Winning ways Keep fighting the battle against blackgrass

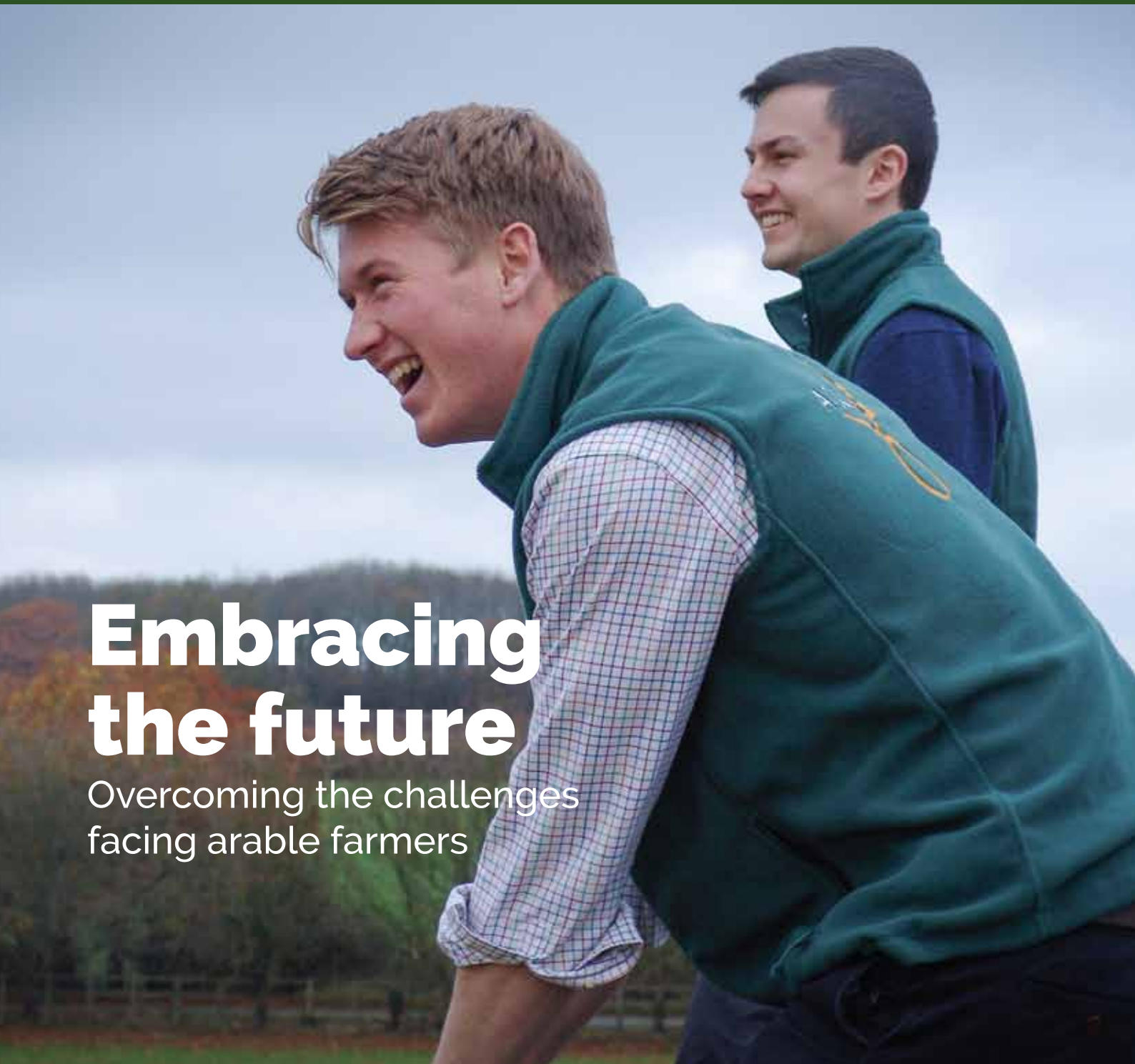
Big data How independent trials mean better septoria control

Herbicides Take action to reduce weed control costs in sugar beet

AICC

the Independent Agronomist

ADVICE YOU CAN TRUST FROM THE ASSOCIATION OF INDEPENDENT CROP CONSULTANTS | **SUMMER 2018**



Embracing the future

Overcoming the challenges facing arable farmers

HOW IS AICC GOVERNED?

The AICC is governed by a Council of Management who are Directors of AICC managed by the CEO. There is a separate trials team with representation from each trials region.

TRAINING AND SUPPORT

Training is staged in seven regions by coordinators which provides members with important technical product updates and other issues related to the industry issues.

In addition, specialist training is staged, for example, in specialist crops such as sugar beet and we collaborate with industry partners to provide bespoke training in addition to the academy.

AICC members gain discounts on industry schemes and professional indemnity insurance. They also receive help and support over business and industry issues.

SURVEY POLICY

In 2017, AICC published a survey policy in response to members complaints regarding constant and sometimes intrusive requests which underestimate the value of the information provided.

AICC recognise that members are at liberty to take their own view on this but the directors of AICC Directors have encouraged members to only undertake surveys that have been sanctioned by AICC.

Furthermore, ICD (Independent Crop Data) will be pursuing contracts as the only body with independent agronomists across the country, with carefully chosen partners.

AICC TRIALS

AICC has had a long history of running in-house trials for the benefit of its members. The portfolio of trials projects undertaken and regional extent of these member trials has been significantly increased in the last nine years.

The AICC Trials team comprise a committee of highly proficient and technically driven established agronomists from the South, West, East, Central and Northern regions of England along with Scotland.

AICC Trials run a national series of independent field trials that are principally involved in testing and comparing the performance of current and near market agrochemicals. Our trials also focus on specific agronomic issues such as nitrogen response trials, the role of micronutrients, and the use of adjuvants.

In addition, we also run a number of regional variety trials looking to compare the performance of new and established varieties – currently the main focus of these trials are early drilled winter wheat varieties, along with trialling the tolerance of winter oilseed rape varieties to Verticillium wilt.

AICC Trials data is turned around quickly to maximise the benefit to members, and external manufacturers have praised the efficiency and professional way we handle trials. AICC Members are able to attend a detailed results session at our Annual Conference each year as well as inspecting trials sites during the season.

This resource is one of the many pools of information that AICC member use (see infographic on page 7) but there is no doubt that access to these extensive independent trials results and innovative technology is key to being at the forefront of delivering technical excellence and providing AICC members with the tools to deliver the most cost effective advice to growers.

THE FUTURE

AICC takes the view that it is healthy to have a near 50:50 split of the advisory market and expects to see the independent share increase. The current climate is enhancing this independent thought process. Independent of Europe, independent in thought, why wouldn't a grower wish to have an independent adviser?

WELCOME

AICC Chief Executive **Sarah Cowlrick** explains how the AICC provides comprehensive agronomic advice to farmers and its members

Proudly serving growers with independent advice

Established in 1981 and now with 258 members, the Association of Independent Crop Consultants (AICC) has a UK market share approaching 50% when it comes to delivering arable advice.

Although each crop consultant is a member in his or her own right, some 82% of members are now affiliated in one form or another to a group – giving them the economies of scale to provide in-house expert advice to clients, cover for each other and the ability to recruit trainees.

The AICC provides a unique forum for the exchange of technical information and reinforces the independence of its members. Members adhere to a strict Code of Conduct which underpins the whole ethos of **independent advice**.

Independent crop consultants are employed by their farmer clients to give all-round agronomic and strategic advice, and are paid by a separate consultancy fee – usually on an area basis. Advice is comprehensive and agronomic. It includes core crop protection, crop nutrition, environmental issues, cultivations and strategic planning.

AICC agronomists understand that growers choose to buy advice or not. A core of exclusively independent, bespoke technical advice – backed by independent research and not linked to sales – represents exceedingly good value and is underpinned by truly up-to-date agronomic practice.

Our clients are free to purchase products from wherever they choose, including through buying groups, at competitive prices. Our openly transparent system enables growers to differentiate between what they pay for advice and what they pay for crop inputs.

The AICC champions causes on behalf of its members. We encourage a more collaborative approach to protect the chemistry we currently have but at the same time embrace the rapidly developing cultural and innovative technologies to support agronomists and farmers in the future. As our chairman explains on pages 4-5, the AICC champions key industry issues.

We believe that employing an AICC crop consultant enables farmers to receive the best possible independent agronomic advice – with the ability to purchase their crop inputs at the most competitive prices.

ASSOCIATION OF INDEPENDENT CROP CONSULTANTS (AICC)
E: info@aicc.org.uk **W:** www.aicc.org.uk

The Independent Agronomist, developed by Sarah Cowlrick and produced by Ruralcity Media on behalf of the AICC.

INSIDE

Looking to the future – today

The potential withdrawal of agrochemical products should been seen as hurdle rather than an insurmountable obstacle, says AICC Chairman **Sean Sparling** ARAgS

It is important to look to the future – especially following what has been a frustrating and sometimes downright disheartening year.

We finally managed to keep glyphosate for five more years – despite no scientific justification for anything less than a 15 year renewal. Yet at the same time, it now appears we have lost all outdoor use of neonicotinoid seed dressings – even in crops rarely visited by bees.

Because of this, it may well be inevitable that insecticide use will increase this autumn – due to a potential inability to control soil pests and virus vectors thanks to the limited armoury of agrochemicals we have left.

But we need to see this as a challenge and a hurdle rather than an insurmountable obstacle. We are well-placed as an independent sector to reassure consumers and politicians alike that pesticide use will remain a last resort as we continue to help take UK agriculture forward.

> “Being independent isn’t about doing your own thing, it’s about doing the right thing on your own.

In the pipeline

Yes, it will be difficult and complicated. But R&D companies are developing new insecticides, new fungicides and new herbicides at great expense. The tools are therefore in the pipeline for us to use. Hopefully they will become available quickly enough.

Nevertheless, the most concerning aspect of the last 12 months is that we have now apparently entered a new and significant era in agriculture: a worryingly “post science” era where the person who shouts loudest gets the ear of the politicians.

We seem to now find ourselves in a situation where the shouters seem to get the policies pushed through. Regulatory decisions are apparently made by politicians and not by the conclusions of replicated, verified, unbiased studies carried out by independent scientists.

As independent advisers and consultants, it is therefore our job to fight for the future of our industry and to get the public back on the side of domestic food production.

As an independent sector, we must reassure consumers that plant protection products are only used when necessary – and that they pose no threat to public health, or the health of operators, the environment, our soils, our water or to anything else.

The future of food production in the UK is in our hands. As independent crop consultants, we can show that plant protection products are vital to a science-based approach to crop production – and to producing safe, affordable, high quality food.

Responsible production

Unbiased, independent advice coupled with a Integrated Pest Management (IPM) methodology is the norm on almost 50% of land in crop production in the UK – and consumers need to know that their food is produced responsibly.

I have always believed in IPM as the correct way to grow crops. It encompasses and embraces a sensible, holistic, scientific approach to modern

agriculture and in particular to the use of plant protection products to produce safe, nutritious and affordable food.

It is easy to think that IPM only applies to insecticide use. But in reality, IPM covers everything from insecticides, herbicides, fungicides, biocides, nutrients, soils, rotations – in fact, every aspect of how we grow crops and that list just goes on.

As independent agronomists, we practise IPM every single day by never knowingly spraying unnecessarily, always working to thresholds and always thinking about the bigger picture. IPM is just another tool that enables us to work alongside nature rather than against it.

Every independent agronomist out there knows he or she could command a much bigger salary by working in the sales/distribution sector. But the unbiased flexibility to choose what's right for the crop without the constraints and implications of imposed sales targets is far more important.

As independent consultants and advisers, we are responsible for advising on almost 50% of UK food production. But it's important to remember that being independent isn't about doing your own thing, it's about doing the right thing on your own.

As a result, independent advisers are highly sought-after – not just in terms of on-farm agronomy where our members have never been busier or more in demand, but also as a vital source of unbiased opinion for policymakers and their advisers.

The opinion of independent advisers is increasingly sought-after by the media too – as it finally dawns on commentators that conventional agriculture and organic farming are not the only two options for food production – and independent crop consultants are at the intersection of each.

Growing population

A century ago, all food production was organic in the UK, because manufactured fertilisers and synthetically produced plant protection products hadn't been invented. Yet we still struggled to feed our population of 32 million people.

> We need to see this as a challenge and a hurdle rather than an insurmountable obstacle.

Fast forward to the present day, and there are 69 million people in the UK. They are fed safe, affordable, high quality food produced by a modern farming industry which has grown and evolved from that organic industry 100 years ago.

There are 4,667,000ha of arable crops in the UK and just 57,000ha of those crops are produced organically. That means that just short of 4,607,000ha or 98.78% of all cereals, grains, pulses, root vegetables, vegetables, salad, fruit and nuts are produced conventionally.

In fact, 86% of all of UK organic land is grassland and doesn't produce arable crops at all. There is therefore a huge weight on our shoulders to ensure we continue to use all the tools at our disposal to carry on producing safe, affordable, high-quality and sustainable levels for consumers.

As we plough forward – excuse the pun – we must recognise the responsibility we bear in ensuring that the public are comfortable with how we produce food, both in the UK and in the wider world. Agronomy with a conscience is what we must all strive for on a personal level.

The products we use and the way we use them pose a negligible risk to wildlife, water, the environment, operators and consumers. In fact, one study showed that the risk from pesticide residues in food is about the same as drinking a glass of wine every seven years.

We should be proud of our industry and the job we do. Not using plant protection products would lead to drastically reduced yields and a reduction in plentiful and safe food. It would also result in a plethora of natural toxins suddenly proliferating in that untreated food.

Without plant protection products, costs would rise as food availability declined. And the result of too little food for too many people leads to only one outcome. With 7 billion mouths to feed across the world, policy-makers and critics would do well to remember that we all need to eat.

How the way varieties are selected is changing

With variety selection for next season at the forefront of growers' minds, more emphasis should be placed on strong all-round attributes to achieve consistent performance throughout the rotation and across seasons.

That's the view of AICC member and Strutt & Parker director Jock Wilmott, who has seen increasing variability in yields over the past decade in historic data taken from the group's farms across the UK.

To understand why, it is necessary to consider the background pressures being heaped on crops such as wheat and oilseed rape.

In the case of wheat, the cultural control of blackgrass has seen drilling dates pushed back to help aid its control, in most cases reducing overall crop yield potential.

Oilseed rape has also suffered from increasing flea beetle attack and disease pressures from growing the crop in close rotation.

This is twinned with some extreme seasonal conditions – something witnessed in the infamous season of 2012 – and if this becomes more common, a farm's rotation needs to be made more resilient and varietal choice can help achieve that.

"If we are going to continue having 'quirkier' times, future variety choices will need to have a more robust set of traits," explains Mr Willmott.

"You need to know that when you put them in the field they are going to perform to expectation and give you the consistency you need over several seasons," he adds.

Important traits

While yield remains an important consideration, disease resistance is now high up the list of priorities, particularly for septoria in wheat and light leaf spot and phoma in oilseed rape.

As wheats are now being drilled later, they also need to be suited to establishment in October and beyond and still get to harvest in good time. These crops can be planted in less than ideal conditions so a robustness to cope with compromising nutritional situations is a real advantage.

In addition, characteristics that minimise yield losses in a range of crops, such as lodging resistance, sprouting resistance in wheat, pod shatter in oilseed rape and brackling in barley will ensure crops hold on to quality and the combine picks up as much grain as possible.

"Physically being able to harvest what you've produced and in good condition is a huge part of achieving consistency in unpredictable seasons," adds Mr Wilmott.

JOCK WILMOTT
Strutt & Parker

"Physically being able to harvest what you've produced and in good condition is a huge part of achieving consistency in unpredictable seasons

Marketability is key consideration and creating links to established local end users such as mills or processors and growing the varieties that they demand will also help maximise returns and provide premiums, adding extra security in volatile times.

Examples would include malting barley for local breweries, pearling barley, wheats and oats for cereal makers and specialist oilseed rape varieties such as high erucic acid (HEAR) types.

Breeding advances

Mr Wilmott says that wheat breeding has come a long way over recent years, maintaining yields despite many growers shifting towards later drilling.

This can be attributed to the more robust attributes, including disease resistance, of many of the latest varieties to make the Recommended List, with the bonus of many having quality characteristics that can fetch a premium, too.

There have also been significant improvements in winter and spring barley and oilseed rape varieties, but less so in pulses, where progress in traits appears to have flatlined.

"We also need to get better at growing peas and beans, because at present, it is difficult to scale their areas up.

"Pulses are needed to reduce the intensity of cropping of cereals and oilseed rape and move to a five or six crop rotation to solve some of the issues with oilseed rape, blackgrass and soil health.

"It's currently a pipe dream, but something the industry should work towards and an area where you will get more out of independent advice, as we are into crop production, not crop protection," adds Mr Wilmott.

AICC MEMBERS

- INTERPRET THEIR OWN DATA
- MAKE OWN CONCLUSIONS BASED ON TECHNICAL MERIT
- ARE NOT INFLUENCED BY PRODUCT SALES

Valuable information

AICC consultants have a wealth of experience and cover all parts of the country. Agronomists are on hand to discuss issues such as the impact of rotation and variety choice on weed and disease management – and ways of controlling costs this year and into the future.

The AICC champions causes on behalf of its Members and is encouraging a more collaborative approach to protect the chemistry we currently have. At the same time, we embrace the cultural and more innovative technologies that are rapidly developing to support our farmers.

Keep fighting in the ongoing war on blackgrass

DAMIAN MCAULEY
Indigro

Variable blackgrass control results in wheat crops this season is providing growers with a timely reminder not to relax in the fight against the widespread grassweed.

Northamptonshire-based Indigro agronomist Damian McAuley is seeing some very good control this spring where growers have got things absolutely right, but also some "untidy" areas where small errors have caused large problems, despite this being as good a season for grassweed management as you could hope to get.

"A mild, open autumn allowed later wheat drilling and pre-emergence herbicides to be applied to well-prepared seedbeds. We were also able to apply a follow-up contact or residual top-up applications in good conditions and in a timely manner," says Mr McAuley.

"That was followed by a cold winter to maximise herbicide persistence and further control already weakened weeds but I think it is fair to say despite that, there's still some unsatisfactory control in places," he explains.

At a time when growers are assessing blackgrass levels and planning control strategies, Mr McAuley offers a reminder of key components of an integrated approach to get on top of blackgrass this autumn and beyond.

1 Healthy soils

Blackgrass is a marsh-loving plant, so improving soil health and condition will create an environment that won't favour the weed at all.

Use manures and composts to improve soil structure and biology, making soils more resilient and allowing timely cultivations and late drilling, even in challenging seasons. Also consider cover crops to help improve soil structure.

Remember that independent advisers are not monetising any soil health advice or biological products, only offering guidance on good, old-school farming methods and all as part of the service.

2 Assess risk

Use a traffic light system to attribute risk to fields destined for winter wheat, where heavily infested fields are red, amber is less severe and green where blackgrass is minimal.

Where fields are red, winter cropping should go out the window altogether and a switch to a spring crop will allow growers to reduce the weed seed bank with stale seed-beds ahead of drilling.

With an amber, there is a need to stack cultural and chemical controls, including delayed drilling to maximise pre-drilling control, appropriate cultivations, high seed rates and a competitive cultivar. You also need to commit to a full herbicide stack, plus a follow-up spray, which will cost about £120-£130/ha.

Green fields are trickier, as they may be relatively clean, but if the farm has a history of blackgrass there is still a need to drill as late as possible and still use a pre-emergence stack, although it could be acceptable to omit Avadex or perhaps a post-emergence application to cut cost.

Remember that small issues can soon become big problems, so knapsack spray or rogue out any isolated plants that might have germinated within low-pressure sites.

3 Cultivations

Cultivation strategy has a big influence on blackgrass control. Whether it is the kit being used or the location of the seed in the profile, it is essential to be select the right strategy for each situation.

In a plough-based system, if ploughing has been carried out for many years and blackgrass is creeping in, stop spinning the seed and use it strategically. You want to bury seed and leave it to deplete, rather than continually bringing seed back up.

On the flip side, if you have a clean surface, shallow is where you need to be. Move as little as possible and deal with any blackgrass germinating on the surface.

If direct drilling, it needs to be managed carefully. You should tend to drill earlier to make the best of conditions, but as you are not stirring up more seed, you have less pressure from the start.

Think about crops that can help with soil conditioning for direct drilling, with linseed or beans leaving a good structure for no-till.

Where cultivating, do it as early as possible and leave the soil alone until drilling. "Tickling" the surface and bringing up more flushes only risks increased pressure on subsequent herbicides.

4 Herbicides

The final consideration is the herbicide selection and go-to actives include flufenacet, pendimethalin, diflufenican, prosulfocarb and tri-allate. The latter has been shown to be particularly useful this year.

Some will recommend extras such as picolinafen and ethofumesate, but remember that herbicide choice is about value for money.

All the actives above, except tri-allate, will offer about 1% control from each pound spent. For example, a full rate Liberator at £35/ha will give you 35% control.

Beware spending increasing amounts on unnecessary actives and adjuvants which might give you a fraction more control, but won't give you as much bang for your buck as the main actives.

How to achieve cost-effective ear complex control in wheat

RICHARD POOLEY
Prime Agriculture

An independent approach to T3 ear wash fungicides offers growers some useful cost savings, with straight products at the correct application timing offering comparible control to more expensive co-formulated choices.

Prime Agriculture's Richard Pooley, who advisers growers across East Anglia, says as an independent agronomist he is always impartially reviewing products in the marketplace on a number of criteria, including technical merit, tank mix ability, label restrictions and cost.

He then decides on the choice that is best for each client's business and it is no different for T3 fungicide timing in winter wheat, where growers are aiming to control the ear disease complex of Fusarium and Microdochium species and sooty moulds.

"Examples of active ingredients used at T3 are prothioconazole, tebuconazole and fluoxastrobin," explains Mr Pooley.

"They are constituents of products such as Proline 275, Toledo, Firefly and Prosaro. All are good materials technically and all will control the main ear complex of diseases, but as you would expect they vary in both active ingredient ratio and cost," he adds.

Product choices

Table 1 outlines the details of the products, including the co-formulated products such as Prosaro and Firefly that are often the distributor ear wash products of choice.

Efficacy is good and they provide a one-can solution, but looking more closely, the same levels of control could arguably be achieved by using straight products such as Proline 275 and Toledo, according to Mr Pooley.

Table 1: Examples of ear wash fungicide products

Product	Active Ingredients rates
Proline 275	Prothioconazole 275g/l
Toledo	Tebuconazole 430g/l
Prosaro	Prothioconazole 125g/l plus Tebuconazole 125g/l
Firefly	Prothioconazole 110g/l plus Fluoxastrobin 45g/l

In addition, independent trials have shown that good levels of control can be obtained with slightly lower amounts of active ingredient, given very good application timing.

Table 2 below shows typical rates per hectare for each product, the quantity of active ingredient delivered and per hectare cost of each treatment.

Cost savings

"By using the straights Proline 275 and Toledo, the combined cost of the T3 ear wash would be £17.99/ha. This compared to the Prosaro at £22.73/ha and the Firefly at £21.00/ha, giving a cost per hectare reduction of £4.74 and £3.01 respectively," he says.

Although the saving does not seem significant in isolation, when multiplied by a farm winter wheat area of 300ha, it would take £903 for the Firefly and £1,422 for the Prosaro off the farm's bottom line.

Mr Pooley stresses that this is just one independent agronomic decision and over the course of a season many similar decisions are made to many different crops and situations.

Table 2: Examples of ear wash fungicide products

Product	Typical Rate/ha	Active delivered g/ha	Cost £/ha
Proline 275	0.3	82.5	£13.20
Toledo	0.25	107.5	£4.79
Prosaro	0.75	93.7 and 93.7	£22.73
Firefly	1.0	110 and 45	£21.00

(Prices correct at time of writing, April 2018)

Scale back oilseed rape for a more resilient cropping system

DAN DINES
Wessex Agronomy

With oilseed rape pest pressure continuing to build in the south of England, one crop consultant advocates a reduction in its area to manage risk where viable alternatives can be found.

Growers are now in their fourth growing season without neonicotinoid seed dressings for guarding oilseed rape crops against adult cabbage stem flea beetles at crop establishment.

Wessex Agronomy's Dan Dines says he didn't see a significant negative impact in crops in the region at first, but damage has built year-on-year since.

So much so that this year, there are isolated cases where he estimates yield loss could be as high as 50%, predominantly as a result of larvae feeding in stems through the winter and early spring.

"After going into the winter looking OK, this year the affected crops have thinned out, are generally shorter and very open," says Mr Dines.

"The remaining plants have been drained of any vigour. The frustration is that before the true extent of the damage is known, most inputs have already been applied."

This means considerable costs have been outlaid and any significant reduction in yield could mean the crop struggles to generate a positive margin, which poses serious questions about the crop's status in the rotation.

Mr Dines doesn't believe giving up on oilseed rape is the answer, but the challenge is finding a profitable alternative break crop to fill the void a reduction in area would offer.

> "The frustration is that before the true extent of the damage is known, most inputs have already been applied

Alternative choices

Looking at the options, Mr Dines says maize grown for anaerobic digestion (AD) can offer a favourable late spring-sown option in southern counties where growers can find a contract, but demand has plateaued after changes to renewable energy incentives.

He has also had success with spring oats, but only on farms where blackgrass isn't a problem, as there are no herbicide options for grassweed control.

"We are watching with interest what happens with the pea and bean markets after changes to the 'greening' rules [they can't be treated with any pesticide if included as part of your EFA (Ecological Focus Area)].

"Economically, they haven't always been viable, but any reduction in area could see prices creep up and make spring-sown pulses more financially attractive," says Mr Dines.

The final and perhaps more left-field option he has seen successfully introduced on farm as a break crop is herbage seed, which can also be a useful tool for controlling blackgrass.

"It is a very specialised crop to grow, but does suit mixed farms, as it can be grazed through the autumn and early winter," he adds.

Balanced rotation

Whichever substitute is chosen for oilseed rape, it can only be a positive for the rotation as he admits some farms have been growing the crop in too tight a rotation.

By reducing the area of the crop where necessary and integrating more spring breaks into cropping plans, it will help reduce the increasing risks associated with rapeseed production and result in a more balanced rotation.

"My aim as an independent adviser is to increase the margin of my clients by developing a sustainable and resilient system and on some farms, reducing the area of oilseed rape will help achieve that.

"Spring crops can be cheaper to grow and do offer advantages in respect to cash flow," adds Mr Dines.

Use independent data for more responsible septoria control

JONATHAN BLAKE
ADAS

Independent research is revealing the true value of septoria resistance in wheat varieties and should give farmers and advisers the confidence to be less heavy handed with fungicide strategies.

Ahead of spring 2018, it was known from Rothamsted Research disease monitoring that 40% of septoria isolates had become less sensitive to SDHI fungicides and sensitivity is expected to decline further over coming seasons.

As a result, there is an urgent need to reduce reliance on SDHIs to control septoria, using the actives at lower rates and less frequently through the programme to slow this decline, according to ADAS principal researcher and AICC member Jonathan Blake.

He has been working on a three-year AHDB project that is exploring the significance of septoria resistance, trialling robust and susceptible varieties in early and late drilling slots on 12 high-risk sites in Ireland and western England.

Research findings

Mr Blake says after two years, findings have shown that on a more septoria-resistant variety drilled after mid-October, there was no significant benefit from using an SDHI in the fungicide programme at all.

While not including an SDHI at all would be too risky for some, it shows what leeway some of the more recent and more resistant additions to the Recommended List can offer.

"The data would suggest that one SDHI application in a programme on a late-drilled resistant variety is debateable, with two being very questionable.

"As disease comes in later and develops more slowly in these situations, it gives you more chance to react to the growing season and significant savings can be made.

"It also ensures you are taking a more balanced approach to risk management than an excessive one," adds Mr Blake.

Seasonal hyperbole

This more "excessive" approach could be appropriate on susceptible varieties sown early,

but Mr Blake notes that the industry can often get carried away on a wave of hyperbole that often blurs the lines between higher and lower risk situations.

Mr Blake urges agronomists and growers to seek independent sources through the season to inform more balanced fungicide choices. Twinned with the continuing rise of varieties more resilient to septoria on farm as part of an integrated strategy, it will help provide a win-win of cost savings on farm and reduction in pressure on existing fungicide chemistry.

Although two new actives are on the horizon, including a new azole and a new active from the quinone inside inhibitors (QiI) group not previously used in cereal crops, regulatory timelines are never certain.

Difficult to control

As a result, new chemistry cannot be counted on to save the day and help combat septoria in the short term, which is already considerably more difficult to control with SDHI's following recent sensistivity shifts in the population.

Even when introduced, achieving a more balanced use of all the available tools – new and old – will help prolong their effective use.

"The less we use these single site modes of action, the better we will protect them from shifts in sensitivity and it is widely accepted that more resistant varieties will help.

"As septoria becomes less sensistive to SDHI's, any perceived yield penalty from choosing more resistant varieities will be far outweighed by disease being easier to control and along with better accounting for sowing date, will allow growers to be less risk averse with fungicide programmes," adds Mr Blake.

> "As septoria becomes less sensistive to SDHI's, any perceived yield penalty from choosing more resistant varieities will be far outweighed by disease being easier to control

Key messages

- More balanced approach required to septoria control
- Source independent information to guide fungicide choices
- Account for varietal resistance and drill date to establish disease risk
- Reducing inputs provides win-win of lower cost and slower resistance development

AICC Academy trains next generation

We are working hard to ensure independent agronomy has a strong future – and offers a rewarding career

The AICC launched its own in-house Academy scheme in 2015 to assist Members in growing their business and to future-proof the continued growth of independent agronomy.

The aim of the Academy is to enhance the level of expertise of these new entrants who may have just completed or are in the process of gaining their BASIS and FACTS qualifications. It provides them with a sound technical platform in preparation for a career in independent agronomy.

The AICC has looked at various ways to address the issue of succession based schemes available to trainees run by other groups. But it decided to run its own bespoke academy to support AICC Members with their chosen trainees.

There is clearly a demand for young entrants who have already started working within AICC Member groups. Some 42 trainees are currently on the scheme. Trainees will have a BASIS qualification or will be working towards it and are already working with an established AICC Member or Member group.

CASE STUDY

JONATHAN JAMES

CCC Agronomy, Sussex

The solid technical foundation provided by the AICC Academy significantly eased pressure on Sussex-based agronomist Jonathan James after he was thrown straight into a field walking role at an early stage in his career.

After keeping his options open during an Agriculture degree course at Reading University, experience working on arable farms during and after his studies settled his heart on a role in crop consultancy.

A year after graduation in 2016 he successfully applied for a trainee role at CCC Ltd, who offer independent agronomy advice across the southern counties of England.

Initially, he was due to work for a year at Crop Advisors – a buying group based at Alton, Hampshire – to gain experience of how purchasing and supply of farm inputs works before heading out into the field.

However, after an established CCC agronomist moved on to a new challenge, it left the team short of the staff to walk the hectares under the firm's watch, so Jonathan was thrown in at the deep end to fill the gap under the tutelage of the company's senior agronomists.

He says he needed to learn quickly and started attending AICC Academy modules ahead of starting the job, when a module on nutrient management

# of agronomists

helped him gain his FACTS and BASIS quickly followed.

"I have also attended modules on blackgrass management, rotations and cover crops at NIAB and soils with ADAS, which was very practical and not just theory in the classroom," says Jonathan.

"As a group, we've also visited facilities at Syngenta and KWS to see how the R&D and breeding side of things work and we will soon be having a couple of days at Bayer looking at how new chemical molecules are brought to market," he explains.

He adds that although much of the information provided is out in the public domain, being taught first hand by top industry experts helps drive home the messages, which can be used to progress his clients' businesses.

"A lot of farmers are looking at soils and cover crops, tillage practices and rotations. There is a big knowledge gap in this area and the AICC Academy module on soils has really helped provide me with the latest information."

Jonathan says the Academy has also helped forge a strong network of other young agronomists, with attendees enjoying some social time on top of the learning in the classroom or out in the field.

"I would say to anyone interested in independent agronomy to push for a place. Also, try and spend a day or two crop walking with an agronomist and you will see that it really is a great job," he says.

CASE STUDY

JAMIE HARRISON-OSBOURNE,
Prime Agriculture, Suffolk

The valuable knowledge gained from AICC Academy modules is already helping Jamie Harrison-Osbourne recruit more clients for Prime Agriculture in the East of England.

Halfway through a biological sciences degree at Oxford Brookes University, Jamie realised he wanted a role that was less laboratory-based and more a combination of scientific theory and practice.

Inspired by summers spent working on arable farms, plus an independent agronomist as a mother and a father who is an area manager at British Sugar, he set his sights on becoming an arable adviser, which ticks both boxes.

He subsequently applied for the job at Prime Agriculture and his journey into independent agronomy had begun.

"I definitely wanted to go down the independent route, as my mother is an independent, so it's been there in the background and I always believed it to be the right thing to do," says Jamie.

"There is no sales pressures from a company, so you are always doing what is best for the client," he explains.

Since starting his role in 2016, Jamie has been mentored by the 10 fully-trained agronomists in the Prime group and has been attending AICC Academy modules on various technical arable subjects.

Taught by highly-respected experts at top research organisations such as NIAB and ADAS, it initially assisted him in passing his BASIS crop protection qualification.

More recently, the Soil Management module has helped him steer the strategy for adopting direct drilling across two of his client's farms in Essex, who were both keen to ditch the plough completely from their crop establishment systems.

"As part of the module, there were some discussions around direct drilling and blackgrass control. The information I gathered helped me convince them that rotational ploughing was initially the best way to go during the transition," says Jamie.

As more Academy modules are constructed, he is keen to attend them. Along with the continued tutorage of colleagues at Prime, he says this will help him become more self-reliant with some clients and build his customer base over time.

"For anyone coming out of university and are thinking of going into agronomy, remember that as an independent, you are always client focussed and that is so much more rewarding. Also, get yourself a place on the AICC Academy if you can too," adds Jamie.

Straightforward herbicide choices can cut weed control costs in sugar beet

GEORGE SWANN
Arable Alliance

Weed control represents a huge chunk of a sugar beet grower's costs and scrutinising herbicide choices can offer significant savings, according to one Yorkshire-based independent agronomist.

Wet weather significantly delayed drilling plans this spring and Arable Alliance agronomist George Swann says some crops remain 2-3 weeks behind the norm across his area, which stretches from north Nottinghamshire to the southern edge of North Yorkshire.

Potentially, a shorter growing season could mean slightly lower than average yields and this will bring variable costs in to sharp focus. With seed and fertiliser costs offering very little wriggle room, Mr Swann says herbicide input is the area most open to scrutiny.

He points out that between 2008 and 2018, average herbicide costs in sugar beet have risen from £80/ha to about £140/ha, due to a mixture of inflation and changes in products chosen to kill weeds.

Some farms now use pre-formulated combinations of several active ingredients in one product, which cost much more than tank mixing individual active ingredients together for the sequence of post-emergence herbicide applications.

These pre-formulated products are often sold as simple, single can solutions with a higher level of crop safety than tank mixes, but Mr Swann argues the issue is often misconstrued.

"With a good agronomist tailoring rates and monitoring growing conditions and crop stress, tank mixing herbicides can be just as crop safe," he says.

"Another advantage is that you can tailor the rates of individual actives mixed for each application to the weed spectrum present, allowing you to be much more focussed and field specific."

From the table below, on a like for like comparison when sourcing through a buying group, mixtures using individual active ingredients are about 40-66% cheaper than the pre-formulated counterparts on a £/litre basis.

Mr Swann notes that desmedipham is not available as an individual active ingredient, but as it is very similar to phenmedipham, in most situations desmedipham can be directly replaced with phenmedipham, allowing mixtures to offer similar efficacy to the pricier products, too.

He acknowledges an occasional small advantage with desmedipham in dry conditions on some weeds, but at an additional cost.

"The only disadvantage is you'll have to accept it will take a little longer to fill the sprayer up, with operators having to use three or four products instead of just one or two products.

"Even taking that into consideration, you can still make considerable savings," says Mr Swann.

> "With a good agronomist tailoring rates and monitoring growing conditions and crop stress, tank mixing herbicides can be just as crop safe.

Cost comparison of sugar beet herbicides

		Tank Mixing Comparisons	
Product	**Cost £/lt**	**Cost £/lt**	**Saving**
Betasana Trio	£11.00	£5.46	50%
Betanal Maxx pro	£20.00	£6.60	66%
Volcano	£21.00	£12.35	41%
Sniper	£19.50	£11	44%
Metamitron	£17.50	na	na
Ethofumesate	£12.00	na	na
Lenacil	£26.00	na	na
Phenmedipham	£4.80	na	na

Prices correct as of 22/05/2018
Assumes a cost of desmedipham comparable to that of phenmedipham.

Innovation in product developments and technology

Our unique four-day conference is an industry highlight valued by AICC members for delivering unedited, independent presentations and advice.

This year was no exception, with 148 AICC member delegates for the duration. The popular exhibitors' afternoon attracted 40 companies and in the evening 300 members and industry colleagues enjoyed the renowned and hugely entertaining Conference Gala Dinner.

Innovations in product developments and technology are providing independent crop consultants with more opportunity than ever was the leading message to come out of the event.

As well as being the UK's largest gathering of independent crop consultants, the conference provides delegates with extensive trials data and technical information while giving 42 AICCA Academy members the opportunity to interact with their peers.

Cereal disease and new solutions

Jonathan Blake of ADAS warned that whilst SDHI fungicides are still active against septoria, there is some evidence of efficacy decline with ¼ and ½ dose applications dropping in the last five years from 90% to 45-60%.

He recommended that to slow down any further drop in efficacy, SDHI's should only be used where absolutely necessary only using azoles and multi-sites at T1 and T2 where possible, and that there may be scope to refine multi-site use

He reported on trials that showed that when mancozeb and chlorothalonil were used in combination, there was a synergy that could boost disease control and yield in some cases providing 0.3t/ha more than when either multi-site was used in isolation.

Mr Blake pointed out that growing more resistant varieties such as Crusoe showed no significant yield benefit with fungicide programmes incorporating two SDHI's compared with one.

Neil Paveley, crop protection director at ADAS, emphasised the importance of incorporating resistance management into fungicide programmes. "It is important to make challenging decisions asking if an SDHI is needed at T1, is an azole needed at T3 and consider the addition of a multi-site at T2 and T3," he said.

Dr Paul Gosling, of the AHDB, raised concerns with regards to developing resistance in barley, in line with increasing applications of fungicides. He reminded delegates to use alternative chemistry, such as cyprodinil, and resistant varieties where possible.

Coping with pest resistance

The theme of resistance carried through to pest control as delegates heard from Sacha White of ADAS and Alan Dewar of Dewar Crop Protection, who raised their concerns over available options for effective aphid control due to loss of efficacy of available chemistry due to resistance, loss of actives through regulation and the higher cost of alternative options.

> "A triumph of world class technical discussion. AICC member

Sacha White urged growers to use good Insecticide Resistance Management including products at their full dose rate and alternate modes of action while adhering to thresholds and employing alternative control methods such as varietal resistance, companion cropping and conservation biocontrol.

Alan Dewar voiced his concerns over the consequences of a total ban on the use of neonicotinoids, particularly in controlling virus yellows in sugar beet.

"Without neonicotinoids, sugar beet growers are fully exposed to full aphid and virus pressure. Virus yellows are a real threat to the profitability of sugar beet. New insecticides are urgently needed and we should also re-introduce the virus yellows warning scheme to guide their usage."

Soils – linking agriculture and environment

Better understanding of soil health and biology will ultimately lead to best farm practise and improved crop production was the clear message from Dr Elizabeth Stockdale of NIAB TAG, and Professor Richard Pywell of the Centre for Hydrology and Ecology.

Dr Stockdale urged agronomists and growers to look at how changing management systems such as min or no-till could impact different areas relating to soil and plant health. She also raised the question of how we should be sampling soils in conservation agriculture systems, pointing out that the current approach is based on traditional conservation cultivation practices.

Professor Pywell focused on ways biodiversity might support profitable and resilient farming. Adding compost appears to be more effective in increasing soil organic matter and available phosphorous over three years compared to cover cropping. But cover cropping over 10 years can increase organic matter content and associated diversity of soil fungi.

Herbicide resistance – the bigger picture

Reporting on instances of rye grass resistance to glyphosate in Australia, Dr Paul Neve of Rothamsted Research pointed out that there are no known reasons why blackgrass in the UK would not follow the same path.

There is some evidence that some populations of blackgrass are evolving reduced sensitivity to glyphosate, and this is down to several factors. Reductions in tillage also increase the probability that rare survivors will persist, he said.