

Benefits build as system evolves

The need to replace machinery often provides a catalyst for change. That's exactly what happened when the Davies family in Northants came to replace the farm's drill — they decided to adopt the Claydon system, and reckon that's resulted in reduced costs, improved timeliness and a better soil structure, boosting yields and profitability.

"It's transformed the way we think about farming and how we actually farm," explains Rick Davies, who farms in partnership with his father, Mike and mother, Christine.

"Had we not changed when we did, we wouldn't be in such a strong position today. Given the way that grain prices are at the moment, I'm very pleased that we made the transition voluntarily rather than being forced into it by lack of profitability."

Based at Newton Lodge, between Bedford and Northampton, the family farms a total of 404ha, with 387ha in arable crops. Group 1 winter milling wheat is the mainstay, with 239ha of Crusoe, Gallant and Skyfall, supplemented by 118ha of winter oilseed rape and 30ha of Explorer spring barley grown on contract ▶



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ON FARM OPINION

The move to a one-pass system was started by a contractor on a Northants family farm, but has since been adopted across the holding as a cost-effective and productive method of establishing crops.

CPM reports.

By Julian Cooksley



“It's transformed the way we think about farming.”



Rick Davies found moisture conservation and improved soil structure have led to benefits over a plough-based system.

► for Budweiser. The farm encompasses a wide range of soils, from sand and gravel to sandy clay loam, corn brash, silt and Hanslope Series clay, often all in the same field, challenging any establishment system.

Rick Davies returned to the family business in 2012, having spent a decade as a farm manager for Velcourt in Lincs. For a while, he was also area manager for Syngenta in Beds and Herts before committing to the farm full time in Dec 2014.

“While I was in Lincs, the family unit had reached a crossroads where significant investment in new machinery was required. It was decided to contract out spraying, top dressing and drilling to a local contractor who did the OSR swathing and drilling previously, so it made sense to have him extend his operations.

“Since 2002 we’d been establishing OSR with a Väderstad Rapid direct into wheat stubble. We had some good results over the years but establishment in a dry year was often hit and miss. When our contractor changed to the Claydon V-Drill in 2006, the emergence was much more consistent and yields were significantly higher, which improved further when he bought a 6m Claydon Hybrid in 2010.”

The move into wheat with the Claydon came with 20ha established in 2011. When Rick Davies returned to the farm the following season, the family decided to buy its own drill.

“We’d seen what the Claydon Hybrid could do but looked at what else was on the market. There’s the Mzuri, but it has a lot of moving parts and there may be a high risk of blockage. We also looked at what Dale and Väderstad offered but preferred the Claydon Hybrid because its leading-tine concept creates a drainage channel and alleviates shallow compaction.”

A simple, straightforward design also worked in favour of the Claydon, recalls Rick Davies, as did the fact that it had been developed by a working farmer and worked across a range of soils and conditions.



Oilseed rape being drilled into Corn Brash soil at 660mm row spacing with a 3 inch spoon, to reduce soil disturbance.



The leading tines are operated at 12.5cm depth for the majority of situations, while seeding tines are adjusted as necessary.



The combination of the tines and rear levelling boards leave a level finish.

What is the Claydon system?

Developed by Suffolk farmer Jeff Claydon, this is a system that’s now caught on and used by farmers in 26 countries, across a wide range of crops, soils and conditions. It’s a one-pass seeding technique claimed to be more sustainable, cost-effective and reliable than conventional methods of establishing crops, that doesn’t compromise production.

The complete system comprises the Claydon straw harrow, Hybrid drill and rolls. This combination is geared towards establishing crops directly into stubble, but can also be used on min-tilled or fully cultivated soils. It be up to five times faster and one third the cost of a plough-based approach and typically 50% less than the cost of a min-till system, claims Claydon.

A typical 500ha farm using the complete

Claydon system would spend £25,500 (£51/ha) on crop establishment, taking into account machinery running costs, diesel, labour, wearing metal and depreciation. The company claims it takes just 26 mins/ha to establish crops.

The Hybrid mounted drill, is available in widths of 3m, 4m, 4.8m and 6m, providing seasonal outputs of up to 700ha, 1000ha, 1200ha and 1500ha respectively. There’s a 3m mounted seed and fertiliser drill, which can place fertiliser between the seed or in a band with the seed. The newer Hybrid T trailed drill comes in 6m and 8m versions. The Claydon straw harrows are available in widths of 3m, 7.5m and 15m, while the rolls offer working widths of 6.3m, 8.3m or 12.3m. Further information is available at www.claydondrills.com



The system developed by Suffolk farmer Jeff Claydon now combines a one-pass seeding technique with straw harrow and rolls.



The John Deere 7530 tractor has power in reserve and achieves a daily output of up to 45ha drilling OSR with the 3m Claydon Hybrid.

"We considered the 4m version but decided that the 3m, which has nine leading tines and nine seeding tines, better suited our needs. We felt that our John Deere 7530 would be boss of the 3m and we could achieve a good forward speed on slopes and heavier ground. The drill works at its optimum at 12-14 km/h. Our fields range from 0.9ha to 34ha, averaging 10.6ha, and the 3m is very manoeuvrable."

Nor is a 3m drill short on capacity, he says. "I've often drilled up to 45ha of OSR and 35ha of cereals with it in a (16-hour) day. Having tried a range of forward speeds, I operate at 14km/h in OSR and 12km/h for cereals. This means the tines create just the right amount of soil movement and shatter, producing an ideal sowing environment. Again, having tried different depths, both deeper and shallower, I now operate the leading tines at between 10cm and 15cm, dependent on soils and crop."

The family's moved away from swathing OSR, which required 330mm row spacing to keep the swath off the ground. That meant they could increase row spacing to 660mm, which requires less seed and horsepower and reduces soil disturbance, he notes. "That also helps to control blackgrass."

Clean start

Although the Claydon Hybrid was bought primarily to establish OSR, it was always the plan to use it to establish first and second wheats "The key was to get off to a clean start, so in 2012 we subsoiled the entire farm to take out existing 36m tramlines and wheelings. We then ploughed everything to provide a clean start for the new system. That year we drilled all the OSR with the Claydon, together with 40ha of second wheat on the lighter land."

Harvest 2014 provided a true comparison of the new system — first wheat Gallant was established conventionally and with the Claydon on very similar fields, ranging from sandy gravel to sandy clay loam.

One crop was established using two passes with a 7.5m Claydon straw harrow to encourage volunteers and blackgrass to germinate, then drilled with the 3m drill. The other was ploughed, subsoiled, pressed, power harrowed, drilled and rolled.

"Though they were drilled within two days of each other, throughout the season the two crops looked very different," recalls Rick Davies. "This was partly because with the Claydon System the residues from the previous crop are still there after the next has been ▶

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CLAYDON



The first of two passes with a 12m set of rolls with clod breakers takes place ideally within two hours of drilling to establish firm contact between seed and soil.

► drilled. Also, if you looked down the rows you could see more open space. The head count for the Claydon was 540 and for the plough-based was 615.

"Based on the way it looked early in the season, my father reckoned the Claydon-drilled fields would do well to yield 10t/ha. But the 10ha field actually yielded 12.03t/ha. The 12ha field conventionally established field yielded 12.06t/ha, but it had cost £200/ha to establish, while the Claydon field had cost just £100.50/ha. Wheat from the Claydon crop also had a specific weight of 84kg/hl — 2kg/hl higher — which I put down to more sunlight getting through to the plants."

Farm facts

MTH Davies, Newton Lodge, Clifton Reynes, Olney, Northants

- **Area Farmed:** 404ha
- **Staff:** Rick and Mike Davies, plus one part-time at harvest
- **Soil types:** Sandy and gravel, sandy clay loam, Corn Brash, Hanslope Series clay
Annual Rainfall: 50-70cm
- **Cropping:** winter wheat (Crusoe, Skyfall, Gallant); winter oilseed rape (V316 OL); spring barley (Explorer)
- **Five-year average yields:** first wheat 10.3t/ha; second wheat 9.6t/ha; OSR 3.9t/ha; spring barley 8.8t/ha
- **Mainline tractors:** John Deere 7530, JD 6620, Massey Ferguson 3085
- **Combine harvester:** Massey Ferguson Centora 7280 with 7.6m header
- **Drill:** 3m Claydon Hybrid
- **Cultivations:** 7.5m Claydon straw harrow; 12m Twose rolls
- **Sprayer:** 3000-litre/24m Amazone front/rear combination
- **Spreader:** Kverneland 3500-litre variable rate
- **Plough:** 6f Kverneland

Blackgrass has been another priority, he continues. "When I came back to the farm in 2012, the situation was getting worse, with Atlantis (iodosulfuron+ mesosulfuron) resistance in some fields. I decided we needed a radical change in approach — if we were to go the Claydon route, we had to ensure that blackgrass was brought under control. So the first step was to stop using Atlantis, which at £40/ha was costly and ineffective, and invest in hand rogueing."

Timing is key

Progress was initially very slow but has since proved effective, says Rick Davies. "Over the past four years the job has become much quicker and easier. When we started, a 34ha field took eight people four days to rogue, yet this year it took just half a day. Timing is the key — we try to rogue when the plant is flowering, which is normally the second week in July. All the pulled material is taken off the field and burnt."

In 2012, £60/ha was spent on rogueing, but by 2014, that had dropped to £45/ha and in 2015 on the family's own farm it was just £16/ha. "That's much less than using Atlantis and the farm is all but clear of blackgrass, providing a long-term solution instead of a short-term fix. The slight downside to taking out Atlantis is that we're starting to notice a few more wild oats and bromes creeping into headlands."

The Claydon Hybrid itself has proven easy, efficient and cost-effective to set up and operate, says Rick Davies. "Being tine-based, it's much more suited to our soils than the previous disc-coulter drill, particularly on the Corn Brash which includes large stones. We did consider specifying the optional hydraulic auto-reset system, but I've only had three shear bolts break in two seasons, so it really isn't an issue."

Before drilling, there's a pass with the 7.5m Claydon straw harrow. This encourages any weeds to germinate and reduces the slug population, he says. Once the drilling has hazed off, another pass with the straw harrow creates a level finish and provides another light cultivation before the seedbed is rolled. "I look at it effectively making the seed bed once drilled; this provides a better surface finish and allows the pre-emergence sprays to work more efficiently."

"With the standard 7" seeding coulters, the Claydon Hybrid isn't a low-disturbance drill but rather one which cultivates and

conditions the soil. It leaves moist, well drained, conditions in which the crop can establish, as well as fields that are firm, level and support the weight of traffic much better than a conventional system. As time goes on this situation will only get better," continues Rick Davies.

"With just myself and father working full time, the Claydon System provides huge time, labour and cost savings, as well as increasing drainage, worm activity and increased soil organic matter. Ultimately, it gives us more time to manage our farm rather than just doing tasks that are often ineffective and costly." ■



Controls are intuitive and easy to use, says Rick Davies.



Three years of direct drilling with the Claydon system have produced a much-improved soil structure.

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