

The best drill for the job



"We wanted a drill that suited our soils and the way we farm and so far, it's delivered exactly what we were looking for."

STUART TABERNOR

There's no one-size-fits-all approach to direct drilling, with every farm adapting its establishment strategy to suit its own soils and system. *CPM* finds out how two arable businesses have taken different routes to achieving consistent crop establishment.

By Charlotte Cunningham

Moving towards direct drilling is rarely straightforward, particularly on heavy clay soils where maintaining consistent establishment can prove challenging in less-than-ideal conditions.

At FRW Farrington & Son near Wellingborough, Northamptonshire, the transition has involved a gradual shift towards regenerative farming, with lower-disturbance establishment, cover crops and soil health forming the backbone of the system. But, as farm manager Stuart Tabernor explains, reducing cultivations is only part of the equation – success also depends on having machinery capable of working reliably within that system.

Farming 295ha of predominantly Hanslope clay, the business grows winter wheat, oilseed rape, winter beans and spring oats, alongside cover crops where opportunities allow. "We generally combine, stubble harrow and drill," says Stuart. "The business has been moving towards a no-till approach and that's something we're continuing to build on."

Reducing soil disturbance has also become an important tool in managing grassweeds. "We still have blackgrass and we have a bit of a brome problem as well, although that's something we're getting on top of," he explains. "The move towards direct drilling is definitely helping."

Although the farm had already

adopted direct drilling, Stuart felt there was room to improve establishment consistency. "The Hanslope clay didn't particularly suit a disc drill," he says. "The discs could create smearing rather than producing a clean slot, so we started looking at alternatives."

The aim wasn't simply to replace one direct drill with another, but to find a machine capable of drilling directly into cover crops and surface residues while maintaining accurate seed placement across a range of crops and conditions. "We wanted something that could go straight into cover crops, straight into our stubbles and do a good job," says Stuart. "Ultimately, you can have the best system in the world, but if you don't establish the crop properly, you're on the back foot from the start."

The search led the business to the Simtech TS480, a 4.8m drill combining leading cutting discs with four rows of staggered tine coulters. While Simtech was already familiar to Stuart, it wasn't initially a brand he'd associated with

continues on page 64 ►



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Achieving more with less in Norfolk

How moving from full plough tillage and non-inversion techniques to direct tine drilling has transformed crop establishment for one large-scale farming business

The move towards no-till looks different on every farm, but one principle remains the same – successful establishment depends on matching the drill to the system. At A.J. Alexander & Son in Norfolk, that has meant adopting the Claydon Opti-Till Crop Establishment System, which the business says has improved soil structure, reduced fuel use and increased establishment consistency across 2000ha of owned and contract-farmed land.

Growing a diverse rotation of winter wheat, barley, peas, beans, OSR and both forage and grain maize, Rob Alexander says the objective throughout has been simple – do less while achieving more.

The business farms predominantly sandy clay loam soils, which Rob says are easily damaged if overworked. Reducing cultivation intensity has

therefore become just as important for protecting soil structure as improving operational efficiency. “Our loams collapse if they’re overworked, so the fact we can leave the soil in a stable condition until we’re ready to drill is very beneficial,” he explains.

The move towards direct drilling followed an earlier transition away from conventional plough-based establishment. At its peak, the previous cultivation system required more than 55 l/ha of fuel before drilling could even begin. “When we transitioned to non-inversion – basically tines followed by a disc drill, by keeping the topsoil on the top, the subsoil underneath and the drainage open – our costs came down. That saved around 20 l/ha of fuel, labour and machine hours, which represent a major cost.

“Subsequently we looked for a more risk-averse approach to

crop establishment which would maintain soil structure right up to the point of drilling. That meant it was better able to support machinery, but once the seed had been placed, those drainage channels underneath remained in place.”

The business initially introduced a second-hand Claydon direct tine drill, which quickly became established within the rotation. “We started by drilling around 10% of the cropped area with it and within a few years that had increased to more than 60%,” recalls Rob.

Five years later the drill was replaced with a new 6m Claydon Hybrid T, providing greater capacity alongside increased precision through integrated control of the NutriSeeder and separate seed and fertiliser hoppers. “Now we do a lot of variable-rate applications and can vary rates across the seed, fertiliser

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and NutriSeeder by linking everything to John Deere GreenStar," he explains.

One of the most noticeable improvements has been establishment consistency, he says. "The evenness of establishment is very noticeable, including on the headlands because now we turn on firm ground and the last pass over those areas loosens the soil and drills the crop. Undoubtedly that has helped to increase yields."

The change has also delivered significant improvements in operational efficiency. "Fuel use for our seeding process is about 17 l/ha, and the 6m Claydon Hybrid T easily covers 40ha/day," notes Rob. "Now we're doing far more with the same operator and less machinery, so the Claydon System has enabled us to reduce production costs and be more profitable at a time of low commodity prices."

Alongside the operational benefits, improving soil health has remained a key priority. The business has worked closely with neighbouring livestock enterprises through long-standing straw-for-muck agreements, however Rob admits incorporating



A core part of the system

A. J. Alexander & Sons' 6m Claydon Hybrid T direct drill is part of the Claydon Opti-Till System which provides a range of benefits.

bulky organic manures was initially a concern when moving to direct drilling.

"When considering direct drilling, one concern was whether we'd be able to incorporate manure and get it through the drill, but that's not been a problem," he points out. "It's important to use a good spreader and break the material down when it's applied, but then the drill incorporates it well. The levelling boards at the back distribute it over the rows which concentrates nutrients where they're needed."

Since adopting direct drilling,

biological activity has increased noticeably too. "Worm numbers have risen dramatically," says Rob. "We wouldn't have seen many 25 years ago when power harrows were following the ploughs, but now every spit of soil contains handfuls of them."

Improved biological activity, combined with reduced soil disturbance, has in turn helped to create a more stable soil structure capable of carrying machinery while maintaining natural drainage, he believes. "The interaction between

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- what we're doing to the soil and what it is doing itself with the worms and organic matter, has made the structure more resilient and stable. The natural drainage channels allow water to pass through during heavy rain, while the fine crumb structure on the surface breaks down nutrients and residues making them available to the crop."

Like many arable businesses, grassweed control remains an ongoing challenge. However, Rob believes reducing cultivation intensity has helped minimise weed germination by leaving buried seed undisturbed. "We still have the same challenges as all farms in this area, including grassweeds, but that's a battle we're winning. Direct drilling produces less disturbance so grassweeds remain underground, and now we have an option that's not the can or sprayer – our Claydon TerraBlade inter-row hoe."

Looking back over the farm's transition from ploughing, through non-inversion cultivation and ultimately to direct drilling, Rob believes the cumulative improvements in soil structure are now becoming increasingly evident. "We still have balers, muck spreaders and trailers running over our fields, but the excellent soil structure supports them so remedial action isn't required to loosen everything up."

With soil structure continuing to improve, the business has also been able to reduce the working depth of the drill's leading tines, lowering draft requirement and creating opportunities to further increase output in the future. "We also find that now we don't have to run the drill's leading tines as deep, this reduces the power requirement, so in future we may end up with the same size tractor pulling an even wider drill to further improve efficiency."



The low disturbance equation

When moving to a lower disturbance system, Northamptonshire farm manager Stuart Tabernor says reducing cultivations is only part of the equation – success also depends on having machinery capable of working reliably within that system.

- large-scale arable drilling. "I'd mainly thought of them as a grassland drill manufacturer," he admits. "It wasn't until we started researching direct drills more seriously that we looked at what they offered."

He adds that the coulter design immediately stood out. Rather than relying solely on a disc opener, the TS480 uses leading discs mounted within the frame to slice through residues ahead of the tine coulters, helping create a clean seed

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slot while maintaining low soil disturbance, explains Stuart. "It was the front discs built into the frame that really appealed. At the time, it was the only drill we looked at that offered that combination."

A demonstration during autumn 2024 confirmed the coulters concept suited the farm, although exceptionally wet conditions exposed an issue with the original rear-mounted hopper configuration. "It was one of the wettest drilling seasons I can remember," recalls Stuart. "With the hopper on the back, if the tank was full the drill would sink in wetter patches and we were putting wheat in at around 100mm depth, which obviously isn't ideal."

Rather than dismissing the machine, Stuart worked with Simtech to develop a specification better suited to the farm's conditions.

The rear-mounted hopper was replaced with a front-mounted split hopper to improve weight distribution between tractor and drill, while the rear roller was replaced with four depth-control wheels to improve depth consistency and

reduce the risk of the machine sinking in softer ground. The chain on the rear was also swapped for a harrow bar to reduce residue dragging behind the drill. "We ended up with a much better-balanced machine," he says. "With the hopper on the front and the toolbar on the back, the weight is spread much more evenly, which suits our soils far better."

The resulting machine arrived in time for the 2025 drilling season and has since established the farm's entire rotation. "We've drilled everything from OSR right through to beans with it," says Stuart. "Depending on the crop, we're drilling anywhere between 10mm and 100mm deep."

The split hopper and twin distribution system also provide flexibility for companion cropping and establishing multiple crops at different seed rates, supporting the farm's continuing move towards more regenerative practices.

Meanwhile, the four rows of staggered tine coulters provide generous trash clearance, allowing the drill ►



A machine with many hats

The search to find a machine capable of drilling directly into cover crops and surface residues while maintaining accurate seed placement across a range of crops and conditions led FRW Farrington & Son to the Simtech TS480.

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- ▶ to cope with heavy crop residues and high-biomass cover crops. “Residue flow has been very good,” says Stuart. “That’s important because we’re increasingly drilling into situations where there’s plenty of material left on the surface.”

Power requirement has proved lower than expected, too. The 4.8m drill is operated behind a 185hp tractor, with engine load typically sitting at just 35-40% while drilling. Running at around 1400rpm and travelling at approximately 8kph, the outfit comfortably achieves around 4ha/hour while using roughly 6 l/ha of fuel.

But the main benefit has been establishment. “It was a good drilling season, but the crop establishment

was fantastic,” says Stuart. “Everything came through evenly and looked good throughout the year.”

Those establishment benefits are now being reflected in crop performance.

At the time of writing (end of July), wheat, OSR and winter beans had all been harvested, averaging around 8t/ha, 3.5t/ha and 3.5t/ha, respectively. “Considering the seasons we’ve had during the past few years, they’re probably the best results we’ve achieved during that period,” he says.

“The spring oats, drilled into cover crop, are also achieving around 5t/ha on the AWH10 low input cereals.”

While Stuart is careful not to credit those figures to the drill alone, he

believes consistent establishment underpins every subsequent management decision. “If you don’t get the crop established properly, it makes everything harder afterwards,” he says. “Getting that crop away well is one of the most important jobs you’ll do all season.”

He also highlights the aftersales support received from distributors Opico since taking delivery. “It’s been absolutely fantastic,” he says. “Every machine has little snags and questions when it’s new, but anything we’ve needed has been sorted quickly and efficiently. They’re also just good people to deal with.”

As the farm continues refining its regenerative system, Stuart expects the drill to remain central to the establishment strategy. “We wanted a drill that suited our soils and the way we farm,” he concludes. “So far, it’s delivered exactly what we were looking for.” ●

“The business has been moving towards a no-till approach and that’s something we’re continuing to build on.”

What’s new in drills?

As drilling technology continues to improve productivity and performance on farms, here’s a look at just a couple of the newest drills to hit the market



Amazone used the recent Cereals Event to preview the new Condor 02 direct drill ahead of its official UK launch, with the machine forming part of a wider display of drilling, crop protection and cultivation equipment.

Replacing the original Condor introduced in 2013, the Condor 02 is available in 8m and 9m working widths and retains the manufacturer’s narrow ConTeC tine coulters, designed to minimise soil disturbance while maintaining accurate seed placement across varying ground contours.

One of the main updates is the addition of a rear harrow, introduced to improve seedbed finish and broaden the drill’s suitability across both direct drilling and minimum tillage systems. Amazone says this should provide more consistent seed coverage while supporting higher operating speeds where conditions allow.

The drill also features a triple split hopper, precision metering system and MultiSwitch segmented distribution head, enabling individual row shut-off to reduce overlaps and improve seed placement accuracy.



Lemken has introduced the Saphir XMR mechanical seed drill, replacing the long-standing Saphir 10 with a machine designed to improve precision, ease of use and work rates.

A newly developed metering system sits at the heart of the drill, featuring tool-free removable metering wheels to simplify seed changes, cleaning and maintenance. Different seed wheels allow accurate metering across a range of seed sizes, while a double-sided electric drive with half-width section control comes as standard to reduce overlaps on headlands and irregular field shapes.

Machine setup has also been simplified, with central depth adjustment alongside independent coulters pressure and sowing depth settings. Operators can also select different tramline patterns and working widths through the patented tramline control system, while the ISOBUS-compatible iQblue drill terminal provides digital support for functions including calibration and residual seed emptying.

Seed placement is handled by Lemken’s parallelogram-guided double-disc coulters with pressure rollers, with coulters pressure adjustable up to 45kg. The drill is available with 12.5cm or 15cm row spacings and tank capacities range from 900 to 1500 litres – with an optional 200-litre MultiHub auxiliary tank available for micro-granules or catch crops.