



# Same weeds, new thinking

## Harvest weed seed control

During a particularly intense year for grassweed pressure, what learnings can be shared by three growers who've been investigating a novel method of control at harvest? *CPM* finds out.

By Janine Adamson

**Although well-proven across the pond, harvest weed seed control (HWSC) is yet to take off in the UK despite offering an alternative, non-chemical solution.**

Recognising its potential, three farmers supported by industry experts have been trialling the concept which is based around Redekop's seed control unit (SCU). Coming together to discuss and compare findings, the group agrees that although further work is required, HWSC is a much-welcomed development.

In support, Suffolk-based Adam Driver says all farmers understand the solution to grassweeds doesn't, and never will, come from a chemical can. "HWSC and the SCU are part of my personal vision for weed control plus inter-row hoeing and targeted spot spraying. It's taking an integrated approach to weed management while utilising novel technologies."

But what is HWSC? It's a concept based on the theory that if you hit a weed seed

hard enough four times, it becomes unviable. The chaff stream is then separated from the straw and passes into the SCU which is fitted below the straw chopper on the combine.

### On-farm trials

Independent trials show it's effective in its methodology, killing up to 98% of the weed seed which it receives. As a result, the concept piqued the interest of the British On-Farm Innovation Network (BOFIN) and NIAB, which is how the UK farmer-led trials began.

To start the work, Adam, joined by Jake Freestone and Ted Holmes, were tasked with trialling the Redekop SCU on their own farms for Harvest 2022. Following analysis, the results are in and shine a positive light on HWSC and the SCU.

Adam, who operates a CLAAS Lexion 8800, says his main weed challenge is controlling blackgrass build-up in the chaff lines of his controlled-traffic farming system. "Unfortunately we have a huge blackgrass seedbank but the results show the SCU retained 54% of the seed in our harvested winter wheat, so it has to have helped.

"It's also had a good effect on meadow brome when it occurs across the field as a whole rather than just the headlands," he says. "It'll be intriguing to compare these results with those of this season, which has been especially bad for grassweed pressure."

Whereas blackgrass is Adam's biggest headache, Ted finds Italian ryegrass more of a concern on the farm he manages in North Warwickshire on behalf of Velcourt. With a

“HWSC is a seven to 10 year weed seedbank reduction technique, it's not an instant fix.”

New Holland CR9.90 combine fitted with the SCU, he achieved a 60% reduction of the weed in winter barley and 44% reduction in spring barley.

Ted says because this year's weather has been a perfect season for a grassweed explosion, and given the success of the SCU so far, he plans to stick with it. "In this year's ▶



HWSC is part of Adam Driver's vision for weed control plus inter-row hoeing and targeted spot spraying.



Trevor Thiessen says Redekop's goal is to improve the SCU, paying attention to noise reduction and the unit's size.

► spring barley, which has followed a crop of winter wheat, you can already see where the SCU was running alternately on and off across the field, and an associated reduction in ryegrass plant numbers.

"Over time, I want to see that we're reducing the ryegrass seedbank within our soils. Knowing where the seedbank is within the profile is critical, and this will impact my decision making for autumn cultivations. Where I have to, I will, and am, still using rotational ploughing where it's appropriate to hit that reset button."

Keith Challen from Belvoir Farming Company has also been investigating HWSC. In an innovative move, he applied pod sealant to an area of his crop with the aim of reducing weed seed drop in a bid to increase the volume entering the SCU.

"You can lose more than 60% of blackgrass seed before the combine even goes through the crop, so I'm intrigued to see if this works," says Keith. "It could be a cost-effective way of boosting the SCU success rate, working hand-in-hand."

"Because it only lasts for a relatively short amount of time, it's finding the sweet spot – applying it as late as possible before the weed seed is shed," he says.

Discussions among the group also explore whether the SCU is successful at controlling cereal volunteers, with all in agreement that it is, particularly for wheat in malting barley. As a result, Adam raises the wider benefits of the SCU in terms of SFI payments.

"If you consider growing a wheat crop after oats, minimising the green bridge and therefore reducing aphid-vectored BYDV could mean no insecticide use. Receiving the associated SFI payment for this could make a difference," he says.

They also agree that practically speaking, the SCU was relatively issue-free

other than the impact of the unit's width on combine manoeuvrability. For those who did experience minor niggles, their local dealerships were on hand to rectify them.

Redekop's Trevor Thiessen says development work is now taking place to make the unit even more UK market-appropriate. "The goal is to improve the SCU, paying particular attention to noise reduction and potentially the size."

"We believe in supporting the local dealership network when launching an innovation such as this because there are many learnings to be taken from using the SCU in a practical on-farm environment," he says.

## SCU positioning

"This is why the research with these growers is so important, to answer the question of where the SCU will provide benefit, but equally important as to where it may not be a fit. Each region of the world has different challenges related to managing their weeds at harvest and the UK is no exception."

The group will continue to trial HWSC and the SCU for Harvest 2023 supported by a group of 50 'Seed Scouts' recruited and overseen by BOFIN. The purpose is to conduct a nationwide survey of grassweeds left standing at harvest, sending samples to NIAB for analysis.

NIAB's Will Smith says the only way HWSC will work is if the seeds are available to the machinery at harvest. "We currently know little about how much viable seed goes into the combine — there's very limited work on this in the UK and Europe," he says.

"However, it's encouraging to see



The seed control unit (SCU) is fitted below the straw chopper on the combine.

industry partnering with farmers to help address the problem through a creative, cultural solution."

The Seed Scouts have each been allocated one of three sampling methodologies depending on their familiarity with trial protocols. The aim is to gain a wide farmer-supported data set, although the group acknowledges this may take time.

"HWSC is a seven to 10 year weed seedbank reduction technique, it's not an instant fix," says Keith. "The skill will be pushing as much weed seed through the SCU as possible to maximise its efficacy and therefore boost adoption of the technology."

Despite the threat of glyphosate-resistant grassweeds plus the unpredictability of input costs, Trevor says the challenge will be changing perspectives to this longer-term approach. "Achieving buy-in can prove difficult when entering new markets, in this case, going chemical-free," he concludes. ■

## More on-farm innovation

Work led by the British On-Farm Innovation Network (BOFIN) continues, this time with a £2.6M Defra-funded slug management project.

Strategies Leading to Improved Management and Enhanced Resilience Against Slugs (SLIMERS) is a three-year research project involving more than 100 UK farms and six industry partners. The aim is to reduce reliance on slug pellet usage through precision application of treatments to pest hotspots, and, advance alternative biological control options.

Project lead and founder of BOFIN, Tom Allen-Stevens, says following the metaldehyde ban, protecting the future of ferric phosphate

pellets is even more important. "Slugs are arable farming's biggest pest issue which is estimated to cost the UK industry about £43.5M per year. Developing solutions to tackle these pests sustainably could be a game-changer for the entire industry and wider supply chain," he says.

The first stage of the project will recruit 30 farmer 'Slug Sleuths' who'll be paid to host trials on their farms and test the developing methods. Robotic technology will then provide an infield slug identification and spot-treatment solution, with the Slug Sleuths helping to improve the AI models.

For further information about SLIMERS, visit [slimers.co.uk](http://slimers.co.uk)

# MAKING STUBBLE TREATMENT COUNT



First class pre-planting control of grassweeds will be more important than ever this autumn wherever weather worries prevent wheat drilling being delayed as long as it should be.

## KEY CONSIDERATIONS

### 1 PRIORITISE THE BEST STUBBLE MANAGEMENT

The most-timely and effective cultivation and stubble spraying is especially essential to limit grassweed pressures in earlier drilled wheats.

### 2 TREAT TWICE WHERE POSSIBLE

Two glyphosate treatments before drilling are proven to give markedly better results than single application regimes.

### 3 AVOID LESS RELIABLE GLYPHOSATE FORMULATIONS

Modern Roundup formulations offer the most reliable control and the shortest cultivation interval.

### 4 TAKE SUFFICIENT SPRAYING CARE

Steady spraying speeds, the right nozzles, boom heights and water volumes are crucial for the best performance.

### 5 CONSIDER PRE-EMERGENCE GLYPHOSATE

An approved glyphosate with the pre-em is particularly valuable for crops drilled more than a few days after final seedbed preparation.

## STEWARDSHIP

Ensure responsible use of glyphosate in the field to minimise the risk of resistance development. Information is available in the latest revision of the WRAG guidance. Visit <https://ahdb.org.uk/wrag>

## WHEAT SOWING INTENTIONS

High weed risk fields

42%

Medium weed risk fields

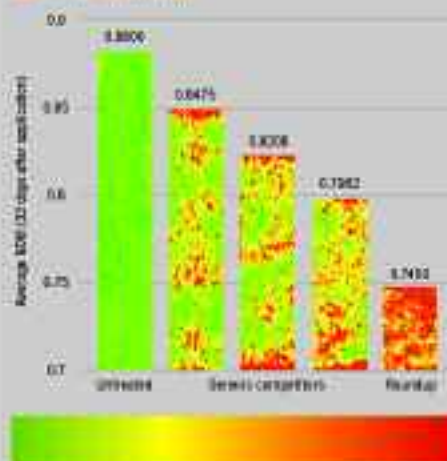
80%

Percentage of growers planning to sow wheat before Mid-October

Roundup National Grassweed Management Study 2020

## THE ROUNDUP ADVANTAGE

NDVI was reduced by up to 4 times more than some competitor glyphosate alternatives 22 days after treatment



Green: NDVI imagery of trial plots showing plant photosynthesis activity

Green = Full photosynthesis, Red = No photosynthesis

For further information, visit [www.cropscience.bayer.co.uk/roundup](http://www.cropscience.bayer.co.uk/roundup) or call 0800 1949522 for technical enquiries.

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