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In this bulletin:

- Highlights from a recent workshop on Agricultural Systems and pest management
  - Supporting coordinated messaging in Agriculture
  - Insights from Ireland
  - The EU Reset and value of coordination
  - Examples of Novel Approaches for pest management in arable and horticultural crops
- Resistance Roadshow and Resource Hub
- Novel Approaches – share your achievements

What do you think?

- What do you think the barriers to the use of novel approach are?
- How well is knowledge, data and innovation currently shared?
- Should the UK invest in cross sector coordination body?
- How do we secure effective crop protection in light of further pesticide restrictions on the horizon?

Five question feedback form to help guide next steps

AKIS Workshop 2025

Improving systems for knowledge sharing and innovation in UK agriculture

AdvisoryNetPEST Novel Approaches

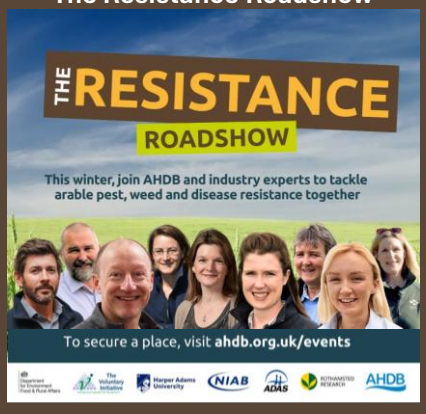
AdvisoryNetPEST

Read more about Novel Approaches on the AdvisoryNetPEST website

The Resistance Roadshow dates

- 3 December – Launceston
- 11 December – Sudbury, Suffolk
- 21 January – Worcester
- 22 January – Lincoln
- 27 January – Fife
- 10 February – Morpeth
- 11 February – Driffield Yorkshire
- 18 February – Kent

The Resistance Roadshow



Links to relevant projects and initiatives

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ADAS

Department for Environment Food & Rural Affairs

Improving systems for knowledge sharing and innovation in UK agriculture

On Thursday 20 November, ADAS brought together researchers, industry, farmers, and policymakers for a constructive workshop exploring what an Agricultural Knowledge & Innovation System (AKIS) could look like for the UK, and how it could be used to support sustainable crop protection. Organised by ADAS and hosted at NIAB Sophi Taylor Building in Cambridge, the event featured insights from Teagasc on Ireland's integrated AKIS, updates on the EU reset and its implications for crop protection, case studies of novel arable and horticultural approaches to crop protection, and two lively panel discussions on knowledge exchange, emerging technologies, and barriers to adoption across the sector.

Context & Objectives

The workshop focused on the benefits of fostering a UK framework for knowledge sharing and innovation, using crop protection as an example theme. As part of the day's activities, barriers and enablers for collaboration, innovation uptake, and policy influence were discussed, as well as a mapping exercise to better understand the roles of different organizations supporting crop protection in the UK.

Opening Remarks

Mario Caccamo (CEO, NIAB) highlighted NIAB's translational mission—turning plant science into practice. He emphasised gene editing opportunities post-legislative changes and NIAB's role in bridging research and farm-level adoption.

Rosie Bryson (ADAS) stressed challenges in UK agri-education, fragmented knowledge networks, and need for a national knowledge exchange capability. Referenced the UK **Feeding Britain Sustainably to 2050: The 30:50:50 Mission** (increase production, reduce emissions, improve sustainability).

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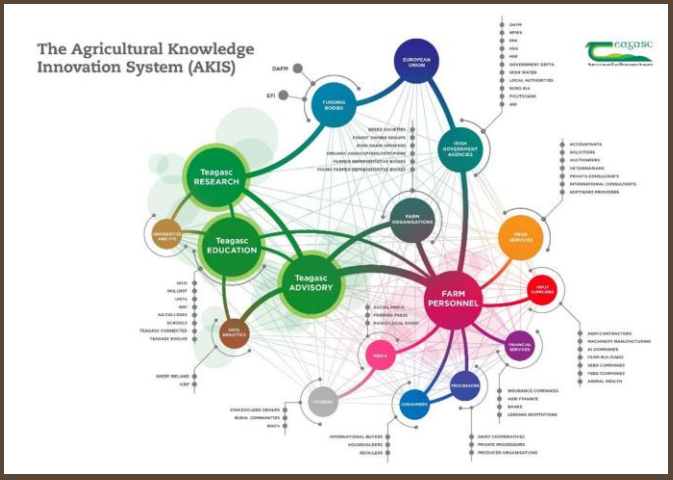
Agri-Knowledge and Innovation Systems in Ireland

Mark Gibson, Head of KT Outreach and Innovation at Teagasc, outlined the role they play operating as a core component of Ireland's AKIS, with a vast network of advisory offices, research centres, and educational institutions, ensuring integrated knowledge transfer and innovation support across the agricultural sector. Focusing on collaboration and digital resources, they can direct knowledge between researchers, advisors, farmers, and the wider stakeholders to enhance agricultural productivity and sustainability. A clear example of this is **Teagasc's Signpost Programme**, which leads national efforts to reduce greenhouse gas emissions by creating a network of demonstration farms, advancing climate research, and providing tools and advisory campaigns to support farmers in adopting sustainable practices.



This figure maps the connections between different agricultural organisations across Ireland, showing how knowledge and innovation can flow between groups through the mapped system.

The EU Reset, and Technology Transfer to Co-design

Hazel Doonan, AIC, presented an outline of the UK's post-Brexit "EU Reset" strategy and its implications for crop protection and agronomy. She highlighted the Government's commitment to improving UK–EU relations, with the May 2025 summit marking a key milestone. The following "Common Understanding" agreement covers multiple topics like maritime safety, health security, energy cooperation, and recognition of professional qualifications, alongside agricultural priorities such as Plant Protection Products (PPPs), Maximum Residue Levels (MRLs), and SPS (Sanitary and PhytoSanitary) standards. Benefits of the proposed SPS Agreement include improved EU market access and reduced export complexity, while challenges involve a loss of regulatory autonomy, transition gaps in available crop protection solutions, and with limitations on exemptions. The timeline anticipates negotiations starting late 2025 and legislation by 2027, with AIC emphasizing the need for smooth transitions and avoiding supply chain shocks in crop protection.

Susannah Bolton, Independent Consultant drew on her extensive experience in agricultural knowledge exchange to provide insights on the importance of listening, recognising researchers and advisors as agents for change, and valuing farmers as innovators and communicators. She highlighted the role of advisors in contextualising knowledge within the business realities of farming, the value of behavioural insights, and the influence of supply chains on risk and reward. Finally, she underscores the need to consider systems and scale when implementing solutions, advocating for more integrated and participatory strategies in agricultural innovation.

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Novel Approach to pest management

As availability of pesticides continues to decline, there is a need to transition towards more integrated pest management approaches. As part of the AdvisoryNetPEST project, **Novel Approaches** are being shared across Europe. These Novel Approaches contribute to effective pest management while reducing the need for, amount of, or human/environmental risk posed by pesticides applied. As part of the workshop, six Novel Approaches were summarised, three in arable crops and three in horticultural crops.

Arable Novel Approach to pest management

For Barely Yellow Dwarf Virus (BYDV), up until 2019 management had relied on neonicotinoid seed treatments and pyrethroid sprays. Following the ban of neonicotinoids in 2019, and increases in insecticide resistance in the aphids that spread the virus, more sustainable solutions are needed. Novel strategies include **Decision Support Systems (DSS)** like T-Sum models for aphid flight prediction, and BYDV-tolerant varieties. Results from in-field comparison of approaches show that the use of DSS and tolerant varieties support good decisions on avoiding unnecessary insecticide applications, and targeting applications to achieve good control where there is a risk to the crop. Find out more about this work at AHDB Strategic Farm East.

Potato late blight can destroy whole crops if poorly controlled; management typically involves 12–15 fungicide sprays per season in Belgium. High levels of fungicide application is driving selection of fungicide resistance in this disease. New resistant or tolerant varieties can halve spray requirements while maintaining disease control and achieving competitive yields. However, scaling these varieties requires coordinated efforts across the supply chain, since these new varieties do not always have the right traits for consumers.

For yellow rust, outbreaks can cause severe yield losses. Current varietal resistance and a good range of fungicides typically keep this disease in check; however, infestations can emerge and take hold quickly. Observation networks and early warning systems in Spain enable targeted field inspections and fungicide applications according to need. Challenges include maintaining reliable observer networks and open data platforms.
You can find out more about this Spanish network here.

Links to relevant projects and initiatives

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Novel Approach to pest management

Horticulture Novel Approach to pest management

Alyssum companion plants can be used in strawberry crops to enhance biological control of thrips. Alyssum acts as a banker plant, providing pollen for predators like *Orius laevigatus*, improving their establishment and effectiveness against immigrant thrips. Trials demonstrated that this method can complement existing IPM programs, reduce reliance on insecticides, and support biodiversity, though practical implementation requires careful planning and can be enhanced with supplementary food products.

Another innovation is the deployment of UV-C robots for powdery mildew control in glasshouse crops such as strawberries and field crops such as courgette in Belgium. This technology offers an environmentally friendly alternative to fungicides, reducing pesticide use and improving worker safety. While investment costs are relatively low, uptake depends on market incentives and grower confidence, as yield impacts can vary and some specialised training is needed for set up.

The third horticulture novel approach presented at the workshop was biocontrol using *Dalotia coriaria*, a predatory beetle effective against thrips and sciarid flies in ornamental crops in France. This approach can reduce pesticide use and cost of other biological controls, though compatibility with other biocontrol agents must be managed. Challenges include variable pest control results and additional labour requirements to rear the predatory beetles.

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Novel Approach to pest management

Across these examples, common themes emerge: the need for robust networks to share knowledge, scaling up novel approaches, and addressing barriers such as cost, training, and market acceptance. These strategies align with sustainability goals, aiming to balance crop protection with environmental stewardship and profitability. Overall, the innovations showcased demonstrate promising steps toward integrated pest management and reduced chemical dependency, fostering resilience and sustainability in agriculture.

Key insights from the workshop feedback

Workshop delegates were asked to provide feedback following the meeting. Based on the 13 Reponses received so far:

Recurring Themes in Next Steps
Multiple respondents emphasised the need for central coordination of knowledge and data sharing and innovation in the UK, reflecting discussion in the room about the strength of UK knowledge exchange – but its fragmentation across regions and sectors. Direct engagement of farmers and their advisors was seen as crucial for long-term success of any coordinated approach.

Policy Recommendations
Several respondents requested government clarity on how coordination could be better facilitated, and how applied research could be better supported and connected with on farm results. Concerns were raised about the impact of the EU-reset without a clear transition plan in place, and the associated regulatory challenges and competitiveness.

Additional Comments
Risk management for growers and agronomists was a recurring concern; ultimately the risk of ineffective management lies with farmers, but has impacts on food security – how can this risk be more evenly shared across supply chains?

What do you think? ***5 Question Feedback Form***

- What do you think the barriers to the use of novel approach are?
- How well is knowledge, data and innovation currently shared?
- Should the UK invest in cross sector coordination body?
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Feedback form

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AHDB Resistance management hub

The Resistance Roadshow will present the latest guidance on the management of resistance threats to help you protect the long-term efficacy of pesticides. AHDB have selected some top picks on resistance management from the **AHDB Knowledge Library**, below.

Fungicide resistance

In the 1970s, systemic fungicides with specific modes of action were introduced. Ever since, the number of fungicide resistance cases has gradually increased. However, most fungicides are still very effective against the target organisms for which they were developed. Resistance risks depend on the pathogen species and mode of action group. For example, when fungicides affect many physiological processes within the target pathogen (multi-site products), they are much less prone to resistance.

- The Fungicide Resistance Action Group (FRAG-UK)
- Fungicide Resistance Action Committee (FRAC)

AHDB guidance

- Fungicide resistance management in wheat pathogens
- Fungicide resistance management in barley pathogens
- Fungicide resistance management in oilseed rape pathogens
- Fungicide performance and programmes
- Cereal disease management guidance
- Oilseed rape disease management guidance

Septoria tritici in winter wheat

Insecticide resistance

Following the introduction of synthetic organic insecticides in the 1940s, it did not take long for insecticide resistance to be recorded. By 1947, resistance to DDT was confirmed in houseflies. With every insecticide introduction, cases of resistance developed in key pest species two to 20 years later. Resistance increases fastest in situations where insects reproduce quickly, there is little or no immigration of susceptible individuals and pests are subjected to frequent sprays with the same insecticide. Additionally, some pests (e.g. aphids in protected crops) may originate from genetically diverse, sexually reproducing, populations on imported plant material. Resistance is present in numerous crop pests, including key cereal aphids and cabbage stem flea beetles, with insecticide options often extremely limited.

- The Insecticide Resistance Action Group (IRAG-UK)
- Insecticide Resistance Action Committee (IRAC)

AHDB guidance

- What causes insecticide resistance in crop pests?
- Mechanisms of insecticide resistance in crop pests
- Top tips for the management of insecticide resistance risks
- Pest management guidance

Myzus persicae, peach potato aphid

Herbicide resistance

Herbicide resistance was first identified in black-grass in 1982. There are now many examples of herbicide resistance in grass weeds. This now even includes glyphosate resistance in some Italian rye-grass populations – the first UK weed to develop resistance to this commercially important mode of action (announced in 2025). For broad-leaved weed (BLW) resistance, most cases are associated with the ALS-inhibitor group of herbicides (first identified in the UK at the turn of the millennium). For weeds, it is particularly important to account for the resistance profiles in fields (in addition to all resistance risks) when developing herbicide programmes.

- The Weed Resistance Action Group (WRAG-UK)
- Herbicide Resistance Action Committee (HRAC)

AHDB guidance

- Introduction to herbicide resistance in arable weeds
- How to detect herbicide resistance in arable weeds
- Top tips to reduce herbicide-resistance risks
- Weed management guidance

Blackgrass

IPM hub

Access key AHDB resources via our integrated pest management (IPM) hub, including resources from the Recommended Lists for cereals and oilseeds (RL). Variety choice forms the foundation of IPM.

- Integrated pest management (IPM) hub

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Novel Approaches

Are you doing something different? We'd love to hear from you!

Working with a Europe wide initiative to reduce pesticide inputs while maintaining productivity, we are looking for examples of 'novel approaches' to crop protection.

A crop protection farming practice is a 'novel approach' if:

- It contributes to the reduction of the use and risk of pesticides, *and*;
- It is not widely used yet, but has been tested on a few farms

If you are doing something different, and would be happy to share your experience with others in the UK and Europe, please get in touch - or send details directly to the group using the link provided >>>

Share your novel approach here!

- **Read more about Novel Approaches here**

YouTube

Follow AdvisoryNetPEST on YouTube for more insights

10 videos available now about the project expectations and progress

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