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A strategic approach

Arable Scotland

Now in its third year, Arable Scotland aims to bring together key industry players to discuss outlook and opportunities for Scottish growers. CPM joined the virtual event.

By Charlotte Cunningham

With online events now becoming somewhat the 'norm', this year's Arable Scotland event once again took place in a virtual format — enabling headline industry figures and experts to come together to discuss some of Scotland's biggest challenges and solutions, despite lockdown restrictions in the country.

AHDB strategy director for cereals and oilseeds, Dr Martin Grantley-Smith, used the event as an opportunity to talk through some of the levy board's key priorities over the next 12 months.

These include:

- Maintaining profitability through changes in the subsidy regimes and the market as it reforms — identifying focus areas for growers, particularly in terms of finances.
- Helping growers and their advisors cope with pest, weed and disease issues in light of the reducing range of plant protection products.

- Supporting the use of integrated pest management (IPM) and how to build that into wider farm activities.
- Meeting the new environmental challenges — particularly with regards to water and carbon — and looking at how growers can use data to help with this.
- Trying to ensure a continuous supply of qualified staff — one of the biggest challenges.

A tall order

But with a seemingly tall order in front of them, how are they going to achieve that? Martin says this will be done by tackling three main areas. “Firstly, the Recommended List will continue, but we'll have an increasing focus on IPM and dealing with plant diseases and pest issues.

“Secondly, we will continue to utilise the monitor farm networks for getting information out to growers, and use the strategic farm network to undertake farm scale and field scale trials.

“Finally, we will also be continuing to invest in research and development — again, with an increasing focus on IPM and helping growers adopt good practice.”

And pulling out the benefits of IPM was Fiona Burnett, SRUC, who says this year has been another good example of why integrated management is so important. “It has been another season of extremes. We've had new races of yellow rust, but lower levels of other disease.”

Fiona flagged up some of the tools available to growers online, as well as how they can use them to aid better decision making.

“We've got lots of information from the SRUC trials and now we're able to start layering the perhaps more 'acceptable' IPMs — like varieties, fungicide doses and timings as well as biological solutions.

“We know we've got these tools but then it becomes about how and where to apply them — with confidence — so that



Martin Grantley-Smith says AHDB will have an increasing focus on IPM and dealing with plant diseases and pest issues going forward.

we are more resilient and predictable within our approach.”

Fiona says there is also a new IPM planning tool available on the Plant Health Centre website which features separate plans for arable and for grassland — with horticulture and potatoes still to come. “Again, by recognising how tailored IPM has to be, it lets farmers really plan their approach and then, more importantly, score it (which is a new feature) to come up with a baseline score which they can use as a benchmark to explore what they can do to increase their score over the years.

“The hope is this will be a really useful tool which should start some good discussion between farmers and their agronomists.”



Euan James reckons legumes have an important role to play in solving the nitrogen crisis

Making carbon pay

With Scotland's legally binding commitment of achieving net zero by 2045, as well as a 31% reduction in emissions required by 2032, Dr Ken Loades from the James Hutton Institute has been looking into how growers can make carbon pay.

“Such a reduction is going to require a transition, and that transition is going to have to be just — in other words, there has to be equal opportunities for everyone and support for everyone to achieve those objectives.”

Ken says that a report which came out in April this year, published by HSBC with the work carried out by University College London, highlighted that there were a few main approaches for achieving net zero.

“Three of those were directly on farm, but the other looked at improving productivity and efficiency,” he says. “This includes IPM, but

She adds that Scottish growers are already making significant progress. “When we look at the prototype of those baseline scores, they score between 60-85%, so we've got good uptake of IPM already. But it's about how we lift 60% to 85%, which is where it becomes interesting.”

New projects

This ethos links to a new project, also funded by the Plant Health Centre. “Here, we're really looking at tailoring the best information sources for Scotland. This will be important for both farmers and agronomists and what we're trying to look at is what influences decision making and relate that back to the actual pest and disease risk.”

From that, Fiona says they will then be able to look at the really influential sources of information and tailor them appropriately.

Strategies around arable rotations are an integral strand of IPM, and discussing this in more detail was Dr Tracy Valentine, James Hutton Institute.

Tracy has been looking specifically at arable rotations and sustainability, particularly in terms of how the soil is behaving in light of rotation decisions, as well as how they go about integrating options like cover crops within their cash crop system.

Dr Euan James, also from James Hutton Institute, joined the discussion to explain the findings of research into the value of legumes.

“As you know, the nitrogen crisis is a major issue worldwide, particularly the over application of fertiliser.

“Nitrogen use efficiency is very low for

also protection and restoring habitats as well as the soil itself.”

The final approach stated that growers shouldn't overlook the role that society has to play when it comes to achieving net zero, says Ken. “This could be through significant changes to their diet, namely opting for a diet that is less carbon intensive.”

However, Ken notes that achieving net zero is not just about reducing carbon, but also about storing more of it. “However, I believe that in industry we must understand where the barriers exist for doing this — as well as where there are opportunities and how they can be applied to help meet targets.

“So my question is, do we have the right tools to do this at the moment? And if not, what do we need to be able to achieve this in the future?”



Fiona Burnett says this year has been another good example of why integrated management is so important.

most crops and at least half of the fertiliser you apply either gets lost into the atmosphere as greenhouse gases or gets leached into the ground water. So what do we do about this?”

One of the solutions that Euan thinks is important is the greater use of legumes. “The reintroduction of legumes into our cropping systems is key. Levels have declined enormously over the years, and we think this needs to be reversed.

“Not just because of the issues with nitrogen fertiliser, but also because they are important for human health and improving our nutrition.”

Euan specialises in nitrogen fixation, so one area he is particularly interested in is how legumes interact with bacterial symbionts in the soil and fix nitrogen. “What we've been doing over the past few years is actually measuring natural fixation in the field,” he explains. “Over a four-year period, we've been looking at how much nitrogen they can fix in total and also how much nitrogen they can contribute to the crops that follow on from the legume.”

In the case of faba beans — used frequently in Mediterranean and Middle Eastern cuisine — Euan says they have measured at least 300kg of N/ha can be fixed — which is an enormous amount. “This isn't an estimate or projection. This is real data.”

Beyond this, Euan says it is possible to get up to 100kg — or more — of nitrogen left in the soil for the following crop. “This also represents a potentially enormous saving. If you followed on faba beans with wheat or barley, for example, then in theory you can apply 100kg less nitrogen. This has both cost and environmental saving benefits.” ■