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Maintaining a balance

Lampport AgX

It's back to Lampport for Agrovista's flagship AgX event, during a year when balancing environmental stewardship with weed control is more topical than ever, plus the added temptation of drilling early. CPM visits the site for this year's update.

By Janine Adamson

Having banked 11 years of research on how growers with high blackgrass sites can produce profitable September-sown first wheats while delivering on environmental best practice, it's arguable that Agrovista's AgX site at Lampport in Northamptonshire couldn't be more relevant.

After all, experts are predicting a higher than average seed return following poor autumn weed control, and as the weather continues to be highly unpredictable, growers will be questioning whether it's worth holding out for drilling and risking a repeat performance of last year.

At Lampport, the system centres around growing first wheats in years one and four of a cropping rotation, explains Mark Hemmant. Then through 30 individual plots, the team evaluates the success of different traditional and novel spring crops, cover crops and some of the actions currently available through the

Sustainable Farming Incentive (SFI).

Although Mark stresses that to achieve results such as those at Lampport it involves a long-term complete systems approach, he says much of the work focuses on the role of spring cropping and autumn cover crops. "On heavy soils with a high weed seed-bank, this means minimising soil movement when planting a cash crop – something we learned during the early years of Lampport.

"We've found that small seeds aren't reliable when direct drilled in the spring at this site, so we have to work with crops such as beans or spring cereals, in fact spring cereals have always performed well," he explains. "And now, not only do the autumn cover crops offer soil health benefits, but they can attract an SFI payment too."

Rotation management

To simplify the many options being explored at Lampport, Mark says it's about understanding what to grow between winter cereal crops to enable earlier drilling while maintaining blackgrass control and avoiding issues such as take-all.

For Agrovista, the conclusion mostly lies in spring beans and oats. "We've found that if you can control weeds effectively, spring beans are a really good entry crop for winter wheat. Whereas the oats, although not a true take-all break, will deliver providing the straw and excess residue are removed."

But an option which has caught Mark's attention during recent years is companion planting spring wheat with a low count of beans (10 seeds/m²). The reason being, it could help to mitigate take-all, while upping the profitability of the rotation. "Companion planting also improves soil health and adds diversity, plus there's the associated SFI payment for this action," he adds.

"However at Lampport, oilseed rape – which is often companion planted – is an unreliable entry for winter wheat because due to cabbage stem flea beetle damage, crops can be patchy and therefore allow blackgrass to grow through."

Something which he hadn't anticipated would become a problem, is the use of flower strips between crop plots. Although great for nurturing pollinators, beneficials and biodiversity, Mark says the flower species have been a source of grassweeds and the flowers themselves have slowly crept into the plots. "In the case of this site, because we're trying to minimise our herbicide use, we've had to take the flower strips out."

So what about the whole-field options currently available through SFI? Hamish Wardrop, national rural consultancy manager, says Lampport has been exploring options such as winter bird food (AHL2) and legume fallow (NUM3/CNUM3), to understand



The Lampport system centres around growing first wheats in years one and four of a cropping rotation, explains Agrovista's Mark Hemmant.

► their impact on blackgrass control.

"Owing to extremely high blackgrass pressure, we've since had to destroy both the winter bird food and legume fallow. On this particular site, the winter bird food doesn't work because we can't take that level of blackgrass through the season.

"In a commercial situation, you'd re-drill and start again which of course has cost implications. You have to go in with your eyes open that there's a trade-off; you can't lose sight of what you're trying to achieve with the cash crops," he explains.

Mark agrees: "Lampton is all about getting the seedbank down to enable sustainable approaches such as direct drilling and improving soil health."

On a more positive note, the team feels there are many benefits to be had from a spring-sown cover crop. "It was drilled in mid-April comprising phacelia, buckwheat, crimson clover, wild carrot and oxeye daisy. Admittedly perhaps a little over the top but under the 2024 SFI offer aims, it meets the requirements of a spring cover crop," says Hamish.

"There's a level of blackgrass, but we believe we can live with it because the cover will be destroyed around harvest time and then go into an autumn cover crop followed by a spring cereal. If we can retain the blackgrass seed on the surface and use the autumn cover as a trap crop,



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we should maintain grassweed control.

"It's a lovely mix, has encouraged a lot of pollinators and has clearly done the job environmentally-speaking," he comments.

Another option showing promise at Lampton is low-input harvest cereal crop (AHW10), available through the expanded 2024 SFI offer. Mark says this can be stacked with a cover crop payment and achieved by growing oats for example, with an under-sown wildflower mix.

"For this, we've seen a low level of blackgrass and believe it has the potential to deliver in terms of margin. It could be a positive all-rounder," he suggests.

Recognising the importance of an integrated approach to weed management,

work continues at Lampton to evaluate the best herbicides to use when direct drilling. The ongoing trial looks at different levels of soil disturbance with and without Avadex (tri-allate), plus different herbicide treatments (aclonifen and cinmethylin).

Whereas in previous seasons there have been clear front-runners, this year, Mark says aclonifen and cinmethylin have performed similarly. "In a dry autumn we found aclonifen performed better but it's not so clear cut this time.

"In a high grassweed scenario, we believe the best control can be achieved through using both actives and the Avadex, with the cinmethylin at peri- or early-post-emergence," he concludes. ■

Cup tyre compaction project

A new feature at Lampton AgX this year is comparing the large footprint, low-inflation Galileo AgriCup tractor tyres with conventional VF tyres. The aim is to understand how to reduce soil compaction in spring crops while also testing the new technology.

The tyre is part of Galileo's CupWheel range (as featured in *CPM* August 2023) which the firm says offers superior performance through an innovative concave sidewall and an elongated footprint that functions like a track. The structure also allows for high radial flexibility, ensuring a uniformly distributed, extended footprint even under extreme loads.

For the trial at Lampton, half of the plot, which follows an overwinter cover crop, was direct drilled with combining peas with the other half being direct drilled spring wheat. Assessments were made for the compaction effect on soil, seed depth and drilling performance when using a tractor shod with either Galileo or VF tyres. Wheat yields will also be noted at harvest.

The VF tyres ran at either 18psi or 10/11psi, with the latter being the lowest to safely

accommodate a Weaving GD drill and a full seed hopper. In comparison, the Galileo AgriCup tyres were set at an inflation pressure of 6psi.

Independent cultivations expert, Philip Wright, has been overseeing the trial. "As a benchmark, we've assessed both the untrafficked centre of the crop plot as well as the wheeling for each tyre pressure or type.

"During crop emergence, aside from the centre of the plots, the low pressure VF has performed marginally the best followed by the Galileo AgriCup, and I believe the same can be said for now. The 18psi VF tyre has undoubtedly performed the worst in terms of effect on the seeding zone, and resulting crop emergence and growth," he explained.

With the Galileo tyres being middle of the road, so to speak, Philip was asked if he believes there's a valid market for this type of technology. "I believe the biggest opportunity lies in skid-steer loaders or gantry, linear or central pivot irrigation systems for a start.

"In the UK, if you had a cultivation or establishment system that uses a lot of



During compaction trials at Lampton, cultivations expert Philip Wright says low pressure VF tyres performed marginally the best followed by the Galileo AgriCup.

rear-mounted kit, then you may also see a benefit. However, there'll have to be a wider range of tyre sizes to improve the accessibility as this current limitation led to higher than optimal slip due to a compromised lead ratio for these trials," he concludes.