



FOCUS LINCOLNSHIRE



"Traditional no-till direct drilling proved too risky, so I went back to Claydon Opti-Till® direct strip seeding as I know it works." Paul Sheardown

FARM FACTS

Farmer: Paul Sheardown

Location: Grange Farm, Woolsthorpe

Area farmed: 360 ha (owned and tenanted)

Soil: Blue Lias heavy clay

Cropping: Winter wheat, beans, winter oats, spring linseed, maize

Direct strip seeding makes a comeback after weather highlighted limitations of traditional direct drilling

Direct strip seeding produces more even crops, more reliably according to Paul Sheardown who returned to the Claydon Opti-Till® System after the wet autumn of 2019 when traditional no-till direct drilling proved impossible.

The limitations of traditional no-till direct drilling were brought sharply into focus at Grange Farm, Woolsthorpe near Grantham, during autumn 2019; Paul Sheardown, the third generation of his family to manage the land there, was one of many who found out the hard way.

"The combination of autumn cropping and no-till direct drilling had worked well for several seasons, so our farming system, machinery and labour were all geared around that approach, but Mother Nature taught us a harsh lesson that year," Paul recalls. "From the middle of September, it never stopped raining for long enough to sow any crops.

"It was frightening how quickly conditions turned against us. Being completely reliant on that approach we had no other option

to fall back on. Once our drilling window closed, we knew it would be spring before we could get back on the land. That was a very worrying time and completely changed our outlook on crop establishment.

"Minimising compaction has always been a

priority because most of our soil is Blue Lias clay, which is so heavy it is used to make bricks," Paul says. Of the 360 hectares (ha) of owned and tenanted land, 170ha are currently into winter wheat, comprising the varieties DSV Champion, KWS Dawsum and LG Skyscraper.



Paul's 7.5m Claydon Straw Harrow is used to spread chopped straw and reduce slug populations. It creates a shallow tilth which encourages volunteers and weeds to germinate so they can be sprayed off before strip seeding with the Claydon Drill.



Winter wheat which was strip seeded following a crop of maize. In this situation the land is often wetter than following a cereal, and the Claydon Drill provides much greater security than traditional direct drilling.

Additionally, the farm has 83ha of maize, 43ha of beans, 33ha of winter oats and 28ha of spring linseed, but Paul describes the rotation as 'ever changing'.

The soil self-structures beautifully in dry conditions. It is very fertile, drought-tolerant and produces high yields, but if cultivated in certain conditions using conventional methods it could be impossible to form a seedbed. Even though it is well drained and moled every six years, managing this heavy land correctly requires discipline and the right equipment.

"In the 1990s we grew just two crops, wheat and oilseed rape," says Paul. "From 1998 we no-till direct drilled everything with a Kuhn SD4000 triple disc, which was replaced by a 6m Amazone Cirrus in 2004. That approach worked well for several years but eventually serious issues with slugs forced us to introduce shallow tillage to help kill them and their eggs."

"The 3.45m Claydon V-drill, which we bought new in 2006, was intended purely for establishing oilseed rape, but it quickly became apparent that would be a better option for other crops too."



Paul Sheardown in a crop of Claydon-drilled KWS Dawsum winter wheat.

After two years we extended the V-drill to 4m to fit in with a new 28m tramline system. In 2012, we replaced it with a 6m mounted Claydon Hybrid drill as part of a progression towards controlled traffic farming (CTF) at 36m, alongside 12m Cambridge rolls, a 6m combine and 36m sprayer.

CHANGING TIMES

"In 2015 we decided to go back to a traditional no-till direct drilling approach for everything and replaced the 6m Claydon Hybrid with a 6m Amazone Cayena trailed machine. Some seasons that approach provided the perfect solution, but sometimes other options would have worked better. Then several things changed."

"For decades, oilseed rape had been our second largest crop, but that option was taken away in 2018 following a huge increase in cabbage stem flea beetle activity. Suddenly we could not grow what had been 'a banker,' blackgrass was starting to become an issue and the weather was becoming very variable."

"Two years prior, we had constructed a 165kW anaerobic digester on our land at Sedgebrook and began growing maize to feed it. After the crop had been harvested the land could be wetter than following a cereal, so relying on traditional direct drilling to establish late-drilled wheat was a significant risk."

"The less that we do on this land the better it travels and supports following operations, so the principle was right. But after a while we started to notice that the headlands were becoming more compacted, the crops were much thinner, and the yields were significantly lower."

"It was often necessary to restructure the soil on headlands and in wheelings, but if we did that it pulled up clods which were very difficult to break down. Also, where soil was moved ahead of the drill it was easily re-compacted by any following operations. That made us reflect on the benefits of direct strip seeding using the Claydon Drill; this has leading tines that allow water to drain away, providing much greater tolerance over a wider range of conditions."

"Having experienced the drawbacks of a heavy, cumbersome trailed drill, which lifted on wheels that sunk into the ground in wet conditions, we were keen to go back to a mounted design. In 2021 we bought a new 4m Claydon Hybrid to replace the Amazone Cayena, together with a 7.5m Claydon Straw Harrow to improve stubble management after harvest."



The Claydon drill creates ideal soil conditions for strong plant establishment and development.



KWS Dawsum winter wheat drilled at a low seed rate on Paul Sheardown's farm in Lincolnshire.

Working at up to 25km/h, the Claydon Straw Harrow creates a micro tilth in the top 30mm of soil, using the retained moisture for fast, even weed germination. It rakes out and destroys weeds at the cotyledon and one-leaf stage, removing a food source for slugs. Straw harrows break up slug nests and desiccate their eggs by mixing up and exposing damp chaff and straw to sunlight.

The leading in-line tine technology used on all Claydon Drills moves the optimum amount of soil, only where it is needed - in the seeding and rooting zones. This creates tilth and drainage, aerates the soil, and alleviates compaction to create the perfect growing environment for fast germination. The soil between the seeded bands is left undisturbed and moisture is conserved for the plants to tap into. The undisturbed banks of soil support the weight of farm traffic, minimising the damage caused by wheelings and compaction.

The front tine has been designed to drill direct into stubble but can also be used in plough and min-till scenarios. It works on heavy clay and light sandy soils, baked out ground and wetter soils. It is this front tine that helps make the Claydon Drill so

versatile. And as extreme weather events demonstrate, when conditions make it difficult for other drills, crops can be established with a Claydon Drill, which offers the option to switch over to the Low Disturbance (LD) kit for a minimal disturbance set-up.

Paul made a few additions to his Claydon Drill and establishment system this summer, purchasing an LD kit which was used to establish turnips and grass. However, its primary use will be for planting spring cereals into land which has been growing a cover crop over winter.



Worm holes, in soil from a Claydon-drilled wheat crop, help water, air and nutrients to move through the profile.



Spring linseed looking very promising mid-June.

"I felt that we needed some spring crops in the rotation in order to improve the blackgrass control," Paul states. "The most successful system I have seen involves disturbing the soil in the autumn to encourage blackgrass germination and then destroying that blackgrass but not moving soil again to plant the main crop, which would allow fresh seeds to germinate. To achieve this, I want to use the Claydon Drill in the autumn with a standard leading tine set-up and then switch to the LD kit for spring sowing."

GETTING BACK ON TRACK

"Autumn 2021 was very favourable, and everything was drilled when we wanted, with rain helping crops to germinate and grow away strongly," Paul says. "In September, we had 56mm of rainfall, 40mm of that in the last four days of the month, then another 30mm during the first few days of October."

"As part of our plan to keep blackgrass at manageable levels, drilling dates for winter wheat have been moved back, so the aim is to get everything in by 10 October. The Claydon Hybrid works well behind one of our two 220-hp Valtra tractors at 12 km/h and typically covers 30ha a day. We run the leading tine 100mm deep and seed is drilled using the standard 175mm-wide A-Shares,

except beans for which we use the 75mm spoons.

"Other farmers I talk to sometimes express concern about a potential yield-knock if they change to direct drilling or strip seeding, but we have never found that to be the case.

We average over 10t/ha from winter wheat, but it needs feeding to achieve that, so we apply up to 230kgN/ha, 150kgN/ha on oats and linseed, while maize, our second largest crop, gets 120kgN/ha. Half of our wheat follows maize and the Claydon Hybrid is ideal in that situation because it provides more flexibility and is an insurance policy against variable weather.

"We tend to use low seed rates, 100 seeds/m² or about 50kg/ha being typical for wheat, but we go up to 150-160 seeds/m² (75-80kg/ha).

We adopted that approach a long time ago to save on seed and I am very happy with the results. The rates are the same with the Claydon, but the headlands are much improved this year as a result of using the Hybrid drill; there are no signs of wheelings and the crops are looking much more consistent.

"We intend to try growing oilseed rape again next season and have at least two spring crops, including spring instead of winter oats. Linseed may be an option if we find that we still cannot grow oilseed rape.

"With the global situation so uncertain it is impossible to know what will come next. Farming has always been challenging, and we could well do without the additional 'man-made' difficulties that face our industry at the moment, but I am pleased that we went back to the Claydon Opti-Till® System. Having tried various approaches it is the right choice for us."



Maize for the farm's 165kW AD plant was drilled after a cover crop of autumn-sown winter beans had been sprayed off. This approach worked well, providing a significant level of additional nitrogen for the following crop.