beetle larvae in Kent. Confirmation was made following laboratory diagnosis of samples taken by APHA's Plant Health and Seeds Inspectorate. It is the first time an outbreak of the beetle has been confirmed in the UK since 1977, although they are endemic in large parts of Europe.

APHA is working closely with the affected grower to eradicate the pest from the site, including performing a 1km survey to determine whether there are further cases beyond the immediately infested area.

If not eradicated, Colorado potato beetles are a significant threat to potato crops. The adult beetles and larvae feed on the foliage of potato and several other plants in the nightshade family and can completely strip them of their leaves if they are left uncontrolled. However, they are not a threat to human or animal health.

UK Chief Plant Health Officer Nicola Spence said: "Following a report, our experts have identified the presence of Colorado beetle larvae in a potato field in Kent. We are responding swiftly through our eradication programme, involving ground surveillance to look for beetles and larvae at the outbreak site and surrounding area.

"Whilst this pest does not pose a threat to human health, we encourage all growers, farmers, processors and the public to remain vigilant and report any sightings, especially in Kent."

The beetle is not endemic to the UK and is currently regulated as a Great Britain quarantine pest, with import and movement restrictions in place for susceptible host material. APHA is obligated to act upon the current findings and eradicate this pest to support its efforts to maintain this status. Statutory Notices will be issued to ensure the containment and eradication of this pest is undertaken.

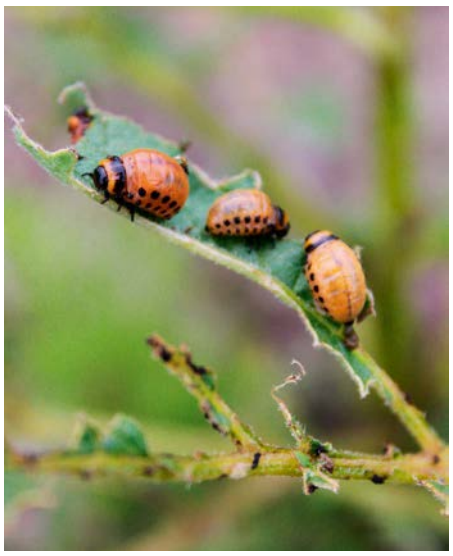
Farmers and growers in particular are being encouraged to remain vigilant for signs of the pest. The beetle is bright yellow or orange with black stripes and is usually between 8.5 to 11.5mm in length and 3mm in width. Its larvae are a reddish brown in colour, round and globular, and up to 15mm in length.

Although distinctive in appearance, there are several beetles that are frequently mistaken for them, including native and introduced species.

Host species for the Colorado Beetle are the nightshade family which include the Solanaceae family (including tomato plants, aubergines, peppers, cabbages, salad leaf, wild carrot, lettuce, parsley, tobacco as well as potatoes).

Hitchhikers from the continent

The beetles are occasionally imported into the UK from continental Europe as 'hitchhikers' on non-host plant material, such as leafy vegetables, salad leaves, fresh herbs and grain and are reported to the UK Plant Health Service who act on the findings. In the past



"We are responding swiftly through our eradication programme, involving ground surveillance to look for beetles and larvae at the outbreak site and surrounding area."

Nicola Spence, UK Chief Plant Health Officer

70 years, there have been two outbreaks of Colorado potato beetles in the UK, one in 1976 and one in 1977. Both outbreaks were eradicated shortly after detection.

While Colorado potato beetle adults and larvae pose a significant threat to potato crops, they do not threaten human or animal health.

Colorado potato beetle was first recorded in 1811 in the USA. The beetle has since spread across the USA, and moved into Canada, Central America, Europe and Asia.

It first established in Europe in Bordeaux, France, in 1921, and is now present in most European countries. However, it has yet to establish in the UK.

Any suspected findings of the Colorado potato beetle or its larvae should be reported to the Animal and Plant Health Agency, whether in a commercial, environmental, or domestic setting, by telephoning: 0300 1000 313 (please select option 3 when calling) or by emailing the planthealth.info@apha.gov.uk mailbox.

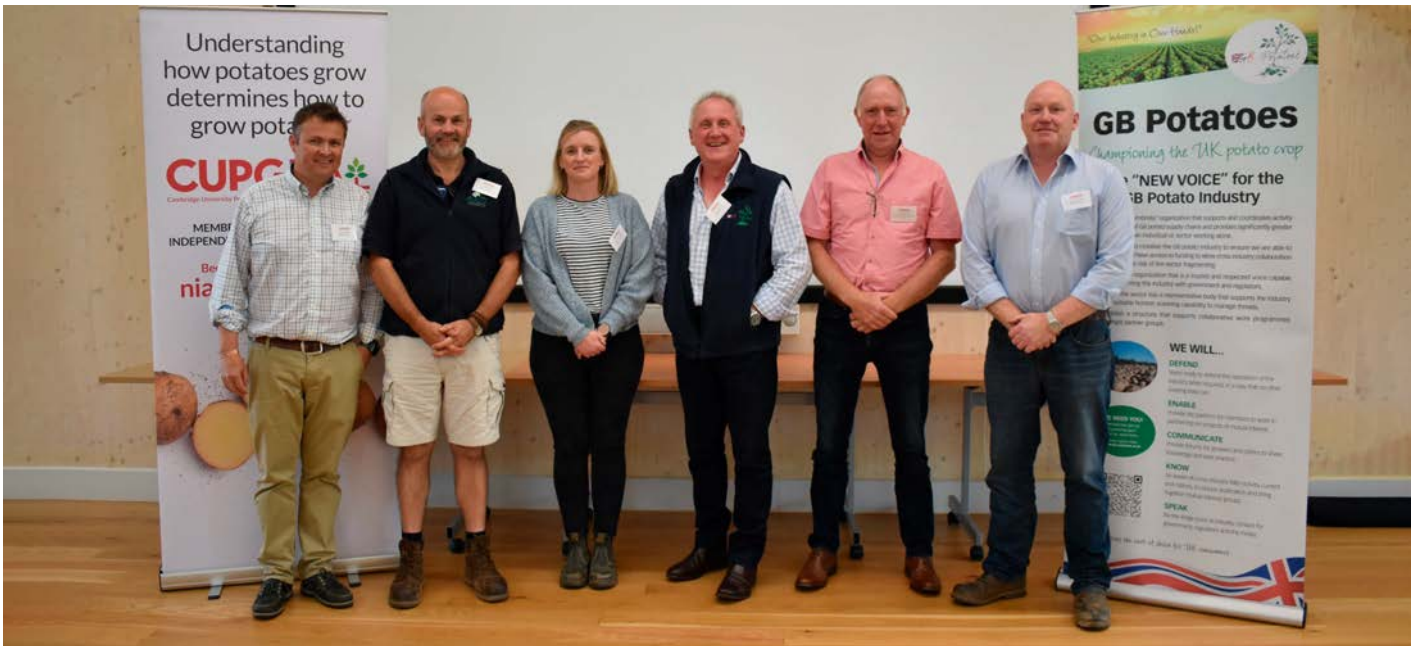
Following discovery of the pest, appropriate action will be taken to prevent further spread, including removing and destroying the potato crop within the immediate vicinity in a biosecure manner.

Mistaken identity?

Although adult Colorado beetles are highly distinctive in appearance, there are several beetles that are frequently mistaken for them. These include:

- Harlequin ladybird
- 14-spot ladybird (Propylea quatuor-decimpunctata)
- Burying beetle (Nicrophorus investigator)
- Wasp beetle (Clytus arietis)
- Spotted longhorn beetle (Rutpela maculate)
- Cockchafer beetle (Melolontha melolontha)
- Rosemary beetle (Chrysolina americana)

The larva can also be confused with that of the Harlequin ladybird pupa. PR



United against PCN

Organisations collaborate to bring 'joined-up' approach to pest.

MEMBERSHIP organisation, GB Potatoes and research association CUPGRA are working in partnership to establish a GB PCN forum to counter the problem and produce a comprehensive strategy for future management of PCN.

The forum will focus on bringing together all those from across the industry who have an interest in, or knowledge of PCN and coordinate an approach that turns that information into a practical industry plan.

The forum's interest will include research past, present and future threats to chemical control, breeding of resistant/tolerant varieties and information on trap cropping and bio fumigation amongst other areas to provide the industry with a strategy for tackling the PCN issue in an integrated way.

An initial workshop was held on March 21st at CUPGRA, attended by representatives from all sectors of the industry where it was agreed that there was a need for a GB PCN Forum. The first meeting of the PCN Forum took place on August 17th.

Chair of GB Potatoes Mark Taylor said: "PCN is one of the major issues facing the potato sector and, without a co-ordinated approach to the pest, the industry is under a grave threat of walking into a situation from which it will be difficult to reverse.

"This is why it is so important that the industry comes together to tackle the problem in a joined-up and focussed way. As the voice of the GB potato industry, GB Potatoes is ideally placed to facilitate this forum in partnership with CUPGRA.

"It is vitally important that we produce defined goals, realistic timelines and create practical solutions that support the industry. It is not a talking shop, and we will expect to be measured on our outputs."

Deputy Chair of CUPGRA, David Almond, added: "CUPGRA are delighted to be working with GB Potatoes to create this forum and ensure that the industry takes a major step forward in developing a plan for tackling this costly and devastating pest. "

The GB PCN forum will be an open and inclusive group pulling on technical expertise from wherever it is available as well as utilising the practical skills of growers to produce a strategy that is workable in the field. The steering group is the "initiator" to get the forum underway. Beyond that all interested parties will be encouraged to contribute.

Those involved say it is "essential" that everyone in the industry buys in to the outcomes of the forum - not only those directly involved but those on the periphery such as land agents, landowners, consultants, retailers, and the supply chain.

To date, the Scottish Government has put funding in place creating PCN Action Scotland and a lot of work has also been conducted across England and Wales. The forum hopes to bring these pieces of work together for the good of the British potato industry as a whole.

PCN facts:

- 48% of England & Wales and 35% of Scotland's ware land is infected with PCN.
- The estimated cost to the GB potato industry is c. £31m. (source. Matt Back, Harper Adams university)
- PCN can reduce yields by up to 80%. This is a significant loss in a crop that is expensive to grow and requires a high number of inputs.
- Seed potatoes must be grown in soil that has been tested and found to have no PCN cysts present.
- The area infested with Globodera Pallida is doubling every seven years in Scotland, meaning there is a less land available for producing seed potatoes.
- There are fewer resistant varieties available to control G. pallida than G. rostochiensis. (Source. PCN Action Scotland.)
- Work already conducted in Scotland has identified that G. Pallida is an increasing problem and is becoming more of an issue than G. Rostochiensis as it is more genetically variable.
- Only 3% of ware crops and 8% of seed crops grown in Scotland are resistant to G. Pallida, demonstrating the extent of the problem. PR

‘Keep ’em coming!’

While a good cross-section of awards suggestions are coming in, **NPIA** organisers reiterate the need to fill in an entry form and extend deadline to accommodate.

ORGANISERS of the National Potato Industry Awards have seen some varied nominations coming in on all categories and have extended the entry deadline so that anyone that operates in or supplies to the British potato industry still has time to put forward an entry.

“We’ve had some great people, projects and products suggested and would love to be able to announce their nominations, but people don’t always remember to complete a nomination form, so we can’t put their names forward to the judges without these,” said Awards Co-Ordinator Hayley Comey.

“It’s easy to fill in a form online, and if you prefer to remain anonymous as the nominator, this isn’t an issue as long as we have some contact details to back up the nomination.”

Many growers and growing managers have been involved in trials, projects looking at new farming techniques, and ideas to bring ‘new blood’ into the potato growing industry. The organisers are particularly keen to hear about how these individuals are making their mark.

“There are so many grower’s stories we’d like to be able to share. Whether it’s longevity of service, surviving against the odds, growing a business from scratch, working alongside scientists or sustainable farming practitioners for the good of British growing, or helping to educate the growers of the future - we want to hear about those stories and accomplishments. If you’re working alongside a grower or growing company that you feel deserves recognition, please fill in a form online to put their name forward,” said Hayley.

*Full details of all the categories are overleaf and can be found on the Potato Review website at **https://www.potatoreview.com/national-potato-industry-awards**. Late entries will be accepted up until September 20th.

Highest-ever exhibitor numbers at BP2023

Record demand means the most exhibitors ever will be at this year’s British Potato (BP) show. Both exhibition halls are now full and there are waiting lists in operation, according to Event Organiser Robyn Houlden- Teague.

“Outdoor space remains available and enquiries are brisk, including from a number of first-time exhibitors with exciting new products and services to showcase,” said Robyn.

“Post Covid interest from visitors to get out and see new potato developments at first hand is also evidenced by advance visitor registrations being hugely ahead of any past British Potato event at this stage in preparations.”

Seminars will be welcomed back at this year’s show, presenting visitors with technical talks, along with current industry topics and issues.

Show evolution has continued with crop production exhibits being joined by an ever-expanding range of post farm expertise. So, while growers will be catching up on everything from varieties to sprout suppression, factory staff will be exploring developments as diverse as water treatment, haulage and the very latest in optical sorting and whole crop utilisation.

The National Potato Industry Awards will be held at the Old Swan in Harrogate on the first evening of the show, Wednesday November 22nd.

To find out how to enter yourself or a nominee for the NPI Awards, visit **www.potatoreview.com/national-potato-industry-awards** or email Editor Stephanie Cornwall on **stephanie.cornwall@warnersgroup.co.uk**.

For more details on sponsorship packages or general information about the event, contact Hayley Comey. Email her at **hayleyc@warnersgroup.co.uk**.

CATEGORIES FOR THE 2023 AWARDS

INDIVIDUALS, companies and teams can be entered into one or more of the newly-launched award categories for 2023.

Some of the categories may feature more than one winner to account for different scales and criteria. **Please see individual categories for more details, and for further information contact Hayley Comey (Tel: +44 1778 392445 Email: hayleyc@warnersgroup.co.uk).**

The 10 award categories are as follows:

1. GROWER/GROWING MANAGER OF 2022-2223

We're looking for nominations for any grower, or Manager of a growing business, who has made a standout contribution to the potato industry, has overcome specific challenges that are worthy of applauding, or whose actions are deemed to be a good example to others in the industry.

This can include a specific growing method or plan, partnerships with research agencies, participation in projects or trials, contribution to their local community or the industry as a whole or long-term achievements

Anyone can make a nomination, and explain why they think this person is worthy of an award. It's also possible to self-nominate. We won't disclose where the recommendation came from.

2. BEST INNOVATION 2022-2223

CAN you tell us about a piece of agri-tech, a new research method, or a time-saving practice that's helping improve yield, profits or day-to-day practices?

We're keen to hear about any innovations that are already providing a positive impact within the potato supply chain or that could be a game-changer for the future.

If you, or someone you know, has come up with an innovation you feel has the potential to bring an improvement in terms of time-saving, cost-minimising, labour saving, sustainability or other goals, please let us know. It doesn't matter how small or large the innovation or investment is – we will judge on merit and potential and may announce more than one winner depending on the scale involved.

3. BEST ENVIRONMENTAL/ SUSTAINABILITY INITIATIVE

The NPIA2021 Environmental Award recognises outstanding individuals and organisations from any sector of the potato industry who've contributed in some way to the protection of the environment or sustainability.

Any grower, advisor or company demonstrating best practice or stewardship initiatives is eligible for the award, as well as companies and suppliers who have introduced a practice or product that has made a notable impact on environmental performance.

We want to hear about the greenest businesses, growers, advisors and suppliers so that we can recognise and reward change across all aspects of purpose-driven sustainability, social impact, the countryside or community.

4. BEST MARKETING WORK / BEST MARKETING CAMPAIGN 2022-2023

GOOD marketing is frequently taken for granted, but where would we be without those timely reminders, solutions and advisories that seem to pop up when they're most needed?

This award aims to reward the most effective marketing strategies, companies and people, showcasing the industry's most innovative and ground-breaking campaigns and the finest minds. If it's used for any of the following, we want to hear your recommendations

- Innovative packaging
- Novel branding
- New varieties
- Consumer influence
- Seasonal activities
- New-to-market products

Smaller campaigns/contributions: It's not just the bigger campaigns we're interested in. We're also looking to reward those who have also helped to build awareness of their own small business offerings, new-to-market products or, like last year's winner, helped to raise awareness through their own newsletter or website.

There may be more than one winner in this section, again dependent on the scale of the operation, so don't be humble – let us know if you think there is something that deserves recognition, be that a new/re-worked website, a catalogue or your own published photography.

5. MACHINERY AND IMPLEMENTS

MACHINERY that has simplified or improved field operations from cultivation and planting to irrigation and harvesting, as well those used for washing, handling, sorting, grading and transportation is a key contributor to the success of our UK potato industry, and the darling of all those looking to save time, improve quality and maximise profitability.

Can you recommend something that fits ANY ONE OR MORE of the following criteria: 1. New machinery introduced to the market since January 2021; 2. Machinery that has been upgraded with new features, over the past two years that has made a notable impact. What reasons and feedback can you give about its contribution to growers, suppliers, packers or retailers?

6. AGRONOMY

WE all know an agronomist who has gone above and beyond with their efforts and advice, whether it's been working with individual growers or part of a collaboration over the past two years.

Can you nominate someone you think deserves recognition for their efforts or achievements? Would you like to put yourself forward for something you are proud of and would like to share?

If so, let us know what you feel is noteworthy about this individual agronomist or agronomist's consultancy and why you think this nominee merits

special recognition by submitting an entry for the Agronomist Award in the 2021 National Potato Industry Awards.

7. HESCOTT-MEREDITH MEMORIAL AWARD

NAMED in memory of Potato Review's founding member, Bob Meredith, and his daughter Hazel Hescott, who sadly lost her battle with cancer last year, this award will be presented to an individual, group, or company who have provided a standout scientific contribution that will assist one or more sector of the potato industry. This can have resulted in one of the following: Sustainable growing; improved soil health; storage longevity; prolonged life or resilience within retail/transport; variety resilience.

8. BEST YOUNG ACHIEVER

This award seeks to recognise the best and brightest young people already working within the potato industry, as those leaving college and university who have already demonstrated that they have made, or can make, a significant contribution to their chosen career within potato supply. Open to those aged 16 to 30, this award could be made to any of the following:

- Someone who has already made a contribution to research or agtech as a student
- Someone who has entered the industry as an apprentice/trainee
- Someone who has directly embarked on a role and is making positive changes

Dependant on the number and variety of entries, there may be more than one award in this category.

9. STORAGE/ REFRIGERATION ACHIEVER

With energy costs a key concern for businesses and consumers alike, 'keeping your cool' while crops are in store has never been more challenging. Add to that the loss of chemical solutions that prolong the lifespan of potatoes, and it's a year where perhaps one of the potato industry's biggest battles lies within storage.

- Who has made the biggest impact in this area?
- What have they done to keep down costs?
- How have they helped to prolong the life of tubers?
- Is there some other way in which they have contributed to this part of the potato's journey?

Let us know who you feel is the biggest achiever in this category.

10. BRITISH POTATO INDUSTRY AWARD

The British Potato Industry Award is for outstanding contribution to the potato sector, in effect a lifetime's achievement. It was inaugurated in 1997 and has been awarded annually. It was originally administered by the British Potato Council and subsequently by the Potato sector of AHDB, before being incorporated within the National Potato Industry Awards run by Potato Review. PR

The 2021 winners:

2021 Agronomy Award Winner: Jeff Beever

2021 Environmental Award Winner: AH Worth

2021 Grower Award Winner: AR & SA White

2021 Innovation Award Winner: Restrain Company Limited

2021 Machinery Award Winner: GRIMME UK Ltd - VARITRON 470

2021 Marketing Award winner: Isle of Ely Produce/Chippy Chat

Volatile biomarkers and early detection

Potato disease project enters final stage, with further insights to be gained from gas sensing in stored crop.

A NEW root crop disease technology has entered its final stage of testing ahead of being brought to market.

TuberSense is a cross collaborative effort from agri-tech business B-hive Innovations, with partners including UWE Bristol, the James Hutton Institute, University of Warwick, Altered Carbon and potato producer Branston.

Future Leaders Fellow Dr Barbara Correia has been conducting the first phase of research, development and testing to develop gas sensors that can use volatile biomarkers as means of detecting crop diseases and defects, which can cripple potato supply chains, including soft rot, dry rot and black heart in potato tubers.

Barbara secured funding from UK Research and Innovation (UKRI) in Summer 2021. Potato producer Branston Ltd and various research institutions are also partnering on the project.

Barbara's initial research to define the link between potato diseases and volatile compounds released by the tubers was carried out with UWE Bristol and the James Hutton Institute, while the University of Warwick has partnered on the project to develop gas sensors to measure the gases produced.

Following a series of first-phase trials, the R&D sensing system has now been developed to use volatile biomarkers as means of detecting crop diseases and defects that can cripple potato supply chains, including soft rot, dry rot and black heart in potato tubers.

Barbara said: "The first phase of our research has provided us with tremendous novel insights into the range of diseases and defects that, unless detected early, can enormously compromise the overall quality of the crop that enters the supply chain.

"Through the first project phase, we have gained a great understanding of which diseases are most distinguishable through the use of gas sensing technologies.

"Conversely, we have also become more aware of which defects may not be detectable through such means, which already gets us thinking of other ways that we might detect those defects at an early stage."

To ensure optimal testing conditions, Barbara and the team have been conducting experiments using a mix of field testing with growers alongside semi-controlled trials, including the use of industrial shipping containers.

The team has also shipped a TuberSense system to a sweet potato supplier in North America for further testing, as the project looks to expand the breadth of crop the technology can be compatible with. Sweet potatoes can be even more susceptible to disease and defects, especially considering long shipping times, and therefore there is a higher rate of crop wastage.

To better understand the demand from growers, the research team embarked on a 12-week Scaling the Edge project funded by with UKRI. Three quarters of the growers faced disease and defect problems with their crop, and the majority of these are keen that a gas sensing system for early detection is made available.

With the first phase of the project now nearly completed, the team is starting to develop the second iteration to feature an improved gas sensor, with aims to commence testing with units by the end of the year.

Barbara said: "Research and development combined with market research has made it clear that growers and packers of root crops require greater insights into disease and defect detection at the earliest point possible.

"While we have made some great breakthroughs during the first phase of the project, we have a lot of confidence from our ongoing analysis to trial a 2.0 iteration - that will extract even more insights into using volatile markers for gas sensing in stored crop.

"By undertaking detailed data analysis, we believe that we can detect some tuber diseases and defects more accurately through further refinements to the underlying technology, and we are working through making those changes.

"We are also exploring technology from other partners. This includes graphene-based sensors from Altered Carbon, who we have partnered with recently, alongside our own bespoke sensor array to see how much we can push the limits of sensitivity of the system.

"By the end of the project, we want to be in a position where our findings can inform the production of commercial detection systems for the industry."

If you would like to support the project, the TuberSense team is asking different players of the fresh potato industry to contribute with their views by filling in a questionnaire which takes between five and 10 minutes to complete. More details are on the *Potato Review* website. PR

"We have a lot of confidence from our ongoing analysis to trial a 2.0 iteration - that will extract even more insights into using volatile markers."

Dr Barbara Correia, Future Leaders Fellow

Supply chain collaboration in quest for Net Zero

Mark Willcox, Technical Director at Branston and GB Potatoes board member, explains the rationale of Branston's Net Zero project and talks us through what's going on in the trial fields this year.

Branston Ltd is leading a £2.2m Innovate UK funded project, now in its second year of three, working with project partners to examine the potential for reducing carbon emissions in potato production.

We're working in partnership with B-hive Innovations, Crop Systems Ltd, The University of Lincoln, David Armstrong Farms and Arbikie Farms. These are the industry experts in each area and we're focussing on the three key areas of emissions in growing ware potato crops: Nitrogen based fertiliser, storage, and transport.

We've established trial fields at David Armstrong Farms near Bardney and Arbikie Highland Estate in order to focus on optimising crop nutrition. Nitrogen fertiliser is an essential element in growing a crop of potatoes, but it also makes up a significant part of the potato carbon footprint.

As with most other conventional field crops, a good dose of fertiliser is needed to encourage plant growth and boost production. We are looking at the potential to reduce reliance on synthetic fertilisers through a range of different trials, including using more organically derived, lower carbon fertiliser made using food waste by-products, as well as the potential for reducing fertiliser inputs and recycling nutrition in the field.

In both trial fields, we've established a base-line plot with no nitrogen applied. Then we've set up further plots with varying levels of nitrogen application, both from conventional and from novel sources. We're already noticing differences in the colour and vigour of the canopies, and it will be interesting to see what variation we get in yield at harvest.

We're also assessing how much we can feed through the leaf as the crop is growing. R-leaf is a new technology which has the potential to change the way we think about crop nutrition. Developed by Crop Intellect, the photosynthetic catalyst is sprayed onto the leaf and in the presence of sunlight turns atmospheric NOx gases such as nitrous oxide (N2O), nitric oxide (NO) and nitrogen dioxide (NO2), into nitrate that can be used by the plant. R-leaf could enable growers to reduce the fertiliser application at planting knowing that they can top up through the growing season.

To work out what the plants need as they grow, we're evaluating a new system from Piketa, which will give in-field, real-time nutrient analysis via the leaves. This has the potential to save the cost of lab analysis and allow growers to respond immediately by feeding the crop what it needs when it needs it.

The carbon footprint of producing synthetic nitrogen fertiliser is already well documented. What we're particularly interested in for the Net Zero project is what happens as the crop grows and the fertiliser breaks down in the soil. On this project we're working closely with the University of Lincoln looking at soil health and gaseous emissions at field scale throughout the growing season.

Nitrous oxide is released from the soil as synthetic nitrogen-based fertiliser is broken down. The University of Lincoln is measuring this important greenhouse gas throughout the growing season as well as collecting and analysing the CO2 and other gases that are released from the soil, across the fertiliser trial and the range of different types of cultivations that are also part of the Net Zero field trial. This type of analysis has never been undertaken at such scale, so we are very interested in seeing what they can find out.

The University of Lincoln team is also analysing soil health in the field, before, during and following the potato crop. Analysis of the soil structure first took place before the preceding cover crop was ploughed in prior to planting, with nutrients and levels of beneficial microorganisms being assessed throughout.

As well as the differing fertiliser treatments, the trial is assessing the potential of reduced tillage planting, growing under straw and 'flat growing', where the seed tuber was planted in a bore hole. We're looking forward to fully assessing these methods at harvest time.

Different potato varieties may also play an important role in reducing the carbon footprint of production. New varieties from plant breeders are being assessed to see which ones can perform at low levels of nitrogen and can produce a quality, high yielding crop with reduced irrigation and potentially lower quality land.

While much of the work that is being undertaken is around reducing inputs, the team is well aware that yield and quality are still very important. Any reductions that lower the marketable yield could necessitate an increase in other inputs and be detrimental to the overall carbon footprint. We're looking at ways to get the balance right for truly sustainable potato production.

Collaboration really is key as the potato industry looks to achieve ambitious net zero targets. A "business as usual" approach isn't going to cut it anymore, and the responsibility rests across everyone involved to find solutions. We believe this project has the potential to step-change the entire potato industry and has wide-reaching impacts that will help us reduce our environmental impacts across the whole supply chain.

UK potato production is at a real crossroads with cost of production, loss of chemicals and climate change being just three of the issues to deal with.

Our industry needs a strong voice into government, dealing with emerging issues and sharing best practice across all areas of the supply chain. GB Potatoes is already listening to growers on where to prioritise the effort, actively engaging government in stewardship programmes in return for a managed decline in chemicals, and helping to shape the transition to lower carbon potato growing. Branston is pleased to be a part of that. PR

Up close and personal

Open days and trials give visitors a chance to check out varieties and strategies first-hand.

GROWERS and suppliers to the potato trade have been able to check out latest varieties, trial results and new strategies at recent open days.

First up was crop product specialist Hutchinsons' potato demonstration and trial, held in conjunction with Worths Farms and Simon Faulkner of SDF Agriculture Ltd.

Ongoing development in potato crops was examined at the new site near Spalding. The aim of the site was to look at issues that not only affect potato growers on the Lincolnshire silts, but are common to growers across a range of soil types.

As with the very successful Fen Trials site run in conjunction with A.L. Lee at Ely, the new site looked at new varieties and their tolerance and resistance to PCN and what to use for weed control in the same varieties.

Alternative nutritional strategies were also investigated and their effect on the Nitrogen Use Efficiency (NUE) and carbon footprint of potatoes.

Another topic under investigation was wireworm, long regarded as a pest of potatoes grown in grass rotations, but now an increasing problem across all rotations. UK experts were on hand to discuss growers' concerns on the day, while making recommendations on management and biological control

The effect of cover crops on free living nematodes, post emergence herbicide trials, in-furrow nutrition treatments, variety selection, PCN trials and soil management advice were also key topics discussed on the open day, where two-hour tours took place in the morning and afternoon.

The recent Whole Crop Marketing (WCM) annual trials event featured 69 small trial plots on display this year, with 12 seed breeders from across the UK showcasing their varieties.

Several fertiliser companies demonstrated their fertiliser, micro-nutrients and bio-stimulant products on their own plots and machinery manufacturer Grimme hosted two live harvesting demonstrations throughout the day on the large plots.

The team behind HarvestEye also showcased the latest iteration of its machine learning-led crop insights tool, with subscription, rental and lease options now available for growers.

After launching in February, HarvestEye 2.0 fits to harvesting or grading equipment and offers a cost-effective method to deliver visibility on the size, shape and mapping variability of root crops as they are lifted (for further details, turn to our agtech section on page 54).

The UK Potato Breeders held a Breeders Demo Day at Heath Lane, Caythorpe, near Grantham at the end of August.

Previously the Breeders Days have been held across two sites, Caythorpe and Coldham. However, this year for the first time, all 10 breeders came together to exhibit on one site.

There were various trials, as well as new varieties on display, from breeders including HZPC, Meijer, Solana, IPM, Germicopa, Grampian Growers, Caledonia, Agrico, Stet, Cygnet PB and Cullen Allen. PR

Building resilience

Potatoes in Practice helps prepare industry for future challenges.

The UK's largest field-based potato event, Potatoes in Practice, attracted more than 600 potato farmers and representatives from across the sector.

Held at one of James Hutton Institute's research farms near Dundee in August, the Institute hosted the event in collaboration with Scotland's Rural College (SRUC) and Agrii.

A key date in the industry calendar, this year's gathering focused on the theme of 'Using Evidence to Build Resistance for Potato Crop Production', with information sessions and talks highlighting the importance of evidence-based practices to help potato farmers overcome the challenges they face.

Prominent speakers from across the industry shared their expertise with a series of talks throughout the day, including Patrick Hughes from SAOS, Nick Winmill and Graham Tomlin from Agrii, alongside the newly-appointed director of the National Potato Innovation Centre, Ian Toth.

The Potatoes in Practice event also included a showcase of the latest innovations and emerging trends together with commercial breeders presenting new varieties of potatoes and agronomists demonstrating the advancements in crop protection. Researchers were in attendance to discuss their most recent findings and offer visitors the opportunity to access a wealth of scientific knowledge and expertise.

Ian Toth said the event was a great opportunity to bring people from across the sector together to discuss the challenges and opportunities it is facing.

"It highlights even more the need for the National Potato Innovation Centre in order that we increase collaboration between research and industry on a domestic and international scale, work together to address the big issues surrounding potato production and exploit combined expertise."

Nick Winmill, Technical, Research & Development Manager (Potatoes) from Agrii added: "For Agrii, Potatoes in Practice serves to support our core function as a research and trials-led advisory service for British agriculture. It provides an excellent opportunity to share the focus of our work with both customers and suppliers while enabling us to demonstrate our commitment to sustaining the sector through collaborative activities such as the Potato Partnership and our desire to equip producers with the tools and understanding needed to ensure their future success."

SAC's Senior Potato Consultant, Dr Kyron Maloney highlighted concerns that the industry is at a crossroads with managing aphid-borne potato viruses.

"Climate change, insecticide losses and an increasing acreage of ware potatoes are all combining to drive risk ever higher. The IPM (Integrated Pest Management) tools demonstrated at PiP have become a vital part of aphid and virus control for seed growers, but there is a knowledge gap for how to deploy measures effectively and we will work with growers and industry going forward to identify solutions and drive best practice," he said.

Insights

Part of the James Hutton Institute's strategy to help address the issues that potato faces in dealing with the climate and nature crises is the setting up of a National Potato Innovation Centre (NPIC).

Based at the institute near Dundee, a host of work is underway at the NPIC to understand and develop new solutions for the future of potato breeding and growing and some of this work was showcased at Potatoes in Practice.

With expertise including genetics and breeding, crop physiology and management, crop storage, climate change resilience, integrated pest management coupled with close ties with the industry and a collaborative approach to research, the work is poised for significant discoveries.

Whilst still at a conceptual stage, the hope is to raise significant funding to establish a base where the science that's required can be fast-tracked to help with alleviating the practical barriers faced by the industry.

Insights tool demonstrated

The latest iteration of a machine learning-led insights tool, which delivers visibility on the size, shape and mapping variability of root crops as they are lifted, was demonstrated by HarvestEye.

Head of Machine Learning at HarvestEye, Dr Mercedes Torres Torres, said: "Potatoes in Practice offered us a unique opportunity to connect with a wide variety of attendees from across the UK arable industry. We discussed with growers the evolving landscape of agri-tech and presented demonstration units to show how HarvestEye can increase visibility of their crop.

"It also allowed us to interact with growers who actively use our system to hear more about their opinions and experiences. We shared insights about our recent system upgrades included in the 2.0 iteration and gathered useful recommendations that will help inform future product development."

Cover crop demonstrations

Frontier Agriculture and Kings Crops discussed the latest seed treatment solutions and demonstrated cover crops designed to support potato rotations.

Technical advisors showed how a diverse range of crops can support soil health and integrated pest management (IPM). The mixes on display included: Tataricum buckwheat, non-brassica headland mix, Pratex oat/ Defender mix, Defender oil radish, Bento oil radish, Angus oil radish, Sunday oil radish and a bio-fumigation mix. PR

‘Excellence through collaboration’

We catch up with the team at the National Potato Innovation Centre in Dundee to see how science is shaping the potato’s future global role.

A HOST of work is underway at the National Potato Innovation Centre based at the James Hutton Institute near Dundee in Scotland to understand and develop new solutions for the future of potato breeding and growing.

Since first introduced to the world from South America, potatoes have fuelled the industrial revolution and lifted millions out of food poverty. The loss of the potato harvest in the 19th Century to potato blight disease precipitated mass migration from Ireland and Scotland to the north Americas and beyond.

It’s clear that potato has already had a major impact on world history, and together with the cutting-edge science on how we produce them now and in the future, Scottish researchers are confident they will continue to do so.

With expertise including genetics and breeding, crop physiology and management, crop storage, climate change resilience, integrated pest management coupled with close ties with the industry and a collaborative approach to research, the work is poised for significant discoveries.

Some of this work was showcased at the recent Potatoes in Practice event (see page 20).

Beyond industry engagement, the Institute also houses several centres for research excellence, including the Advanced Plant Growth Centre (APGC) funded through investment from the Tay Cities Region Deal.

The APGC is one research centre aimed at testing and implementing new advanced technology used to understand crop production and storage. It aims for there to be a global rethink on our relationship with food, from how it is produced to how it affects nature. This includes looking at how to:

- Grow and manufacture a more diverse range of quality food locally all year-round.
- Reduce the need for imports.
- Develop simpler supply chains less prone to shocks.
- Create ways of reducing our consumption of natural resources and feeding ourselves while improving our environment.

Director at the APCG, Professor Derek Stewart, said: “The food industry accounts for nearly a third of the world’s greenhouse gas emissions, making it one of the largest contributors to climate change, and potato –the world’s third largest food crop, grown on every arable continent – is an important part of this.”

When it comes to researching potato crops specifically, the centre’s four areas will be used including crop storage testing, controlled environment (CE) systems which can precisely simulate future climate conditions, vertical farming and automated crop phenotyping using a series of cameras and sensors to understand the nuances within each breed of plant.

Bulit on these principles, it embodies the idea of Agriculture 4.0, a green revolution with science and technology at its heart, and the aim of feeding future populations.

Deputy Director at the APGC Rob Hancock said: “If we are to breed new crop varieties, including potato, which are better adapted to new growing environments and processes, such as regenerative agriculture and reducing the demands for water, nutrients and the many disease treatments, then we need state of the art facilities as well as expertise from others in the field.

“Through the controlled environment systems, we can precisely control the growing conditions. We will be able to “dial in” future climate scenarios to study how current varieties fair within the new environments of higher temperatures, flooding and droughting and increased or new disease threats.

“The impact of this will be a much stronger understanding of how crops will cope in future climate conditions and highlight the potentially significant genetic components desirable to industry.”

This is where the institute's global-leading asset, the Commonwealth Potato Collection – a renowned collection of 1,500 different varieties of potato - comes in.

Scotland is famous for having some of the highest quality seed potatoes in the world, so when it comes to knowledge of science, industry, growers and breeding, it can use this collection in its aim to address the issues that potato faces in dealing with the climate and nature crises.

Part of its strategy in dealing with the plight of the potato is the setting up of the National Potato Innovation Centre (NPIC) at its Invergowrie site.

Professor Ian Toth is the newly-appointed director of the NPIC which at present is conceptual, but the hope is to raise significant funding to establish the centre where the science that is required can be fast-tracked to help with alleviating the practical barriers faced by the potato industry.

"Potato production is increasingly at risk from the removal of weed, pest and disease control chemicals, shortages of fertilisers and the impacts of climate change, and there is an ever-increasing need to produce tubers more sustainably," Ian said.

"It is essential growers are supported to operate an economically viable trade in line with sustainable agriculture, but also that consumers are able to continue to buy the same tasting, much-loved potatoes, so it's a question of how we do both."

The research facility – having several times contributed new seeds to The Svalbard Global Seed Vault, in Denmark – contains a wealth of genetic material which could contain varieties able to help to resolve many of the risks being faced.

The NPIC will exploit new breeding techniques to mine genes from the collection and move them into breeding material, potentially halving the time it takes to breed a new potato variety.

"There are many hundreds of plants and millions of genes to explore in our Commonwealth Potato Collection, we have only scratched the surface of the opportunity in front of us."

Professor Ian Toth, Director, NPIC

As a trusted partner of potato industry and academic institutions across the world, the centre will also leverage its network to coordinate and lead research projects internationally. One example of this coordination can already be seen with work on potato phenotyping and creation of the 'quickgro' potato varieties.

Phenotyping is the process of assessing the expressed traits of a plant such as its growth, heat tolerance, disease and pest resistance, and yield. A plant's phenotypes are influenced by its genetic make-up and changes in its environment, which in the face of challenges to food security and climate change is an important field of research.

Using a controlled environment approach, researchers simulated hotter and dryer growing conditions then assessed the resulting crop and identified new key processes and genes underpinning responses to heat and drought.

Specifically, the researchers discovered that a gene which encodes a heat stress protein - produced in response to stressful conditions like heat and drought – is also associated with protecting crop yield.

Through this understanding they were able to experimentally engineer yield protection by altering the upstream region of the gene and identify natural variants of the gene which were better adapted to warmer and drier environments.

Using international partners and industry knowledge, this knowledge has been used to develop five new varieties of potato specially designed to cope with warmer temperatures, and which are disease and pest resistant. They have been approved for commercial release in Malawi and Kenya under the brand names Chikoka, Tinyadile, Chitute, Khuthula, and Phindu, areas where farmers produce potatoes continuously on the same land which has resulted in soil degradation and deforestation due to limited land availability.

Executive Director of science at the James Hutton Institute, Lesley Torrance, who has led the research project, said: "The immediate impact of sub-Saharan countries having an early maturing, more tolerant potato crop is that potato farming can be expanded to non-traditional potato growing areas."

Alongside avoiding the problems associated with erratic rainfall or droughts, the new crops also produce tubers quicker than traditional varieties - under 80 days rather than 100 to 120 days.

Looking to the future, new technology and facilities such as sensor and camera-based systems will be employed to characterise crop development and traits, which will improve the precision of the assessment, says Rob Hancock.

"How a crop grows underpins its yield and quality. By having a more objective, quantitative, and detailed analysis of our potato plant populations it will make a big different in our ability to conduct trails and breeding.

"With closer detail on the desirable traits of crops we can feed more information into genomics and so many of these observations will form the bases for other research into the type of traits we can and should be breeding for."

Ian pointed out that plant-based proteins are becoming more desirable as a replacement for meat proteins, and potato proteins are already seen as a viable alternative worth around £800 million globally.

For example, the green stem of the potato plant, which is currently a waste product, can also be a source of useful and even valuable compounds, such as Solanesol - used in the manufacture of coenzyme Q10, important to medicine and the beauty industry.

"Such products could be as or even more valuable than the tubers themselves and, importantly, need little effort to optimise these products so when there are many hundreds of plants and millions of genes to explore in our Commonwealth Potato Collection, we have only scratched the surface of the opportunity in front of us." PR

Professor Ian Toth is the newly-appointed director of the NPIC

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GROWING TOGETHER

Fight rising Alternaria risks

Wet seedbeds and prolonged heat periods increase risks this season. Syngenta specialist **Andy Cunningham** offers his advice.

CLIMATIC weather patterns and this year's challenging potato season have significantly increased the risks of Alternaria.

Historically infections have been identified from mid to late July, but have already been reported this season, with instances of serious plant die-back.

Crops that were slow to establish in cold, wet seedbeds, after late planting, have subsequently been hit by prolonged periods of damaging high heat and light stress, along with many growers cutting back on expensive fertiliser inputs.

These have all compounded the risk of stresses that make potatoes more susceptible to Alternaria infection, advised Syngenta Technical Manager, Andy Cunningham.

Furthermore, a reduction in mancozeb availability and less use in extended blight programmes during the dry weather has enabled Alternaria to gain a foothold in some crops.

"That further exacerbates the issues of spore production and spread across fields and between crops," Andy said. Growers and agronomists should be thinking of including a fungicide such as Amphore Plus, a co-formulation of difenoconazole and mandipropamid, in their blight strategies now to target Alternaria, he said, and advised one or two sprays earlier in the programme than would be the case in a normal season.

Successive years of a Syngenta Alternaria monitoring initiative, with sampling and analysis by NIAB, had highlighted the consistent

presence of multiple Alternaria species spores throughout the crop growing cycle.

However, it was consistently the most prolific A. alternata that was identified infecting potato leaves earliest in the season, followed by the larger lesions of A. solani becoming more prevalent later – frequently on the back of damage caused by earlier A. alternata infection.

"That was a really important finding, which was contrary to potato industry thinking at the time," said Andy.

He said this reinforced the importance of using a fungicide early in the alternaria strategy, and said Amphore Plus provides the "highest possible" loading of difenoconazole, that has proven more active on A. alternata than other options, as well as being effective against A. solani.

"It also means potatoes are getting the blight protection of the full rate of mandipropamid in the same application," Andy said.

Later in the season, agronomists can switch to including a broad spectrum systemic fungicide such as Amistar in the blight spray programme for Alternaria protection against the later infecting A. solani, he advised.

Andy highlighted that any fungicide treatment must be applied preventatively for Alternaria. "However, if you catch infection early, or when just a limited number of plants in the crop have been affected, the clean plants can still be effectively protected," he said.

He also advocated that managing potato crops to make them more resilient to stress will help better cope with the impact of an Alternaria attack. That could be through mitigating heat stress using Quantis, nutrient stress with fertiliser, or drought stress with irrigation.

"The pressures of stress on potato crops have been increasing year on year, which raises the risk of more significant Alternaria outbreaks.

"Along with increasingly scarce water resources, coupled with the climate patterns of prolonged hot, dry periods, growers could look to a new generation of bioproducts to optimise use of resources and reduce stress on plants, as well as adapting fungicide strategies to incorporate the most effective Alternaria protection." PR

"When outbreaks are found in the field, the priority must be to clear these up and stop them spreading as soon as possible."

Geoff Hailstone, Technical Expert, UPL

Don't fret over wet

Advice offered on tackling potato blight outbreaks following the wettest July since 2009.

Geoff Hailstone said the priority must be to clear up field outbreaks and stop them spreading.

OUTBREAKS of late blight are springing up in potato crops across the country following an unusually wet July and early August.

Fortunately, EU_43_A1 has yet to be found in the samples analysed, but growers must remain vigilant.

According to the Met Office, the UK had 170% of its usual July rainfall, making it the wettest July since 2009 and the sixth on record. Predictably, this has led to a significant rise in blight outbreaks nationwide.

The Fight Against Blight monitoring service, run by the James Hutton Institute and enabled by industry sponsors UPL Ltd, BASF, Bayer, Certis Belchim, Corteva, Syngenta, Agrii, Agrovista, FMC, Frontier, GB Potatoes, McCain, Scottish Agronomy, Seed Potato Organisation, Agrico and Branston, has reported 120 crop outbreaks to the middle of August.

This puts 2023 on track to be a high-pressure year alongside 2019, 2012 and 2007. The outbreaks are spread around all potato-growing regions, with typically drier areas like East Anglia having no respite.

Research Leader at the James Hutton Institute, Dr David Cooke, said: "It has been a challenge to keep on top of the samples coming into the lab. We receive samples of fresh lesions, isolate and characterise the sample. We also do DNA analysis on what we receive. The aim is to spot any changes in the blight population as the season progresses so that spray programmes can be adapted based on the present genotypes.

"EU_43_A1 is our big concern because it is resistant to the carboxylic acid amide (CAA) group of fungicides, which includes mandipropamid. The key finding from our work so far this season is that we have not yet found it. We plan to conduct fungicide sensitivity testing on the 2023 isolates in the coming weeks".

Even though EU_43_A1 has not yet been found this season, that does not mean the blight risk is low because 36_A2 is one of the dominant strains, David cautioned. It has been present for a few years and is very aggressive, which poses challenges if it takes hold in a crop.

"Trying to firefight blight is very difficult, but the chemistry must continue to be used wisely, especially concerning the longer-term risk of EU_43_A1. We do not want other actives struggling under high pressure being misused. It is tempting for growers to keep using the products that will give them the best control, but they must use a range of fungicides.

"The good news is that the canopy has finished growing, so at least when a fungicide is applied, it protects all the leaves for a period. I would encourage growers to keep an eye on the lower canopy to ensure there is no residual amount of blight there. This could be the case following frequent heavy rainfall, which will spread the disease down the canopy," advises David.

The worry is that the conditions have also suited tuber infection from any foliar blight established in the crop. Lower temperatures will encourage the production of zoospores, and combined with soil moisture, there is a high risk that if foliar blight remains unchecked, it will quickly become an issue in the soil.

UPL's potato Technical Expert, Geoff Hailstone, said growers should now be mid-way

David Cooke warned that frequent heavy rainfall will spread disease down the canopy.

through blight programmes with most crops at the canopy complete stage. "When outbreaks are found in the field, the priority must be to clear these up and stop them spreading as soon as possible. Where this is the case, Proxanil (cymoxanil + propamocarb) should be included in a tank mix," he said.

"Cymoxanil is known to be one of the few actives with kickback activity and has a very low risk of developing resistance. Propamocarb has strong anti-sporulant activity, good movement in the plant and is only active in the carbamate resistance group.

"When tank-mixed with a protectant fungicide such as cyazofamid, Proxanil strengthens the activity and gives excellent resistance management. Where blight appears in the crop, there should ideally be two closely timed sprays, but growers must ensure that label intervals are adhered to."

"It has been a challenge to keep on top of the samples coming into the lab."

Dr David Cooke, Research Leader, James Hutton Institute

If foliar blight is active in the canopy, especially if conditions are favourable for zoospore production, then the risk of resistance developing can be particularly high. Geoff said he would recommend continuing to include mancozeb for resistance management and to protect uninfected leaves.

Although mancozeb only has protectant activity, it still has a role in controlling outbreaks when mixed with curative products. Mancozeb is sold as a straight product in Manzate 75WG or formulated with cymoxanil in Nautile DG (cymoxanil + mancozeb).

"Hopefully, the weather turns more settled until harvest, and growers can keep on top of disease in their potato crops, but they must maintain blight programmes until the foliage and stems are dead. Where a grower knows that foliar blight has been present in the crop, they should study the susceptibility to tuber blight of the variety they are growing and prioritise harvest accordingly," Geoff said. PR

SCHOOLS FOCUS:
Grow your own

Primary pupils harvest

Peterborough schools become potato farmers with Kids Country.

MORE than 100 children from Peterborough schools – Newark Hill Academy, Orton Wistow Primary School, and William Law CE Primary School – have harvested their potato crops this month, a school project that they began with Kids Country back in April.

Supported by Burgess Farms and Co-op Central England, Kids Country – the East of England Agricultural Society's education outreach – helped the children, in Key Stage 1 & 2, to plant their new potatoes in the Spring, providing them with advice on how to look after their plants over the coming months.

With prizes for the biggest harvest at each school, the winners were: Newark Hill Academy – Theo – 255g; Orton Wistow Primary School – Mantas – 454g; William Law CE Primary School – Sophia – 207g.

As well as the all-important harvest, children also had the opportunity to taste some potato products, including potato salad donated by Co-op Central England, helping to complete that field-to-fork journey, before taking their potatoes home to eat with their families.

Melissa Goodman from Burgess Farms said: "It is great to help support the education of young children to provide the experience of growing their own potatoes and understand the positive health benefits. Showing how fun it is to grow your own produce with the hands-on activity and the excitement from the children to see their very own potatoes they had grown was wonderful to see.

"This event is an essential initiative which helps build the knowledge of growing produce for our next generation, of which we are extremely proud to be a part of."

Laura Tompson-Wright, Key Stage 1 teacher at William Law CE Primary School, said:

"We think that children learn best when education is delivered in a hands-on and imaginative way, and of course food, farming and countryside topics lend themselves so well to that."

"It was great to link the activity to our science curriculum objectives, observing closely the key features of plants to identify the plant correctly and describe how to care for it. We are looking forward to next year!"

Kids Country Education Manager, Sandra Lauridsen, said: "It is always rewarding to see the look of amazement on children's faces when they tip their pot up and see how many potatoes they have successfully grown! It is also great to hear back from teachers how events delivered by Kids Country can support existing curriculum topics, including science and maths."

She encouraged other primary schools in Bedfordshire, Cambridgeshire, Lincolnshire, Northamptonshire and Rutland to get in touch if they would like the organisation's support for the coming 2023-24 school year.

As well as the potato harvesting events, Kids Country also visited St Botolph's C of E Primary School, Peterborough, to deliver a school talk on growing wheat, with local farmer Peter Sharpley, Thornhaugh, going along with Sandra to help children learn about how wheat is taken from seed through to the cereal and bread that children eat daily.

Teacher Katie Dobson said: "As part of our Science curriculum, Year 2 learn that some plants are grown for food. We talk about the crops that farmers grow in the UK and then what happens to them after they are harvested. We wanted to develop the children's understanding of this further by listening to a local farmer to find out how the whole process works and what crops are grown locally to us."

Kids Country's Sandra said: "We are set-up to bring our activities into schools, so there is no need for schools to worry about arranging transport. We think that children learn best when education is delivered in a hands-on and imaginative way, and of course food, farming and countryside topics lend themselves so well to that."

Kids Country works with thousands of primary school children every year to being food, farming and countryside learning directly into the classroom and playground, and if you think a primary school could benefit from an activity delivered directly into school, please contact slauridsen@eastofengland.org.uk.

To keep up to date with upcoming Kids Country events, visit kids-country.co.uk or follow Kids Country UK on Facebook, twitter, Instagram or LinkedIn. PR

SCHOOLS FOCUS:
Grow your own

Tatties for Turriff!

Pupils roll up their sleeves to plant potatoes for show.

FORMER Turriff Show President and grower, Graeme Mackie visited Monquhitter Primary School in the Aberdeenshire parish of Turriff recently, where he met pupils from the school's Friday Eco-group to plant potatoes in time to harvest at 2023's two-day northeast Turriff agricultural Show, which took place at the end of July.

The potatoes were harvested on both days of the show and used to create dishes by chef Catriona Frankitti.

Catriona hosted chefs and Scottish produce in Turriff Show's cookery theatre this year, as part of the EQ Food and Drink marquee exhibition.

Graeme, from Little Hilton Farm, said: "Rolling up their sleeves to plant, care for and watch their food grow gives the children a sense of pride in their work and an enhanced appreciation for the food on their plates. Being actively involved in growing food, demonstrates the work and time farmers put into yielding a crop, making food all that more valuable."

Monquhitter Primary School already has its own polytunnel growing strawberries, mixed salad leaves, onions, carrots, peas, broad beans, and radishes. Each year-group oversees a raised bed and together, parents, teachers and students get stuck in to 'plant care'.

Primary Teacher Miss Garven said: "Sustainability is a huge part of our curriculum. Many students learn by doing rather than watching. Growing food of their own motivates children to be more aware of the benefits of eating nutritious foods and encourages them to eat a fruit or vegetable that they may not have tried before."

Graeme talked to the children about planting and harvesting, as they planted the Charlotte variety, a salad type with a buttery flavour and versatility for many meals. The group of students got straight to work, carting soil from the trailer and into their individual tubs. Recycling empty livestock feed and mineral tubs, Graeme and the children planted the potatoes and levelled off the soil.

"Some children head to the supermarket with mum and dad and that's where they believe food comes from. It is hugely important for all those involved in agriculture to pass on their knowledge to the younger generation. We are responsible for filling that missing link between farm and supermarket," Graeme said.

The children helped to carry the tubs back into the trailer and gave Graeme a tour of the polytunnel and raised beds.

Once their produce is ready to harvest, the children dig it up and hand to the school kitchen to prepare and be used for school dinners. PR

"It is hugely important for all those involved in agriculture to pass on their knowledge to the younger generation."

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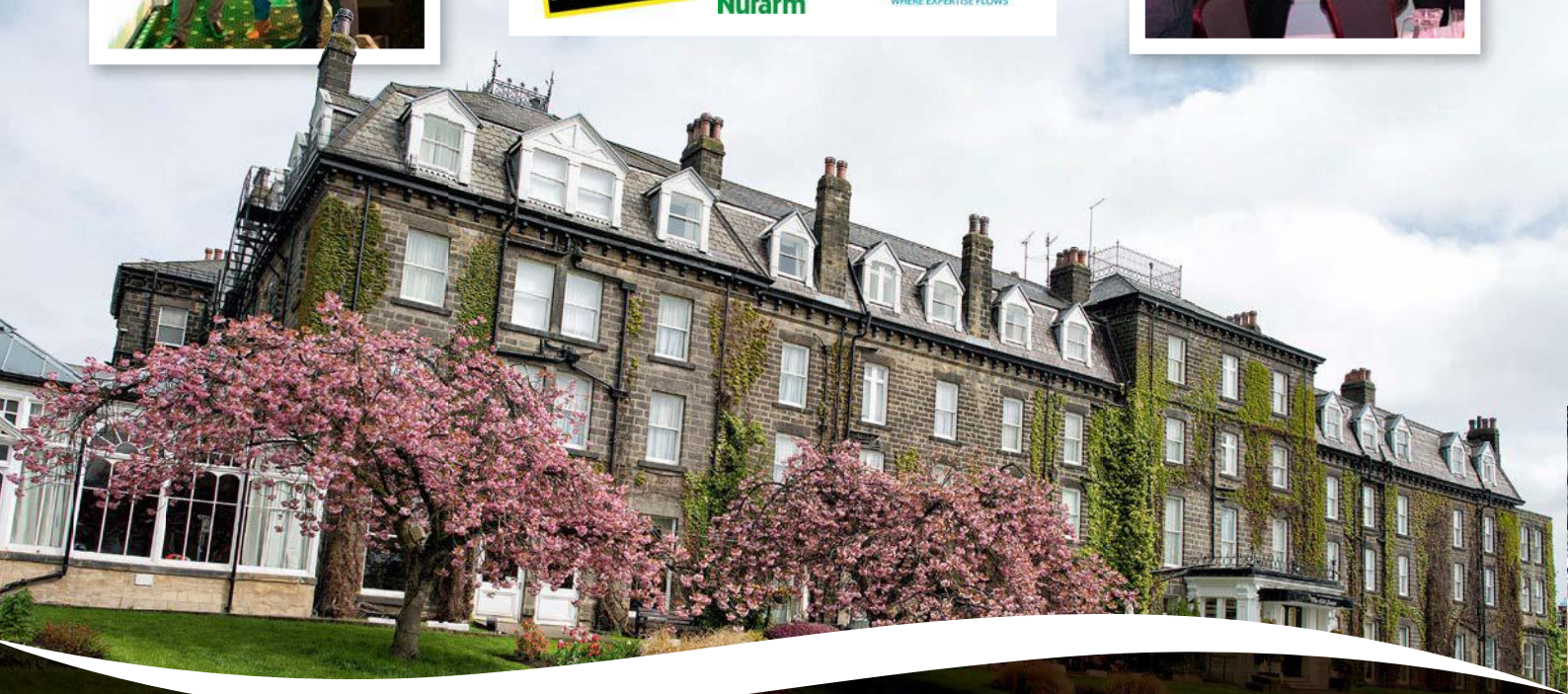

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SCHOOLS FOCUS: *Grow your own*

Project sets a record

2,000 school pupils involved in this year's Potato Project in Perth and Kinross.

AN annual potato growing and harvesting competition in Perth and Kinross attracted record numbers of participants this year.

The Royal Highland Education Trust (RHET), was set up to teach children about food and farming to create a more "food literate" generation and has 13 countryside initiatives across Scotland, each run by a committee of volunteers. This year the Potato Project, held by its Perth and Kinross branch, attracted 2,000 school pupils.

RHET P & K Co-ordinator Tara Clark enrolled 104 classes from primary schools throughout the region.

She said: "We have had great support from the teachers who are all very enthusiastic about the project and we are over the moon to have been able to reach our biggest audience ever."

The RHET team raises funds, agrees on the logistics, with Tara co-ordinating and updating the classroom schedule which is packed with educational challenges growing instructions, essays, recipe ideas and facts about the potato.

WCF Horticulture, overseen by Business Manager Miriam Methven, provides and packs the seed and provides fertiliser. All packs are labelled with plant passports.

John Marshall, RHET volunteer and committee member for Perth and Kinross, said: "This detail is important as schools are all located in the heart of seed-growing Scotland and casual talk of just using supermarket potatoes can be kept at bay!

"Because of Tara's enrolment success we had a gap in funding for compost this year, which was generously filled by Grewar Farming. A big thank you to Euan!"

This year the variety used was Jazzy, a small, set-skinned variety which lends itself to salads, and can be boiled, roasted whole or even crushed.

Miriam said: "Jazzy is a premium salad variety which is making a big impact on the UK potato scene. Jazzy is already a fun brand which really engaged the children last year and they particularly enjoyed the prolific nature of the variety. The Mr Jazzy Potato Project is fun and educational, covering a range of learning outcomes. Pupils are very much hands-on and enjoy learning how to grow potatoes and how they fit into a healthy balanced diet."

The pack consists of six tubers, a sachet of fertiliser and 50 litres of peat-free compost. The grow bag is the compost bag. Three tubers are used in the competition and the others are used for smaller observation experiments. Growing in a plastic bottle allows observation of root and tuber development.

"Educational double pots would be ideal but at £14 a shot, unless we get more sponsorship, is prohibitive," said John. ➜

WCF Horticulture, a packer and supply chain manager, specialising in seed potatoes, provides a pick-up point at its store at Almondbank.

"We encourage "chitting" so from day one the classes are engaged with the growing plant and a new word is learned," said John, whom children have now dubbed 'The Potato Professor'.

Research Phytopathologist and Director of Scotland's Plant Health Centre and the National Potato innovation Centre (NPIC), Professor Ian Toth, then embarks on a tour of as many classes as is feasible. This year he carried out 56 40-minute sessions in schools throughout the region over a five-week period.

There are four parts to the road show which involves a lot of transportable props, potato products, diverse potato varieties, growing necessities, a model farm field store and grading shed and gadgets to demonstrate how chips, crisps, multi-coloured rice and tornado potatoes (twisted potatoes on a stick) are made. Andrew Skea of Potato House provided coloured fleshed tatties.

"During the sessions there is great excitement, with teachers and helpers, and always a great show of hands for sometimes very probing questions. Four primary ones before lunch is more challenging than a morning in the seed trading room whereas an afternoon talking and addressing all the pupils at a rural school, only 12, is almost relaxing," said John.

"The ultimate goal is of course to achieve the weightiest crop. Jazzy is known for very high tuber numbers so size does not matter. Plants are harvested just before the end of term and yield figures are returned by the teachers. It would be ideal to recruit local farmers for this task but logistically it is too challenging, particularly with the Royal Highland Show looming."

The committee is already planning for its 2024 event.

John said the team was grateful to Stuart Morris for providing the tops for after the potatoes had been picked into wire baskets and to Taylor's Crisps who will be offering factory visits in the future.

"In the rural schools, children have a good awareness of activities on their doorstep. In Perth - well not quite so much, although Oakbank Primary which is right in the middle of Perth, won the cup for the best crop this year," said John.

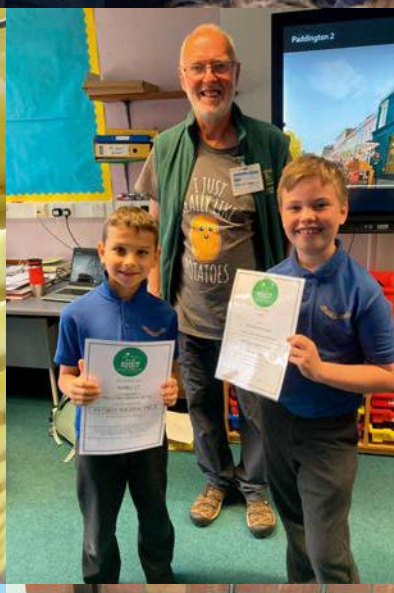
He said it was a delight to visit the class winners and runners-up, hear the children's stories and see their recipes.

"In my experience, RHET is doing an amazing amount to improve knowledge in up-and-coming generations and give an understanding of food production, the work being undertaken by farmers and all those involved in the process. The potato crop is commercially very important in the local area and this RHET project certainly does the business," said John.

While RHET P & K is receiving great support from sponsors and the teachers, the committee is urging more potato growers to get involved to help fund the classroom project.

"We have had great support from the teachers who are all very enthusiastic about the project and we are over the moon to have been able to reach our biggest audience ever."

Tara Clark , RHET P & K Co-ordinator



THE Potato Project was initiated almost a decade ago by the mother of a celebrity comic.

Comedy duo Jim Smith (aka Farmer Jim) and Chris Forbes, with the fictional MacDonald Farm, entertained many viewers with their hilarious rural adventures on 'The Farm' which aired on BBC iPlayer.

Although the show is fictional, almost all of the stories come from Jim's real-life experiences from his Stralochy Farm in Perthshire which he runs with mum Agnes Smith.

Agnes initiated the potato-growing competition which has steadily developed, with the hard work and determination of successive RHET volunteers and coordinators. PR

myFIELD digital agronomy decisions

The new Syngenta myFIELD app now provides potato growers with instant access to crop specific weather information and agronomy decision support tools, in a single easy to use digital platform that can be tailored to each individual field.

myFIELD includes major developments to Syngenta's highly popular potato agronomy tools, BlightCast and the Quantis Heat Stress Alert forecasts.

Growers and agronomists can download and customise the free myFIELD for android and iOS phones. The app will be the only way to access BlightCast from 2024 onwards.

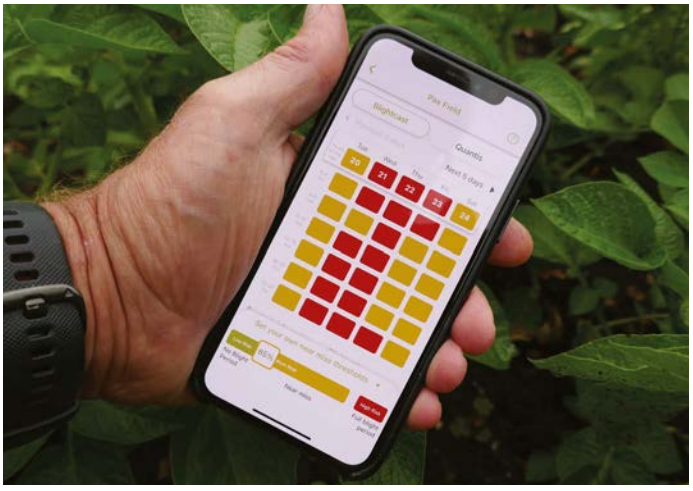
BlightCast gives up to 14 days warning of conditions conducive to disease infection and development. The system helps growers to fine-tune in season blight protection strategies to specific pressures. BlightCast has been especially effective this season, giving advance warning of the change from low disease pressure in June, to persistent, high disease risk from the wet and humid conditions later in the summer.

An advanced new function of the BlightCast app this season has enabled users to personalise the parameters that trigger a near miss threshold, to tailor the system's sensitivity to specific situations and their own risk requirements; the full Hutton period warning remains fixed at nationally recognised humidity and temperature conditions.

Risks are clearly defined with easy to interpret green, amber or red alerts, to aid growers' decision making.

The Quantis Heat Stress Alert tool notifies when heat events are forecast to trigger set parameters when crops suffer – in time to act with preventative applications. A Quantis application prior to heat events in potatoes, sugar beet and maize has consistently proven to protect crops from adverse effects and provide long-lasting resilience to recover faster.

In addition to the live updates in the app, growers and agronomists can elect to receive email alerts of impending blight risk or heat event periods.



myFIELD, the QUANTIS Heat Stress tool is also available

Beating blight

REVUS has continued to perform exceptionally well in the industry's main independent blight trials this season, reports Syngenta Technical Manager, Andy Cunningham.

The Eurofins trials have demonstrated REVUS mixtures outperforming other treatments in the resistance management trials, despite very high pressure and disease outbreaks. The trials had all been inoculated with both 36_A2 and 37_A2 blight strains, as well as the natural background population, he reported.

"REVUS mixtures with fluazinam, which may have been expected to struggle with the 37_A2 strain, were still among the best performing results in mid-August, when other options had begun to break down.

"It has shown how well blight populations with resistant strains can be effectively managed with the use of appropriate mixtures. The research provides valuable insights of effective resistance management strategies.

Although no strains that had shown resistance to CAA fungicides in Europe last season have yet been identified in the UK, the trials and ongoing R&D will ensure growers can best mitigate future issues," he added.

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BP2023

Meet the Syngenta team at BP2023 in Harrogate on November 22nd & 23rd to get the latest agronomy insights and new developments.

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‘Sprout suppression starts in the field’

Andrew Goodinson shares his seasonal insights on storage, discussing some of the key points on planning, and how what takes place in the field can impact on storage, with a focus on sprout suppression for the processing and crisping sectors.

SPROUT suppression strategies benefit from thoughtful planning, beginning with varietal choice and end market, as well as storage. Activities affecting crop growth and its subsequent senescence all play an important role in making or breaking storage.

Key factors include varietal susceptibility, seed tuber health, rotation, crop duration, fertiliser strategy, crop stress and factors affecting haulm and tuber health, such as disease incidence plus harvest damage.

“When planning for a crop it is a good idea to think beyond the field and towards storage, checking for cultivar dormancy, resistance to diseases such as skin spot, silver scurf and rots, and checking for seed-borne inoculum prior to planting is also important,” said Andrew.

He reiterated that activities to set the crop up for storage start in the field, with maleic hydrazide (MH), which is applied in the field three to five weeks before desiccation. MH is ‘the cornerstone’ of sprout suppressing, Andrew said.

“This cost-effective active not only initiates dormancy and thereby inhibits sprouting, but also stops secondary growth and prevents volunteers growing in following crops.”

The strategy is particularly useful if potatoes are to be followed by maize or other crops destined to be used in an anaerobic digester (AD) because Shield Pro (clopyralid) is not permitted for this use. In addition, it is very useful for action against volunteers if the next crop is vining peas, as there is little choice of herbicides for use with them.

Although MH is approved for certain tank mixes it is more effective when applied alone because it is taken into the crop slowly, and therefore does not wish anything to inhibit it, he finds.

Attention to detail and keeping strictly to the label rate of 5kg/ha and the water rate should be between 350-500l/ha, he stressed.

“The operator should go at a slow forward speed (8-10 kph) with slightly larger droplets to ensure coverage. Be aware - sometimes MH can foam during tank filling with some water sources, an anti-foam product can be added.

“Application should preferably be made on a dull, dry day with humidity below 50%, temperatures of between 22-25 deg.C with no rain in the following 24 hours. Tubers should be larger than 25mm and the crop must have finished flowering, as this can affect the last few weeks of growth.

“Last year many growers took the decision not to apply MH because the crops were stressed and they were concerned that it might affect the canopies and slow down tuber bulking whilst others thought crops might not uptake it properly.

“The problem with making these decisions is that you have to balance these issues with putting all your eggs in one basket, by relying entirely on in-store sprout suppressants. This can work out to be much more expensive because in-store sprout suppressants are more expensive per tonne.”

Last year Andy saw cases of early dormancy breaks, which meant earlier than usual fogging of stores. This was particularly evident in crops where MH had not been used and ambient store temperatures were higher than ideal.

“These cases were very variety dependent, as some varieties are more dormant than others,” he said.

For example, crisping variety Lady Claire is very good for long term storage, and breaking dormancy would would have been very unusual. The downside of the variety is that it is often difficult to grow, and has lower yields than other varieties. ➜

While ambient stores for processing potatoes are between 7.5 – 9 C, those destined for the packing industry are placed in different storage conditions, he adds, noting that they are usually kept at around 3C, and the cold temperatures induce dormancy so MH is not necessary.

"These lower temperatures reduce the incidence of unsightly blemishing diseases such as silver scurf but if chipping or crisping crops were stored at low temperatures this would lead to an increase in sugar levels which would not be acceptable in the processed sector, as fry colours would be affected and increase the risk of acrylamide."

Sometimes things have gone wrong, particularly as temperatures were so high at lifting last year, and Andrew notes that some of his growers had identified a small number of cases of internal sprouting.

"This can happen where varieties with short dormancy and vigorous growth are stored in warm conditions, or when timing of applications has been too close to dormancy break, or insufficient sprout suppressant has reached the tubers. The risk of it happening are higher in seasons where growing conditions promote early dormancy break, such as we had last year."

Reflecting on the 2023 crop, he notes that the stress of last year has impacted on the seed potatoes.

"We have seen quite a few uneven 'hen and chick' crops this year, and this is often because the seed tubers were physiologically more aged than normal, and so they had started chitting. Also, since planting was delayed some seed had sprouts up to 40mm long, some of these were de-sprouted before being planted, which affects vigour and stem numbers.

"Belt planters do not cope well with excess chits, causing some misses. This was made worse because the cold, wet weather meant that we were three to four weeks late planting in the spring.

"The crops remain behind, and at the end of July some of them have not yet closed canopies across the rows before flowering. They are unlikely to be able to make up this time and we are expecting lower yields."

Planning potato storage

If possible, avoid placing low and high dormancy varieties together in a store, recommends Andrew.

"This goes back to the planning stage, when you should think through the varieties you will be growing, and where they will be stored, and how much can be put into each store."

He also advises growers with box stores to think about airflow, planning layout so that the sprout suppressants have the best possible conditions in which to work.

"Box stores should have about 40% air space, which needs to include above and in front of the boxes. When the fog is introduced, it is important to avoid it hitting the potatoes immediately, so you need some empty space for the gas to spread once it enters the store."

This is not new, he explains, adding that it was learned with CIPC, because if the gas settled on the potatoes it left a silver crystalline layer. Also, air always takes the path of least resistance, so if boxes are stacked tightly on either side of an alley, the air will take your expensive sprout suppressant down the alley and not across the boxes."

Store loading and care

As the previous year's crop moves out of store, Andrew recommends servicing ventilation, cleaning and ensuring store integrity by checking for leaks and ensuring they are closed.

"Dust and debris can harbour pathogens and fungal spores which can create problems later in storage, particularly when there is movement of air which can transport the pathogens onto the stored potatoes."

He emphasises the importance of filling the store as quickly as possible, switching on the fans for continuous air circulation as loading starts, and stacking boxes across the direction of air movement so they get maximum exposure to the air.

"Dust and debris can harbour pathogens and fungal spores which can create problems later in storage, particularly when there is movement of air."

"The main reasons for variable results from sprout suppressants include instore temperature variation. The ideal temperature is about 8.5C for fogging."

"Ventilation controls will help minimise condensation, and once the store is loaded the doors should be closed and internal air/temperatures managed to keep crops dry and at the correct temperature."

"Attention to detail and monitoring crops can help minimise disease coming in from the field and assess levels of treatable disease so best practice can be used to control them."

He recommends discarding at grading those with poor skin set, symptoms of blackleg or spraing, and any blighted tubers to minimise rots occurring later in the season.

Once the store is loaded, store fans are switched to dry and cure any wounds at about 10-12C, for two weeks, before bringing temperatures down.

Stores can be ready for the first application of a sprout suppressant three or four weeks later.

"Since the withdrawal of chlorpropham (CIPC) we have had to get to grips with the management of new actives, some of which have been used elsewhere for a number of years but have only recently been approved for use in GB. We still have more to learn about them to get the best results."

"Reports show that the main reasons for variable results from sprout suppressants include instore temperature variation. The ideal temperature is about 8.5C for fogging so a sealed, insulated store can help maintain the required stable temperature, although there are times when ambient ventilation is necessary. Excess moisture can result in condensation, and subsequently diseases. In addition, excess soil on the tubers can affect how well the product works as it restricts air flow and coverage of the product on the tubers."

However, he recognises, it is hard to avoid in a wet lifting season.

When it comes to sprout suppressants, it is not usually the agronomist making the decision, but an agreement with the grower, final customer, and discussion with the fogging contractor.

For the crisping industry, there is a choice of 1,4-DMN, orange oil (ARGOS) and mint oil (Biox-M).

Andrew explains that 1,4-DMN works by inhibiting protein production and the metabolism of the tuber, effectively bringing on dormancy.

"This is a preventative measure rather than curative, so is often used earlier in the storage calendar. It has a lower application rate than the others, so although it is applied slowly, it takes less time to apply than other products which have a higher application rate, so time efficiency for the operator is greater - the maximum volume of fog for the best results is 50 l/hour."

Follow-up applications depend on regular monitoring for the 'eyes' peeping, signifying sprout emergence, and knowledge of when the store will be unloaded.

"People like 1,4-DMN; in a difficult season it has proved itself to work very well," he said, adding that mint oil and orange oil have not disappointed either. The two oils work on contact and are used to burn off the tiniest pinheads of sprouts, and should be applied when 20 – 25% of the tubers have sprouts of less than 1mm.

"Industry experts have reported better results for orange oil in bulk stores, while mint oil works better in box stores. Timing and application of sprout suppressants are key – in this they are very much like plant protection products; you need to choose the right one for the circumstances and the environment you are operating in." PR


Mario Caccamo David Buckeridge and Jim Godfrey.

David brings 35 years' expertise to the table

DAVID Buckeridge has been elected as Chair of the Board at the crop research organisation NIAB.

Dr Buckeridge has 35 years of operational management experience in the life science and agribusiness industries. With a PhD in genetics and plant sciences from the University of Wales, David began his career with AstraZeneca, spending 20 years in a variety of management positions globally.

After serving as Group CEO of Advanta BV, the largest independent agronomic seed business in the world at that time, David led its exit from private equity ownership and advised on its successful initial public offering to the Indian stock market in 2007.

Subsequently, he has held a senior advisory role to both strategic and financial investors in the life sciences and agribusiness, focusing on the operational and strategic planning aspects of these industries. He has served as director and chair of a range of companies in the agribusiness, pharma and public health industries.

David succeeds Jim Godfrey who retired in November 2022 after chairing the NIAB Board for seven years and now takes a position on the Board of the National Institute of Agricultural Botany Trust.

New trustees for charity board


Trefor Owens

LANTRA has appointed three new trustees.

Lantra is an independent, awarding/accreditation body which exists to help land-based and environment industries. As a not-for-profit charity, the Board of Trustees instrumental in setting the strategic direction and overseeing performance.

The new trustees are Trefor Owens, Euryn Jones and Helen Taylor.

Trefor is an experienced chartered forester and senior leader in sustainable land management. Euryn has a wealth of experience in agricultural education where he has worked as both an Agricultural Lecturer and Farms Director. His current role as Regional Agricultural Director for HSBC, sees him working closely with farmers to develop and grow their businesses.

Helen is a committee advisor and Chartered Surveyor with governance experience across the UK's public and private sectors.

New appointment to lead work on abiotic stress

THE James Hutton Institute has appointed Dr Robert Hancock as Deputy Director of the Advanced Plant Growth Centre (APGC).

An experienced plant physiologist and biochemist, with a notable track record in industry collaborative research, he will focus on resource use efficiency and response to abiotic stress in potatoes and soft fruit.

Robert has been closely involved with the development of the project since its inception, and has played a key role in developing the phenotyping platform whilst working with the UK academic community through PhenomUK, an organisation which promotes greater involvement in the development of plant phenotyping technology.

The Advanced Plant Growth Centre is part of the Tay Cities Regional Deal partnership supported by £45m from the UK Government and £17m from the Scottish Government. The APGC combines five core facilities, interconnected but independent, to facilitate scientific innovation and discovery.

Dr Hancock said: "I am delighted to be appointed this role at a key time in the development of this exciting project. It will massively enhance the capacity of the James Hutton Institute to deliver not only to industry needs around vertical and indoor farming but through critical imaging and phenotyping technologies to the wider agricultural sector by delivering new varieties and management technologies to enhance the efficiency and resilience of agricultural production. I look forward to working with Professor Stewart to make Tayside a global centre for precision agriculture."

Professor Derek Stewart, Director of the APGC said: "I have worked with Rob for many years, and he has demonstrated that his science is of a high calibre and firmly in the APGC target areas. His more recent activities to ensure integration of the APGC into PhenomUK and its associated activities makes him a perfect candidate for the role."

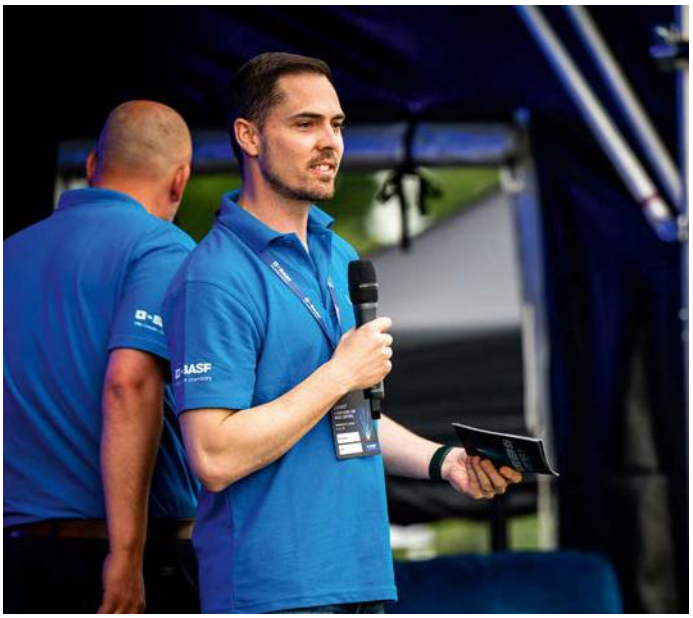
Fertiliser expert's new appointment

OMEX Agriculture has appointed Oxfordshire-based Clive Deeley as Sales Manager South, to strengthen the southern UK business and support farmers switching to liquid fertiliser.

Clive, who more amassed more than four decades in the fertiliser industry, said he has seen significant growth in liquid solution fertilisers, foliar sprays and biostimulants.

"The use of liquid fertiliser is growing rapidly within the UK," he said. "Key benefits include application accuracy, improved environmental credentials, reduced labour and storage. Application accuracy in particular is having a significant positive impact on improving nitrogen use efficiency."

OMEX has 11 liquid nitrogen storage facilities located strategically across the UK and a nationwide storage capacity of 180,000 tonnes.



Joel moves into director's role

JOEL Johnson has been appointed Agricultural Solutions Business Director for BASF for the UK and Ireland.

The role was formally managed by Neil Kay, who was promoted to Vice President for Agricultural Solutions for EMEA West earlier this year.

Joel joined BASF in 2006 as an Agronomy Manager and went on to be National Retail Sales Manager for Canada. Prior to moving to the UK in 2020, to take on the role of Agricultural Solutions Head of Marketing, he worked for BASF's Global Marketing Business in Raleigh, USA.

Mark is first in role as manufacturer pursues growth plans

MANUFACTURER of vegetable and materials handling equipment, Haith Group, has appointed Mark Lloyd as its first-ever non-executive director.

He joins the company's senior management team, led by managing director Duane Hill.

Mark's career began in the 1980s when he joined Pegler Ltd, a manufacturer of industrial valves, radiator valves and compression fittings based some six miles from Haith's Armthorpe site. He spent the next three decades in director roles for several furniture manufacturers, Dunlop Slazenger and, most recently, kitchen manufacturer Omega PLC. As well as helping increase the efficiency of existing businesses, in 1999, Mr Lloyd also started his own venture.

He said: "The plan Duane and his team have developed is exciting, and I'm looking forward to the challenge ahead as we seek to move Haith to the next level both here in the UK and overseas."

Haith's range of vegetable handling machines includes grading, washing, bulk handling, weighing, pre-pack systems and water treatment solutions for food producers, packing companies and growers.

True to the cause

Solynta's co-founder & CEO **Hein Kruyt** shares his career journey and aspiration for the future of potato growing in EU start-up focus.

HEIN Kruyt, Co-founder & CEO of Dutch breeder Solynta, was recently interviewed by EU Startups where he discussed developing hybrid 'true' potato seeds to offer growers non-GMO, pest-resilient and sustainable potato options.

Hein has shared the challenges faced, how these were overcome and future strategies.

Discussing his entrepreneurial journey and how he came to co-found Solynta, Hein said: "This entrepreneurial journey started when I was the Chief Financial Officer at a global tomato seed breeder. There, I explored further growth opportunities for our company, which included a possible venture into the potato world.

"Potatoes weren't my first choice, as their challenging growing logistics, perishability, bulkiness and lack of innovation led to low margins. But my team members argued that the potato is in the same family as the tomato and could produce similar breeding. However, unlike tomatoes, farmers didn't use the seeds (called true potato seeds) to plant their fields because they weren't identical. Instead, farmers were condemned to use last year's tubers.

"That same evening, I delved into research to understand the potential potato opportunity. It soon became clear to me that if we could enable hybrid breeding in potatoes and provide the world with true potato seeds, the growth potential would be unlimited."

He said achieving successful hybrid potato breeding was the first challenge. After recruiting a new R&D director, the company began with five research projects, of which four were unsuccessful. Following a company acquisition, he felt the new owners were not interested in funding the work so an independent potato project (with stakeholder approval) was launched.

'High-risk plan'

"With only one potential research project left, we continued with an admittedly high-risk plan to convert potatoes into a hybrid crop. Many research groups worldwide had explored this idea and decided it was impossible, but we had no idea then," he said.

He said scientific work such as Solynta's is incredibly relevant to today's world.

"Potatoes are probably the world's most important food crop, with the highest potential to feed the growing population. It grows almost everywhere, offers superior nutrition to cereals like rice and wheat, and requires significantly less water. But there are two main drawbacks to the crop, which is where Solynta operates.

"Farmers traditionally grow potato crops using last year's tubers. It takes 2,500 kg of tubers to plant a hectare, and they are often riddled with disease and other contaminants. Potatoes are difficult to ship and store, and shipping trucks of seed tubers spreads potato diseases around the world. It also takes years to produce sufficient volumes of planting material.

"In comparison, Solynta's true-potato-seeds only require 25 grams of pristine, healthy seeds to plant a hectare. They are completely free of diseases and easy to ship and store. We can also produce seeds much faster than tubers because a potato plant produces 5,000 seeds per plant, so the supply chain scales 500 times faster than the traditional tuber-based system (which only produces about 10 tubers per plant). And, of course, the farmer does not lose 10% of their yield because they must save tubers for next year's planting."

Potato breeding has its own challenges, he added. While resistance to pests and diseases naturally exists in potatoes, traditional breeders have not yet been able to cross these resistances into existing varieties, as is common practice in vegetables like tomatoes. Therefore, potatoes stayed very susceptible to pests and require intense agrochemical usage for successful growth.

Solynta's (non-GMO) technology enables researchers to combine beneficial traits into existing hybrid varieties, to provide resistance against pest and diseases and tolerance to climate factors like heat, drought, and salinity, he said, which will make them much more robust against climate change.

"In addition, we can also breed for specific consumer preferences, like organic varieties or shorter cooking times or business needs, like improved starch and protein levels for better fries and chips."

Over the next six years, the company hopes to increase potato yields by one-third, reduce the need for pesticides by two-thirds, and reduce greenhouse gas emissions by one-third. "Supplying our seeds in almost unlimited quantities will unlock valuable food production for farmers worldwide," he said.

Main challenges

One of the main challenges he has faced in his career journey was balancing different viewpoints. "Because we looked at potatoes through the lens of a tomato breeder instead of a potato breeder, we could recognise untapped potential. For example, we were focusing on the potato flowers because that's the origin of the next generation. A potato breeder would be more inclined to look at the potato tuber instead. It was also challenging to weigh the different viewpoints of science and business to take risks, define projects, and decide on our direction," said Hein.

Other challenges have been considering different scenarios for funding and achieving regulatory approval.

"We thought we could get a patent granted by the EPO in three years, but it took 12 instead. If you want to cross a border with potato seeds, you need to declare them with customs. The problem? Potato seeds are so new that they do not exist in customs books. If it doesn't exist on paper, it is not allowed, and border officials must destroy it. It's the same story in the EU as well.

"Potato seeds do not exist in the legislation, so you are not allowed to sell it. That is not very helpful to your business model. I recommend founders engage with regulators at an incredibly early stage, put yourself in their position to try and understand their deliberations, and, above all, ask for guidance."

'Establish trust and milestones'

Since its establishment in 2007, Solynta has secured significant funding. Key strategies to obtaining this have been establishing trust and milestones, he said.

Solynta partners with universities and businesses across the world on scientific research into developing better varieites.

One of the industry areas which is very open to improvement is the waste stream associated with processing, according to Hein, who said science has its part to play in reducing this.

"We can significantly reduce waste or improve conversion ratios for processors by focusing on the specific conversion characteristics of the potato. For example, we can optimise the shape of the potato for fries or chips or improve the dry matter." PR

Source: EU Startups

East coast farmer gains through a change in approach

FIVE years on from hosting Farming For A Better Climate (FFBC)'s pilot project, Montrose farmer Willie Officer has seen the results of a changed approach to on-farm practices.

Farming 900 acres of all arable, including potatoes and daffodils bulbs, over owned, rented and contracted land, Willie got involved with the project, run by SAC Consulting, to experiment with different regenerative methods, from floatation tyres to solar energy, to see how they would improve the soil, crop quality and profit margins.

"We've always been proactive at Ardoch of Gallery with trials and seeing how we can progress the farm," Willie said. "We are a traditional Angus family farm, so we need to be constantly looking at ways to make the business more profitable. I was curious about this more regenerative approach, both for improving the business now but as much, especially as my children grow up and my son is showing aspirations to take over, for the next generation.

"We took livestock out of the rotation when we had to sell the cattle during the BSE years, and I wanted to see if there were other ways we could be doing a better job to boost the soil and wider environment."

"We are a traditional Angus family farm, so we need to be constantly looking at ways to make the business more profitable.

Running cold stores for bulbs in the summer and potatoes during the winter, the farm has high energy usage. Through the programme, various renewable options were explored and it was decided solar panels were the best fit.

Since 2017, Willie says these have outperformed expectations, helped by good summers. There's still reliance on the main grid over the winter, but summer demand is largely covered by the panels.

Willie has seen significant soil improvement. Using more detailed soil sampling, satellite imagery and a fertiliser spreader with variable rate capability, the crop can now be fed with the appropriate nutrition. Willie says that while he may not have reduced inputs, he's being smarter with how he uses them, resulting in a more even crop evidenced by the GPS mapping on the combine.

Having seen the compaction of the soil by digging pits at the start of the project, Willie introduced floatation tyres and the combine is on tracks, which has resulted in better root structure and yields.

"You can't see any wheel tracks from the previous rotation," he said. "Not everything we tried worked, though. Cover crops weren't great, but the understanding around these has moved on so much since we looked at it – the different mixes for particular soils, the circumstances they're grown in and the Scottish climate. We'd definitely look at it again."

Willie now has a straw-for-dung arrangement with a neighbour, which has increased the number of bugs, worms and insect life in the soil. On his owned land, he has planted wildflower headlands with seed subsidised through supplying Asda/IPL with potatoes. He says the wildlife is "phenomenal".

He min-tills some land, but strip tilling is not currently viable.

The family has started a haulage company to bring in diversified income, and going forward, battery storage is on the radar along with a second solar array, but Willie is waiting for the technology to advance. PR

State-wide drought leads to uneven growth

A STATE-wide drought in Oneida County has provided some real challenges for potato growers but they are still on track for an average season.

The severe drought affected farmers and consumers, leaving soils exceptionally dry. May was the eigth driest on record over the past 129 years according to the US Drought Monitor.

Executive Director of the Wisconsin Potato and Vegetable Growers Association, Tamas Houlihan, said 95% of potato fields have irrigation systems.

"Wisconsin is fortunate to have an abundant underground aquifer," he said in an interview with local radio station, WXPR. "We have been irrigating, almost daily, owing to the severe drought conditions that have affected the entire state, and so due to irrigation, we have a very good, I'll call it an average-yielding, potato crop. The drought has taken the top off yields, as the growers put it. They're not going to be able to get a bumper yield this year, because it's just been too hot and too dry for too long."

While the quality of the crops will be good, the heat may have caused some uneven growth, he added.

Thirty-seven states across the US reported moderate droughts or worse last week, meaning 272.3 million acres of major crops were affected.

Sales increase and strong quarter

POTATO sales in the US increased 16.8% for July 2022 to June 2023, closing with a strong quarter (April through June) that saw retail dollar sales growth of 14.5% compared to the same period last year.

Potato USA, the national marketing and promotion board representing US growers and importers, reported that dollar sales reached $16.9 billion for the 52-week period, the highest in five years.

Although volume sales were down for the year (2.6%) and the quarter (3.3%), they remain 2.5% above pre-pandemic levels.

Retail prices increased for all potatoes for the full year by 19.9%, but as evidenced by the strength of sales, potatoes remain affordable for consumers with an average price of $2.36 per pound.

The April through June quarter showed similar results, with a price increase of 18.3% compared to the same period last year and an average price of $2.56 per pound.

All categories of potatoes increased in dollar sales for both the year and the quarter, including (year | quarter): Frozen from 34.8% to 39.3%, canned from 19.1% to 33.9%, fresh from 16.5% to 12.4%.

For fresh potatoes, the average sales price for the 52-week period was $1.01/pound, a 19.8% increase from the previous year. Fresh dollar sales increased for all types except white, fingerling and purple potatoes. Yellow potatoes were the only member of the fresh category to grow in dollar (21.4%) and volume (7%) sales.

Russet potatoes, which make up 62% of all volume sales for the fresh category, saw dollar sales increase by 23.5% and volume decline by 3.3% for the year. Russet potatoes had the biggest year-over-year price increase in the fresh category.

All pack sizes except packages larger than 10 pounds saw an increase in dollar sales year-over-year. All bags five pounds or less grew in both dollar and volume sales for the period. Volume sales increases were very similar across three pack sizes.

Summer snack suggestions

POTATOES USA, the national marketing and promotion board representing US growers and importers, released summer snack recipes for packed lunches, picnics and barbecues.

These included Everything but the Bagel Tater Bites, On-the-Go Potatoes, Citrus-Rosemary Potato Poppers with Roasted Beet Dip, Salt and Pepper Air Fryer Chips, Carrot "Cake" Potato Performance Muffins and Cheesy Mashed Potato Puffs.

RJ Harvey, Director of Culinary at Potatoes USA and a registered dietitian said: "Potatoes are a fantastic pantry staple with a long shelf-life, which is especially important when you have a packed schedule and need to whip something up in a hurry."

The recipes and further nutritional information can be found at **PotatoGoodness.com**.

Unlicensed imports from Bhutan to continue

BHUTAN potato imports are to continue unlicensed to India for another year, the country's Directorate General of Foreign Trade has ruled.

The DGFT (Directorate General of Foreign Trade) recently issued a notification declaring that the import of potatoes from Bhutan will continue without the need for an import license until June 3th, 2024 in a bid to maintain a steady supply of potatoes while fostering bilateral trade relations between the two countries.

Previous import policy allowed the import of potatoes from Bhutan without an import license until June 30th, 2023 and the Ministry of Commerce and Industry has extended this, eliminating the need for additional documentation and requirements.

The amendment aligns with the powers granted by the Foreign Trade (Development & Regulation) Act, 1992, and the Foreign Trade Policy, 2023. These regulations empower the Ministry of Commerce and Industry to modify and update import policies to facilitate trade and ensure the smooth flow of imports.

Over the past year, India has imported fresh or chilled potatoes worth $1.02 million.

Heavy rain takes its toll on potato rows

NEW England has been subject to unusual and inconsistent weather and potato growers are feeling the after effects.

To many the weather, marked most notably by heavy, persistent rain, may seem a welcome change in 2023 after 2022 saw the worst drought the region had experienced in years but for local growers, who are always in need of water for their crops, the rain and inconsistent weather posed unique challenges this year, and in many cases resulted in significant crop losses.

Higher prices and more imports

HIGH prices and a shortage of good-quality produce, combined with an "extremely problematic" new crop, have been a real challenge for suppliers in Belgium this year, according to Jurgen Duthoo of Warnez Potatoes in Belgium, which has been supplying the potato industry since 1950.

"The entire season's been hard. Summer 2022 was very dry, so the potatoes evolved faster in storage. We thus had to switch to imports as early as May. Israel and Egypt were in the market then, but they, too, had quality issues. We were, therefore, paying a lot for good quality potatoes. It was the same later with Spain and Portugal, where the drought caused lower yields and lack of calibers," he said in a recent interview with Fresh Plaza.

To make any profit, the packer had to pass on costs. New crops in Belgium and Germany did not look promising. Cold and wet spells in March and April meant growers couldn't work in their fields until May.

A long dry spell following planting meant intensive irrigation was needed to soften the soil so now, despite some showers, field development is erratic. Some areas saw good growth but others had no tubers at all, or plants were partially rotting and in July, imports were being considered.

New office for Breeders Trust

BREEDERS Trust SA, an organisation made up of seed potato breeding companies in Europe, has moved to a new office in Brussels, Belgium.

Breeders Trust is an organisation of 12 seed potato breeding companies from Germany, the Netherlands, France, Scotland and Denmark.

The trust, which was established in 2008, is involved in the development of new potato varieties and supports participating companies in the implementation and enforcement of their Plant Breeders Rights protection while striving to prevent illegal trade in plant propagation material.

Its members include Agrico, Meijer, Danespo, Europlant, Germicopa, HZPC, Interseed Potatoes, Norika, Solana and Stet Holand.

The new office is at Tweekerkenstraat 26/3, 1000 Brussels, Belgium. Previously, it was based at Rue du Luxembourg 23 and Rue des Deux Églises 26, both in Brussels.

Retailers and consumers' habits in the spotlight as future of growing discussed

BELGIAN potato, vegetable, and fruit traders and representatives from the processing sector gathered for Fresh Trade Belgium, Belgapom, and Vegebe's annual FVPhouse event recently, where food sustainability food and the future of growing were key focus points.

Panellists included Bram Van Hecke (Groene Kring), Els Bedert (Eurocommerce), and Tessa Avermaete (KU Leuven).

Els spoke primarily about collaboration, saying too many growers and suppliers just follow their own plan. "We'd love to know what exactly is sustainable food. Everyone's capitalizing on their specialty, but there's no central approach to sustainability. Together, we need clarity on what to focus on. Sustainability is at the top of many minds, but it's a complex issue with numerous aspects," he said.

Tessa said she was not convinced that small-scale local equated to sustainable. "The rule of thumb is to do what you're good at," she said, adding: "Stick to what you do and get people eating healthier again."

Bram said growers in Belgium should consider European consumers between Amsterdam and Paris, rather than expecting their produce to be on global supermarket shelves in the future. "For a sustainable future, that's a responsible scale." Els agreed, saying: "Some consumers seem to have lost touch with growers. It's vital to foster the understanding of where your food comes from."

All the panellists said consumers have a critical role to play, though this occasionally needs to be steered.

"Shoppers generally still consider prices. They want to spend a little money as quickly as possible when shopping. So, it's up to us to include the general public in the sizeable sustainability challenges. The market sometimes has to steer you a bit in that," said Bram.

According to the panelists, sustainability also means higher margins must be realized to keep cultivation attractive to growers. Asked about the future, Bram is passionate about this. "Many ardent growers drop out because it's been made so difficult for them. We're increasingly moving toward large dependent growers and away from small-scale impassioned growers. That's an evolving problem."

Els said retailers are constantly striving for cost-cutting production to trump competitors and posed the question: "Aren't we then out-competing each other? Should we move to the French model, with its set minimum paid amounts?"

Bram, however, noted the chain is hugely flawed and needs to be reformed and the others agreed. "Reform is difficult when money's being made. Those earning and profiting now don't think about change. Then it is their 'business. But, growers end up footing the bill. I think forward-thinking and cooperation are central to future discussions," he said.

Promising season for growers and traders despite lower yields

A SHIFT in favoured varieties is likely in the Netherlands, according to potato trader Kees Bijl.

Bijl Potatoes supplies a wide range of locally-grown varieties year-round to the fruit and vegetable trade, retail packers, exporters, and the industry and Kees says there is already a shift from very floury to floury and waxy.

"Doré is becoming a smaller item. Though it still has a certain base in the area, sales decline yearly. Other varieties like Colomba, Musica, Anais, and Alegria are popping up now," he said in a recent interview.

"At present, our regional potatoes are not being packed for the supermarkets yet. That's happening, to a limited degree, in the north of the country. Most of the trade happening now is toward greengrocers and market traders. And, of course, there are farm stores."

Kees says early in the season, they primarily work with 20kg Alvantho crates.

With a late spring resulting in limited supplies, potatoes planted at the beginning of March are only now being grubbed, and yields are as much as 25% lower than average, so prices are good, he said.

While irrigation has gone well in the Tholen region, the crops are not growing too well because of easterly and north-easterly winds which have been blowing over the island for a long while.

"That air's too dry for the crop to grow well. The current sizes and few plots suitable for harvest reflect that. But the range is fairly wide. There aren't only the main Doré and Frieslander varieties available."

In August, as potato skins tighten, more loose products will be going out the door because growers can then use big harvesters in the fields but at the moment the potatoes still have to be handled very carefully, he said.

The current good potato prices are not only due to the lower Dutch yields but also down to earlier limited imports.

"There's a clear need for Dutch product, because there are few imports, putting pressure on the market. The French fries industry is still busy with the old crop, but they, too, will come calling for new potatoes from the second half of July. That market is after all much broader and larger than that of ware potatoes. Something we've undoubtedly piggybacked on in recent years."

However, the picture for growers and traders looks promising, he said, because although yields are lower, payout prices are higher.

30% price drop in wholesale

WHOLESALE prices for potatoes fell by 30% in Ukraine, with a high supply exceeding demand.

The reduction in consumers has resulted from the outflow of refugees and a decrease in the population. There has been an expansion of land dedicated to vegetable cultivation and growers sought to quickly sell their harvest as long storage times aren't possible.

Sales remain profitable as prices have not below production costs and prices are expected to increase further, potentially leading to shortages, in the winter.

12,476 thousand tons of potato imports

UKRAINE imported 12.476 thousand tons of potatoes between January and June 2023, worth $8.641 million.

Greece, Romania, and Azerbaijan were the main suppliers of the potatoes.

The early potato market, due to the occupation of the Kherson region and the cold spring in Ukraine, remains quite tense, according to a report in 'East Fruit'. Mass harvesting of early potatoes in the southern regions of Ukraine began around three weeks ago.

Zimbabwean growers receive three million potato plantlets

ZIMBABWE'S agricultural research hub Kutsaga has distributed more than three million potato plantlets using the new tissue culture technology.

The distribution is meant to ensure self-sufficiency in the national potato and horticulture micro-propagation for the Presidential Rural Horticultural Scheme.

Dr Anxious Masuka, Minister of Agriculture, Fisheries, Water and Rural Development, said in a recent speech: "In terms of sweet potato plantlet production, I am aware that this project has been providing plantlets to participants of the Presidential Rural Horticultural Scheme, for establishment in their nutrition gardens. I know that since 2021, TRB has produced and delivered well over three million sweet potato plantlets to rural households in all 10 provinces of Zimbabwe."

Masuka said the full utilisation of new technology (tissue culture), has enabled Kutsaga to offer disease-free seedlings at a larger scale within a short space of time.

Efficient production of high-quality seed potato tubers, added Dr Masuka, was essential for improved productivity and cannot be over-emphasized as the country moves away from being solely dependent on production from the Eastern Highlands and imports.

Potatoes NZ Conference brings strong decision-making insights to growers

AN impressive lineup of speakers featured at the recent Potatoes NZ Conference, which took place at Te Pae in Christchurch, New Zealand.

Those sharing their insights and expertise included Tasmanian potato grower Darren Long, NZ economist Cameron Bagrie and radio host HAmisk McKay.

Darren is a recognised leader in cover cropping and biofumigation. With more than 20 years' experience, he has successfully implemented innovative practices on his family-owned farm in Sheffield, located on Tasmania's north-west coast. He co-founded Soil First Tasmania to educate other growers about cover cropping, inspiring fellow farmers to adopt these techniques.

Darren's expertise and dedication have made him a respected figure in sustainable farming and he spoke about soil resilience with regards to an everchanging climate.

As an esteemed NZ economist, Cameron Bagrie possesses a deep understanding of economic trends and their implications for various industries, including agriculture. With his unique perspective on the global economy, he analysed current market conditions and shared valuable insights into how they might influence the potato industry.

Hamish is the host of MEDIAWORKS flagship agribusiness REX on MAGIC RADIO and has strong ties to the Manawatu region.

Industry converges in Charlottetown

GROWERS, researchers and industry partners from all over the US gathered in Charlottetown, the capital of Prince Edward Island, for the annual meeting of the Potato Association of America (PAA).

It was the first time the event had been held on Prince Edward Island since 1997, providing attendees with educational and networking opportunities, potato research updates, and presentations from industry representatives.

Key activities included research presentations, information exchange, identification of professional contacts, and participation in association business meetings. Other highlights included research, field, and industry tours the organisation offers before and after the meeting.

The local hosting committee stated: “Prince Edward Island has been the largest producer of potatoes in Canada for many years and continues to produce close to 25% of Canada’s potato crop. Its long history of growing potatoes dates back to some of the first settlers in the late 18th century.”

The Potato Association of America was formed in 1913 by a handful of dedicated individuals from Maine, New York, Colorado and Washington DC. Members are primarily from the United States, Canada, Mexico, and Latin America, but 30 other countries are also represented in the membership.

The organisation aims to collect and disseminate technical and practical information relating to all aspects of potato production, biology, and utilization, and serve as the official professional society for those involved in potato research, extension, production, and utilisation.

Exports absorb early varieties

SHORTAGES in the potato market were seen in Castile-Leon following early harvests but prices were stable and showing an upward trend, according to the Association of Potato Operators at Origin of Castile-Leon (Asopocyl).

Association's President, Marco Martin, said around a fifth of the region’s harvest was already completed by mid August.

A boost for seed security and resilience

THE Nigeria Potato Seed Security Partnership (NPSSP), a project funded by GIZ Nigeria, has successfully introduced four new late blight-resistant and climate-smart potato varieties to Nigeria.

This will enhance local capacity within the public and private sectors to ensure an adequate supply of high-quality seed potato that meets market demands and is adapted to local conditions.

The International Potato Centre (CIP) recently spotlighted the project’s work at an online event, in which Potato Breeder Scientist Thiago Mendes and Senior Scientist at CIP Kalpana Sharma, delved into the introduction of the new potato varieties, a significant achievement in Nigeria after a decade-long hiatus. They shared insights into the innovation, impact, and future implications of these varieties for Nigerian agriculture.

The NPSSP project, in collaboration with the National Root Crops Research Institute (NRCRI) and Fruit and Veggies Global Ltd, has released four exceptional potato varieties: Unica (CIP392797.22), Juriya (CIP393371.157), Babban (CIP393371.58), and Kyau (CIP398190.200). Nigeria’s National Variety Release Committee granted official approval for the registration and release of these varieties in June.

Executive Director of NRCRI Nigeria, Chiedozie Egesi, said: “These new potato varieties are characterised by their high yields, robust disease resistance, and heat tolerance, making them ideal for farmers in Nigeria. The releases mark a significant milestone as they are the first varieties to be introduced in Nigeria in over a decade, incorporating modernised breeding technologies supported by the CIP breeding program and the national program of Nigeria. They also offer excellent taste, multipurpose uses, and nutrition, catering to the preferences of local consumers and various market segments.”

Kurdistan Region to export majority of potato produce to UAE: Consul

THE Kurdistan Region is set to export around 90% of its potato produce to the United Arab Emirates (UAE), in a move that the Emirati consul deemed beneficial to trade relations with Erbil.

Demand for Kurdish potato has grown in recent months, with several other Gulf states lining up to buy the crops produced from the farms of the Kurdistan Region.

A portion of the demand comes from McDonald’s restaurants in the UAE.

The Kurdistan Region is projected to produce 750,000 tons of potatoes in 2023 and the government is taking measures to curb imports from other countries.

A main objective of Prime Minister Masrour Barzani’s cabinet has been to diversify the region’s economy and take advantage of its fruitful agricultural capabilities to export goods abroad, despite the majority of its agricultural products being imported from neighboring Iran and Turkey.

Digital aid to in-field agronomy decisions

THE new Syngenta myFIELD app now provides growers with instant access to crop specific weather information and agronomy decision support tools in a single easy to use digital platform that can be tailored to each individual field.

myFIELD includes major developments to Syngenta's BlightCast for potato growers and the Quantis Heat Stress Alert forecasting tool, designed to better time biostimulant applications in potato crops.

Growers and agronomists can download and customise the free myFIELD for android and iOS phone.

The system's developer, Ed Flint, said downloading and registering MyFIELD will open access to detailed local weather information and warning risks selected to aid agronomy decisions.

"By adding in individual fields or cropping blocks, using the integrated Google maps tool, all the information received will be tailored precisely to the specific location and crops," he said.

Potato growers and agronomists, for example, can receive the latest BlightCast information that gives up to 14 days warning of conditions conducive to disease infection and development. The system helps growers to fine-tune in season blight protection strategies to specific pressures.

New for the 2023 season, the BlightCast App now enables users to personalise the parameters that trigger a near-miss threshold, to tailor the system's sensitivity to specific situations and their own risk requirements. The full Hutton period warning remains fixed at nationally recognised humidity and temperature conditions.

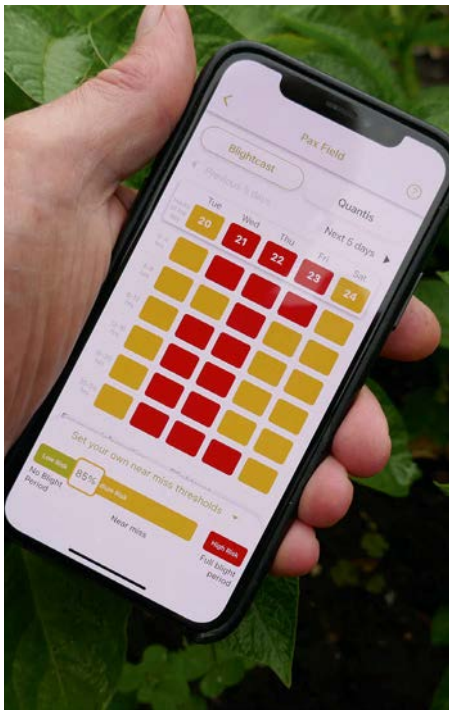
"Risks are clearly defined with an easy-to-interpret green, amber or red alerts, to aid growers' decision making," said Ed.

The Quantis Heat Stress Alert tool notifies when heat events are forecast to trigger set parameters when crops suffer – in time to take action with preventative applications. Quantis application prior to heat events in potatoes, sugar beet and maize has consistently proven to protect crops from adverse effects and provide long-lasting resilience to recover faster

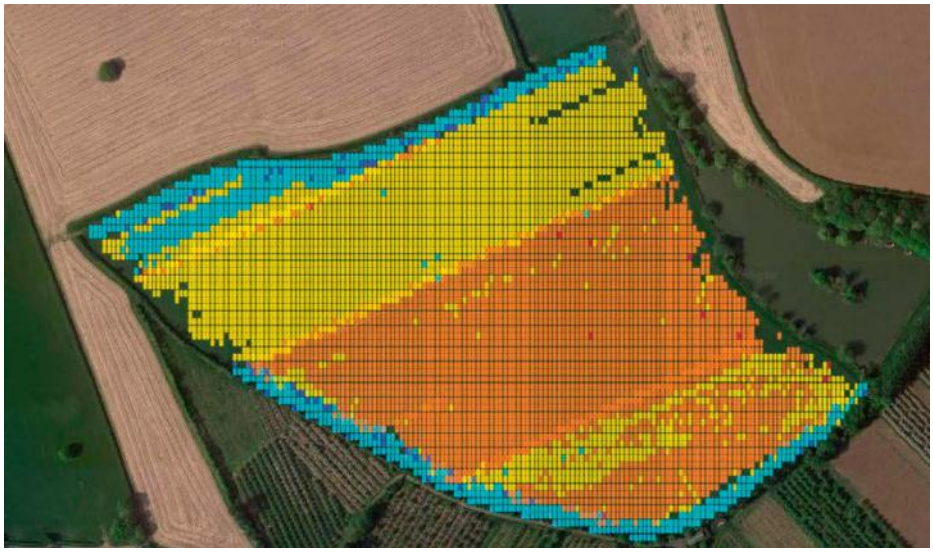
In addition to the live on-screen updates, growers and agronomists can elect to receive email alerts of impending blight risk or impending heat event periods.

"Both BlightCast and Quantis Heat Stress Alert should be used in conjunction with Syngenta Spray Assist, to ensure optimum timing and application techniques to the prevailing weather conditions and assure crops are protected," advised Ed.

Further Syngenta digital agronomy decision support tools for all crops will be added into the myFIELD App later this season and in future years. Growers and agronomists only need complete their registration details and field plans once, to be available for a tailored agronomy plan in future seasons.



Visibility during lifting



THE latest iteration of the machine learning-led crop insights tool, HarvestEye, which was launched in February, is being offered to growers with subscription, rental and lease options.

Fitting to harvesting or grading equipment, HarvestEye 2.0 is a cost-effective method to deliver visibility on the size, shape and mapping variability of potato crops as they are lifted.

Manufacturers say the refreshed software and hardware in the 2.0 system delivers faster crop measurement and processing, leading to improved accuracy of detections and data reported to its online portal. The more powerful software also enhances HarvestEye's capabilities to operate more effectively in challenging environments, such as low evening sun.

Sales account manager Ed Strawson said: "HarvestEye provides unprecedented levels of reporting for growers and packers that are seeking better monitoring tools to enhance long-term planning, which helps to create more efficient and sustainable supply chains." PR

Community aid store opens with manufacturer's funding

BRITISH MP Sir Robert Goodwill, along with special guests from the community, joined the UK manufacturer of frozen potato products, McCain Foods, and Community Shop, an award-winning social enterprise that redistributes surplus food and household products, to officially open the doors to their new shop in Eastfield, North Yorkshire.

During the opening event, Tracy Reeves and Chris Parsons from the Eastfield Legacy Centre cut the ribbon, officially opening the store to the local community in Eastfield.

The store, which was opened last month is funded by McCain and the 12th in Community Shop's network of social supermarkets which provide local people the opportunity to access deeply-discounted products. The programmes also offer a mix of skills training and personal mentoring and have supported tens of thousands of people with over the past 10 years.

Items sold at the store have been donated by major retailers, brands, and manufacturers. These products have been deemed surplus and may have otherwise gone to waste. Revenue raised in the store will be re-invested back into the local area through the store's Community Hub, which will offer personal development programmes tailored to the needs of each member. These programmes range from cookery clubs and home budgeting, to interview skills and business courses.

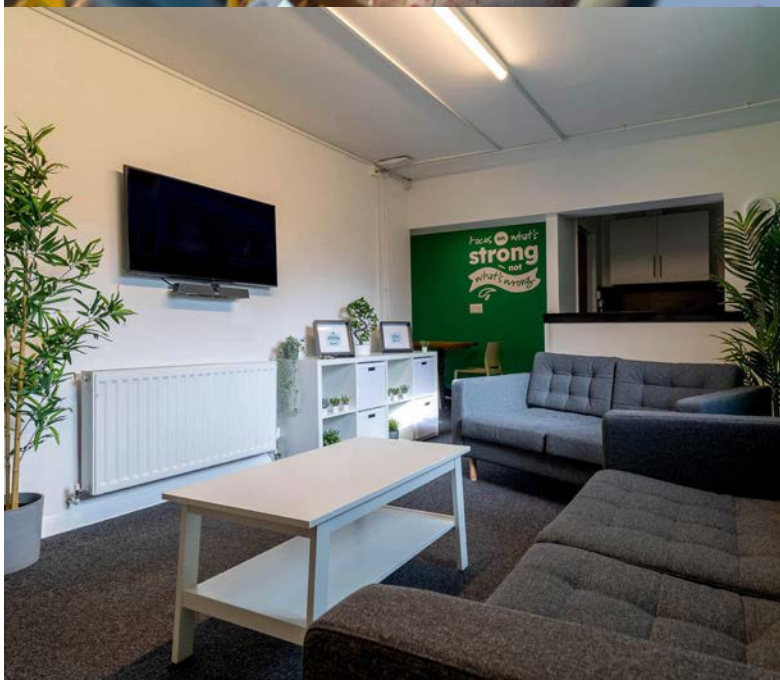
The store will also house a Community Kitchen, offering low-cost hot meals, with children eating for free every day.

Sir Robert said: "It's been a pleasure to attend the opening of Eastfield's new Community Shop and it's fantastic to hear how this will support 750 people in the local community. I'd like to thank everyone who has helped bring this new store to life, including the team at Community Shop, and McCain Foods, who have funded the project."

Gary Stott, Executive Chairman at Community Shop, said: "We are incredibly excited to open the doors of the brand-new Eastfield Community Shop. We know from our work across the UK that this store will have a big impact on those in the community who need it most. Community Shop goes far beyond just discounted food, with the life-changing development programmes equipping individuals with the skills and knowledge they need to focus on creating long-term positive change in their lives."

Jillian Moffatt, Regional President GB&I at McCain, said: "We're delighted to celebrate the opening of the new Community Shop in Eastfield - a place McCain GB has called home for over 50 years. We're proud to be partnering with Community Shop to bring this invaluable service to our local community and look forward to supporting it for years to come."

The store is located at Community Shop Eastfield, Eastfield Community Centre, High Street, Scarborough. PR



Second brand for second-hand

MACHINERY manufacturer AVR, whose products include cultivators, planters, harvesters and crop-handling models, has launched a dedicated team to oversee its used products market.

It will operate under its own brand, entitled AVR Green Select.

AVR Sales & Marketing Director, Maarten De Smet, said: "The used market is a fully-fledged market in its own right that deserves the same level of commitment. On the used market you can offer solutions for every budget and situation and give a new lease of life to older machines that are still perfectly capable of performing the tasks for which they were designed."

AVR's recent Green Select Days enabled growers to peruse its range of used machines and visit the workshop where the machines are overhauled.

Drying and box tipping innovations

MANUFACTUER of potato handling equipment, Haith, has announced it is launching several new products at this year's British Potato show.

The company will unveil its new potato dryer and the latest version of its Queen's Award-winning Rota-Tip at the November event, which it is also sponsoring.

Visitors to the Yorkshire Event Centre in Harrogate will be the first to find out about the Haith ProDry, which uses an innovative fan and belt system to speed up the drying time of potatoes. As well as being quicker than conventional sponge dryers, Haith's new system claims to eliminate potential bacteria build-up which can occur in other drying systems.

Haith's 2024 version of its market-leading Rota-Tip box tippler has been enhanced by introducing an in-feed and out-feed box stacking and de-stacking functionality, which speeds up the box emptying process and dramatically reduces forklift movements.

Sales Manager Rob Highfield said: "I think we will be busier than ever at this year's show. Our new potato dryer and the 2024 version of the Rota-tip have been developed in response to customer feedback and so should attract a great deal of interest from people looking for the latest innovations in potato handling."

The ProDry will complement the range of sponge roller dryers. It conveys washed wet potatoes through a drying tunnel where a combination of fans dry the whole surface area of each tuber.

The Rota-Tip PRO gently empties potato boxes quickly and reliably, even in harsh conditions. As the tippler is rotated around a centre pivot, the weight of the box is never lifted, and the machine is not put under pressure, which eliminates fatigue or prevents damage to both the machine and the box.

The absence of hydraulics also removes the chance of oil contamination, and as Haith only uses high-efficiency motors, which only run during the tipping sequence, the Rota-Tip offers exceptional power consumption.

The additional box handling functionality allows the operator to place multiple stacks of full boxes into the machine which are then automatically de-stacked and transported to the tipping module. After being emptied, the boxes are then re-stacked for the operator to remove from the line. The advanced system significantly improves efficiency and a reduction in damaged boxes.

Make the most of machinery and tech grants

GRANTS to help with the purchase and upgrade of machinery and technology are expected to re-open in December 2023/January 2024.

The Farming Equipment and Technology Fund (FETF) Productivity and Slurry, which is very similar to the old Countryside Productivity Small Grants scheme and aims to improve productivity and efficiency on farm applications will open online with the option to select from an eligible list and get paid a fixed amount. FETF has had two rounds so far and is expected to open for a third in December 2023/January 2024. Direct drills, camera-guided equipment, liquid fertiliser applicators and small seed drills could be eligible.

Agricultural Business Consultant Tom Cheer said: "For a 6m direct drill in round two, the amount of grant awarded was £18,720; if it was capable of applying fertiliser simultaneously it was £25,000. For N-Sensors it was £6,675 and for camera-guided inter-row vegetable weeders, a 6m machine attracted £22,745."

The list of eligible items varies from round to round but is usually added to, with the odd item removed, he said. The maximum FETF grant is £25,000 but growers can choose as many items as they like to meet this amount. "It is worth bearing in mind that for each item, a minimum specification must be met which the Rural Payments Agency is incredibly strict about."

The grant helps growers to access more technical machinery at a lower cost, according to manufacturer KRM's Managing Director Mike Britton. "KRM machinery's tine drill SMP model will be on show at the Midlands Machinery Show and has so far been eligible for the FETF grant. It promotes regenerative farming, moving the soil less, leading to less release of carbon. The grant has also covered KRM Calibrators – control systems for fertiliser spreading and variable rate application and KRM Patchwork GPS section control. Both are driving efficiency, meaning farmers use less fertiliser on the field, and less fertiliser is wasted through run-off, with environmental benefits."

Tom believes improving farm productivity is about bringing robotics on farm like robotic harvesters, sprayers and weeders, aimed at the vegetable industry, as well as autonomous tractors or "anything with a camera to sense its surroundings and decision-making capabilities."

There are also opportunities with the Adding Value grant aimed at packhouse equipment like optical graders.

Applying for FTF grants is a two-stage process involving an 'expression of interest' or 'online checker', followed up by a full application. The grant accounts for 40% of the equipment cost with 60% match funding from the farmer. The minimum grant available is £35,000 and the maximum, £500,000.

Currently closed to new applications, the FTF is expected to re-open in December 2023/January 2024.

JCB to reveal evolutions

MANUFACTURER JCB has invested in design and technology to continually improve its range over recent years and hopes to demonstrate how much more productive, powerful and fuel-efficient its machines have become at the LAMMA 2024 show on January 17th and 18th at NEC Birmingham.

JCB has built a growing portfolio of quiet and compact battery-electric E-Tech machines with zero emissions and further product releases are planned to make their debut at LAMMA 2023.

Its latest Fastrac iCON tractors will be displayed, as well as agricultural materials handling products.

JCB Agriculture Managing Director, John Smith, said: "It's important we continue to build and strengthen relationships with the future leaders of the agricultural industry which we are proud to serve and support."

Newcomers include the 173hp, 50kph Loadall 542-70 AGRI Pro telescopic handler and TM 420S telescopic wheeled loader, and the 282hp JCB 457S high-performance wheeled loading shovel.

The new JCB Fastrac iCON tractors, feature an iCON operating system introducing a fully-configurable operator environment, integrated precision technology and machine control.

JCB has also built a growing portfolio of quiet and compact battery-electric E-Tech machines with zero emissions. Most recently, the Loadall 525-60E telehandler, Teletruk boom forklifts and electric mini excavators were joined by the 403E, a compact wheeled loader, whose performance is claimed to be equal to that of its diesel-fuelled cousin, but with the advantages of electric power.

Drive-system completely hydraulic in new generation harvester

THE new generation of the GRIMME's potato harvester EVO 280 is now equipped with a completely hydraulic drive-system and has several new innovations in terms of maintenance and user-friendliness.

The new drive-system means all main webs, including the optionally available intake web, as well as the separators, can be adjusted independently of the engine speed (PTO speed) of the tractor. The speeds of all main webs, including the deviner web, are now displayed in km/h, making it easier for the driver to adjust the web speeds to the selected harvesting speed.

The speeds of the second main web and deviner web can be set independently of each other with a differential speed of up to 30%. If desired, electronic assistance systems like Speedtronic-Web and Speedtronic-Sep relieve the operator by automatically regulating all web speeds depending on the load. The operator can then easily concentrate on monitoring the machine thanks to the impressive size of the SmartView display. This new display also helps reduce fatigue when working long days.

For those who want to know exact detail of the crop, georeferenced mass (yield) mapping is offered. This data can be accessed conveniently from home via the myGRIMME portal. An electronic link to the agrirouter for further transfer to all common farm management systems is also possible.

The optimisation of the intake design ensures reduced weight as well as improved contour adaptation, which prevents build-up and blockage by haulm.

For improved crop protection against possible losses, the overlap between the first and second main web as well as between the second main web and the first separator has been increased. By optimising the positioning of the drive for the diviner web, it was possible for the manufacturer to further increase both the pulling power and the stability. In combination with the newly positioned scraper comb, the tubers are separated from the haulm even more effectively. For maximum pushing power in difficult harvesting conditions, the new generation can also be equipped with a hydrostatic wheel drive.

The 8-tonne bunker is still fitted as standard. Alternatively, the machine can be equipped with the 7.5t, patented NonstopBunker with a very large transfer distance. This makes it easy to unload during the harvesting process, even on platform trailers with two rows of boxes. The optional bunker web with canvas and all-round padding on the bunker bars ensures maximum crop protection. In addition, there is the optional lubrication system for the bunker chain, whereby oil is automatically applied to the chain links during the bunker unloading process.

In addition to the already familiar comfort packages for the picking table, the picking staff also benefit from a more attractive working environment thanks to extended comfort packages with additional cleaning spades, storage boxes and an aluminium ladder, as well as a re-designed canopy. The elimination of mechanical drive components also improves accessibility for cleaning and maintenance work, which is aided by the central lubrication points at various locations. For the coming year, a central lubrication system can also be selected as an option.

Thanks to the position lights fitted as standard, the machine contour is visible to the driver even in the dark. The new LED peripheral lighting ensures optimal illumination of the working environment.

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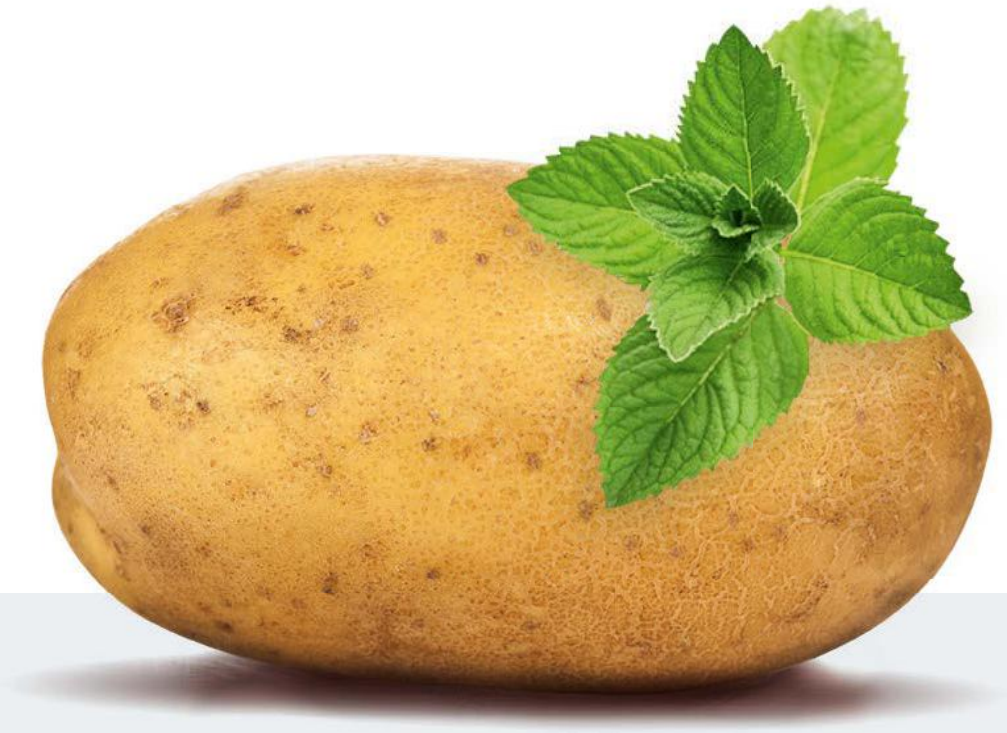

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