

# TRIALS OPEN NEW WINDOW FOR GRASSWEED CONTROL

The first UK trials of a combine-mounted seed control unit are providing valuable information on its value in tackling tricky ryegrass, brome and black-grass. Tom Allen-Stevens visited three farms as units were being fitted.

Ground-breaking trials are underway on three UK farms to explore the potential of harvest weed seed control (HWSC) in British conditions. Used successfully in Canada and Australia, it's an option seldom used in the UK, despite increasing problems with grassweeds, especially herbicide-resistant black-grass and ryegrass.

"HWSC is very popular in Australia where growers suffer from glyphosate resistance in *Lolium rigidum*, a close relative to the Italian ryegrass which is causing many problems in the UK," notes Will Smith, senior trials manager at NIAB.

He explains that most research into HWSC emanates from Australia, where growers have benefited from public-funded work to explore its effectiveness. The Redekop Seed Control Unit (SCU) is a combine-mounted seed mill developed on the findings of this research (see box).

## PRELIMINARY WORK

NIAB carried out preliminary work on meadow brome on its farm near Cambridge in 2021 and 2022, working with an SCU fitted to its Case IH 7230 harvester. Close monitoring of the weed burden showed the SCU reduced weed

populations in the following crop by an impressive 83%.

As a result, Redekop committed to trials in 2022 on three UK farms. While NIAB has carried out weed monitoring and assessments, Redekop worked with the British On-Farm Innovation Network (BOFIN) to identify farmers, combine harvesters and grassweeds best suited for the trial (see box).

“There are two main points of the puzzle we’ve been looking to explore,” says co-owner and president of Redekop Trevor Thiessen. “Will the SCU work agronomically, and can it work mechanically?”

It’s the second aspect that has been a particular challenge, he explains. Based in Saskatoon, Canada, Redekop has already achieved global success with its MAV straw chopper. More recently the company set its

sights on an SCU to complement this, delivering a total residue management system for growers. With hundreds of units now operating in Canada, Australia and the United States, Redekop has introduced the SCU to many parts of Europe, working with distribution partner Oria Agriculture. “There are differences between North American and European models of the same combine that have to be considered in the design,” explains Mr Thiessen, who supervised the specialist team working closely with the trial farmers.

One of the main ones is the width – the rear-wheel axle is usually set narrower in the UK and EU, but has to be adjusted to account for the SCU that sits beneath the chopper.

**TIME PROVEN GREEN UNIT**

“The unit for John Deere models has been on the market for five years now – they’re a fantastic



Overbury Enterprises seed control unit in action

partner to work with. For the UK trial we worked with JD dealer Tallis Amos who helped us modify the design to overcome the issues we’ve encountered – the S685i doesn’t exist in North America,” he says.

It’s been much the same with Case IH and New Holland. Redekop has worked with Case for three years, while units for New Holland combines were introduced two years ago. “The SCU we’ve fitted to the Claas Lexion 8800 in Suffolk is the first one across EU and UK. All three units have thrown up the inevitable issues, but the UK dealers we’ve worked with have been awesome. Harvest for the UK farmers progressed relatively smoothly.”

A key issue on the Claas was with the drive pulley, which had to be slightly altered from the N American model. The JD unit was due to be fitted to a brand new S790 combine. But logistics delays meant this was still sitting in Rotterdam at the start of harvest, so the farm’s existing S685i model was adapted to take the SCU. With the NH, there were aspects of the wiring loom to address, and the chopper had to be replaced with the Redekop MAV.

“The NH trial model used in the UK helped to identify installation issues which have been addressed, thanks to help from local NH dealer Russell Group. An issue with the European version of the drive on the Claas was unexpected. But we worked closely with Claas UK Eastern and Claas Manns who ensured there was minimal delay to the start of harvest,” says Mr Thiessen.

As someone who has built a company around fitting specialised equipment to all the major models of combines around the world, it’s this relationship with dealers and manufacturers he values. “In our line of work, teething problems are normal, and sorting them out is what we do, which is how our equipment has evolved,” he points out.

“Together with Oria Agriculture, it’s always been our priority that an issue doesn’t become a problem. I think that’s helped the relationship we have with manufacturers, and ultimately means we can deliver better solutions to farmers.”

## The Redekop SCU – how it works



The Redekop SCU is a step-on from an integrated unit developed by researchers at the University of South Australia, funded by the Grains Research and Development Corporation. “Researchers found if you hit a weed seed hard enough four times it renders it unviable,” explains Mr Thiessen.

The chaff stream is separated from the straw and passes from the sieves into the SCU fitted below the straw chopper. The mill operates at 2850rpm, passing chaff at 400km/h through two rotary sections of columns and three stationary sections. The tungsten-carbide coated mills are reversible to ensure a long life.

Independent testing has found this kills up to 98% of the weed seed that passes through it, says Mr Thiessen. “Like all mills, there’s a power requirement that can reduce combine speed by 10-12%. In drier conditions this may be closer to 5%. It requires up to 85hp in the sort of conditions and crop residue levels typical in UK cereals.”

Developed first for John Deere combines, units are also now available for newer Case IH, New Holland and Claas models and can be retrofitted. Like Redekop’s MAV straw chopper, it spreads residue across the full combine cut-width, although operates independently, so chaff can be milled and straw swathed, or vice versa, for example.

## Farmers step up for UK trials

In addition to NIAB’s research farm in Cambridge area, three farmers across England are trialling the Redekop SCU as part of a farmer-led project co-ordinated by BOFIN.

Jake Freestone, farm manager at Overbury Enterprises, Worcestershire, has an SCU fitted to his John Deere S685i combine to tackle a bit of a problem with meadow brome.

Ted Holmes, Velcourt farm manager in Warwickshire, has a unit on his New Holland CR9.90 and for him, ryegrass is enemy number one. Adam Driver of Driver Farms, Suffolk, has an SCU fitted to his Claas Lexion 8800 which puts lines of black-grass into the following crop where it spreads the chaff.

The three farmers have been working closely with NIAB’s Will Smith, who’s been monitoring grassweeds on their farms. “The only way HWSC will work is if the seeds are available to the machinery at harvest. There’s currently very limited work on this in the UK and Europe,” he says.

Weeds germinating in the following crop are also being assessed, while the farmers are keeping a close eye on fuel use and combine performance, joining in on a WhatsApp group to share their experiences.

“While it’s too early to say how it’s affected black-grass levels, one surprise result for us has been the control of volunteers. That’s important where malting barley follows wheat,” notes Mr Driver.

A webinar to deliver the results takes place on Wednesday 16 November. The three farmers will join Mr Smith and Mr Thiessen to discuss experiences and how the technology may shape up in the UK. Hosted by BOFIN, farmers are invited to join the HWSC Knowledge Cluster that will help decide future research. [bofin.org.uk](http://bofin.org.uk)



Adam Driver



Jake Freestone



Ted Holmes