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On farm opinion

Choosing a versatile one pass drill to replace a trusted power harrow system has not only increased drilling output for one farmer, but supported a flexible approach to different soils and the adoption of technology to ensure even establishment. CPM explores.

By Melanie Jenkins

After increasing his contract farmed land four years ago, Northumberland farmer John Thompson knew his intensive plough and power harrow establishment system wouldn't allow him the capacity to maximise the tight weather windows, so he took the decision to find a suitable alternative.

John, who farms with his father James, runs an operation consisting of arable and SFI with an extensive horse livery yard business. The arable hectareage

Achieving even emergence

extends to 260ha of owned land and contracting, and up until a few years ago, had been cultivated intensively.

Although the system was faithfully reliable, its downsides were it required multiple passes, was generally quite slow, and used significant amounts of diesel and labour in the process, explains John. “The power harrow system was great and always allowed us flexibility to establish crops, but increasing our hectareage meant it wouldn't cope with the additional work so we'd been looking at drill options for some time to boost work rates when the weather allowed.”

Seed depth consistency

Maintaining consistency of seed depth was of paramount importance, along with a drill that was easy to use and had the flexibility to handle a variety of soil types and weather conditions, he adds. Two local dealers provided John with a Kuhn Espro and the equivalent Horsch version to test, but a strong relationship with Ripon depot manager, Andy Whitfield, eventually sealed the deal on the Espro.

“We've known Andy for several decades and trust him when he says this is what we require. We use Ripon a lot and having that trust in a dealer makes a huge difference. He recommended the Espro and took the time to show us its features.”

The 4m Kuhn Espro 4000 arrived at

Hall Farm on the outskirts of Seaton Sluice in Northumberland in 2021 – an ex-demonstration unit that had seen little use at the time of its arrival. The farm didn't require a split tank drill so the full 2t hopper is a single tank for seed, meaning increased time between fill ups. Whereas another aspect that impressed John during the demonstration process



John Thompson moved away from a power harrow system to a Kuhn Espro 4000 when he increased his contract farmed area.

was the consistent seeding depth offered by the Kuhn couler design.

“The layout of a drill’s components has a significant influence on consistent establishment. The drill’s row of press wheels are in front of the coulters, rather than behind, as is the case on some other models,” he explains. “This means consolidation and levelling of the seedbed is carried out by the wheels leaving an even seedbed for the coulters to work into. The middle transport wheels are sat further forward than the press wheels on the wings, which helps the soil to flow and avoids the drill becoming easily stuck.”

The couler design has two angled discs that are slightly offset to allow soil to flow easily through and limit disturbance. The leading disc creates the channel with the following disc widening it sufficiently for the seed to be placed at an accurate depth, which is easy to set via spacers on hydraulic rams. John believes this design has been essential for even germination.

“Across our fields we have uniform crops that are at the same growth stage with even emergence, which makes management much easier. I believe this is down to the consistent drilling depth and consistent pressure across the width.”



The Kuhn Espro is a universal seed drill which is designed for use after ploughing, minimum tillage or directly into crop residues.

The Espro also has the optional levelling paddles on a front bar which can be adjusted for aggressivity, or removed completely from work depending on conditions.

The establishment system at Hall Farm now relies on a 3m Kuhn Performer with a combination of legs, discs and

consolidation to provide a tilth following harvest. The Performer and Espro combination have significantly lowered the fuel bill compared with before and offered the farm more options, says John.

“We have two tractors – a John Deere 6155R and 6215R – and both easily pull the drill. The 6215R is preferred as



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Emergence is uniform which makes managing crops much easier, which could be down to the consistent drilling depth and even pressure across the width of the Espro.

it has additional power for the hills and can increase forward speed when the conditions allow. The Autopowr gearbox and engine combination in the 6215R operate at just 1500rpm and we can easily do a couple of days on a single tank.

“Comparatively, the old power harrow drill would be comfortable at 7km/h, whereas the Espro is usually set at 12km/h but can rise to 14km/h in dry conditions. This, coupled to the additional 1m of drilling width, means outputs have increased considerably,” he adds.

Another positive has been the larger seed tank on the Espro, which can hold four 500kg seed bags allowing John to keep working for double the amount of time as his previous drill. This has reduced trips back to the farm but also meant support

for loading seed has been reduced.

Integration between tractor and implement can be a common problem, but the Espro’s ISOBUS display through the John Deere Starfire terminal has allowed John to refine settings to the point where he presses a single button at the start and end of each run.

“The drill runs through John Deere’s Greenstar GPS and this allows several areas of accuracy to be refined,” says John. “The synchronisation with Greenstar allows the Espro to work in a more efficient way.”

He sets a boundary 19m into the field from his outside headland edge to provide the drill with a reference point for turning on and off, ensuring no missed areas and as little seed overlap as possible. John has also fine-tuned the

Technical perspective

The Kuhn Espro is available in 3m, 4m, 6m and 8m options when choosing a single hopper, while the split hopper version comes in either 4m or 6m, details the firm’s Edd Fanshawe. “Those selecting the split hopper have the option to include fertiliser or companion cropping seed alongside their main crop.”

With the split hopper options, the drill can either have two rows of coulters, whereby the fertiliser coulters are ahead of the press wheels and the seed coulters at the back. Or both seed and fertiliser can go down the same coulters.

For those requiring further seeding capacity, an SH 1120 hopper can be fitted to the drawbar. “The 110-litre seeder feeds into the same venturi, and therefore the same coulters as the main hopper. Furthermore, seeders can be fitted to the rear for the application of Avadex, slug pellets, companion crops and more,” he adds.

“We’re seeing increasing movement towards companion cropping with growers wanting to plant a mix of different seeds. If they opt for the twin hopper, with the small seed hopper on the drawbar and another on the rear, there’s the ability to drill up to four products at three different depths.”

In terms of the distribution head, full Vistaflo is available, says Edd. “This is the full seed monitoring and universal tramlining system, but customers can also select two-by-two tramlining or half width shut-off. With full Vistaflo, contractors with the 6m drill, for example, have the option to work across varying tramline widths by adjusting the settings on the digital display.”

The Crossflex seeding element consists of an offset double disc system, with one leading disc that allows the drill to work in less-than-ideal conditions, he explains. “It’s very versatile and

means you can go in directly after the plough, into min-tilled soils or even directly into stubbles in the correct conditions – it can suit anyone in most situations. We’re seeing wetter autumns and a drill like the Espro can run a lot later into the season than other disc drills because the seeding element is behind the press wheels.

“The drill can exert 80kg of down pressure on the seeding unit, which allows it to operate in less favourable conditions, however, it is primarily a min-till drill,” he highlights. “But for those wanting to use it to drill directly into soils, the two rows of cultivation discs can be lifted out and operators can then just go in with coulters when overseeding with grass, for example.”

For headland management control, the front tools, cultivation discs and seed coulters can be individually lifted in a staggered sequence on the headland and when setting back into the field, says Edd. “We often specify the drill with the Kuhn CCI A3 ISOBUS joystick which can be plumbed through the tractor joystick to control this.”

The drill has the option of track eradicators, full width press wheels, press wheels with track eradicators or a front levelling board.

The press wheels of the Espro are different to many other options on the market, coming in at 900mm and offset by 20cm. “This means the drill requires less horsepower to pull it because there’s no bulldozing effecting on the soil,” explains Edd. “In effect, the 6m drill requires 200-215hp, which is pretty low for a trailed drill. The 3m drill requires 160hp and the 8m version can be pulled with upwards of 270hp.”

“There’re also two press wheels per axle, so when turning on the headland, one wheel is moving forward and one backward. This means it’s easier to turn and the



According to Kuhn’s Edd Fanshawe, the Espro is a versatile drill meaning it can go in directly after the plough, into min-tilled soils or even directly into stubbles in the correct conditions.

headland won’t be scrubbed up as badly.

“The mid-gang of wheels also lift up during transport so the drill is only running on the outer wheels. The camber of roads is always raised, meaning the weight of the drill would be on the central wheels if these were running on the road,” he says. “By lifting these wheels and running on the exterior ones, the drill tows more like a trailer and is legally allowed to be driven on roads at 40km/h with a fully laden hopper because these wheels are braked.

“In addition, where machines have the wheels in one gang on one axle it’s often the middle wheel which suffers from punctures meaning all wheels have to be removed to address this. On the Espro, with two wheels per axle it makes this process much easier.”



The Espro's coulters design has two angled discs which are slightly offset to allow soil to flow easily through and limit disturbance.

settings to reduce the tractor speed as he crosses the boundary, allowing the drill to switch on/off with greater finesse.

"The benefits to setting a boundary like this means it removes operator error and contributes to saving seed. On entering a run I can set the drill down into work way ahead of the mark, but the radar will only start the seed flowing once the drill crosses the line. I've set it to start seeding 1.2 seconds before the line and stop seeding 0.8 seconds after it crosses the boundary. I've refined these over the years, and it's about right now."

Memory settings for the individual

components are also possible. This means when John changes the depth of the discs, the new depth setting is instantly memorised and will return to work at the same level.

All-in-all, the Espro has become an essential tool on the farm, handling all cereal drilling, SFI establishment and grass drilling for the equine yards, says John. On average, it covers around 320ha a year and he says he wouldn't go back to his old system.

"We kept the power harrow combination for the first year of owning the Espro as a 'just in case' drill but we didn't use it at all so ended up selling it this year. The benefits we've realised since owning the Espro have far outweighed our old system and I wouldn't be without it now," he concludes. ■



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