

James Hebbelthwaite says the farm has seen significant reductions in time, cost and labour.

Strip seeding brings multiple benefits to busy family farm

Changing from traditional crop establishment methods to strip seeding has brought major benefits for Hebbelthwaite Farms in Leicestershire.

James Hebbelthwaite is a third-generation farmer in Leicestershire. His grandparents took on the tenancy at Bridge Farm, Elmesthorpe in 1945 and James' parents purchased the farm in 1979. In 2002 James started a bed & breakfast pig rearing operation, rearing 5,000 pigs at a time for Cranswick.

After seven years working for a contractor, James returned to the farm full-time in 2007. Currently the Hebbelthwaites grow 100-acres of KWS Barrel winter wheat, 80-acres of Belepi, a winter wheat which can be winter- or spring-sown, together with 65-acres of spring oats for human consumption – the combination of heavy soil and lots of manure helping to produce high specific weight grains.

Pig numbers are being reduced to 3,000 because of time pressures and new rules which limit the amount of manure which can be spread on the land.

Working with his father David and one full-time employee, James ditched the plough and power harrow five years ago in favour of Claydon's Opti-Till System after visiting the arable farm of its inventor, Jeff Claydon, in West Suffolk.

This holistic approach to establishing any type of seed that can be air-sown delivers high-yielding crops at low cost for maximum profitability.

Instead of the drawn-out process of establishing crops conventionally, James and David Hebbelthwaite now do so much more quickly and efficiently using three pieces of Claydon equipment; a 7.5m Straw Harrow, 3m Hybrid mounted drill and 3m TerraBlade inter-row hoe. All of them, James emphasises, "do exactly what they say on the tin".

"The advantages of strip seeding become more evident every season," James enthuses. "We have seen significant reductions in time, cost and labour, continuous improvements in soil structure, a substantial reduction in weeds, and higher, more reliable yields."

Efficient method of establishment

"Our heavy land is very difficult to manage and with only 8in of topsoil before we hit clay,

ploughing could throw up some very 'livery' soil which would then be very difficult to break down into a seedbed. The last time we used a plough was in 2015, when the land was still compacted after the very wet 2012 and 2013 seasons.

"With just my father and me doing all the work, turning the soil over, then power-harrowing and drilling was very time-consuming and costly. We were also rearing 5,000 pigs from 7–35kg on a bed & breakfast basis, so there were lots of demands on our time and we weren't exactly looking for things to do. It was apparent that we needed a more efficient way of establishing crops, but clearly a zero-till approach would have been a non-starter on this heavy land.

"At one time, farmers were able to spray against almost any weed or pest issue but increasing legislation and a reducing pool of ag-chem products has made the job more difficult, so we also felt that there had to be a better, more sustainable alternative.

"After seeing the Opti-Till System advertised, we looked around the Claydon farm and saw the benefits on some of the heaviest, most difficult to manage land in the country. Our independent agronomist was not too keen initially but having seen the advantages and excellent results has changed his mind, so much so that he now has several other clients who use this approach.

"We ordered a new 3m Claydon Hybrid mounted drill and began seeing the benefits from using it in the first season, particularly on oilseed rape where yields were much higher than with our previous system. Like so many other farms in the UK we were subsequently affected by cabbage stem flea beetle and the last crop of oilseed rape we harvested was in 2018. We haven't grown it since, but after a long break we plan to give OSR another go in 2022."

Versatile drill

The Claydon Hybrid will sow direct into stubbles or cultivated soils, both min-tilled and ploughed, with or without fertiliser placement between or in the seeded rows. With a few simple, quick modifications, it can also be used for conventional

sowing, low-disturbance establishment, and zero-till seeding. This makes it a much more versatile, cost-effective solution than purchasing a strip till drill and a specialist low-disturbance model.

In standard form, the drill's unique leading tine busts out compaction, aerates the soil and creates drainage/tilth in the seeding and rooting zones. The seeding tine which follows then creates more tilth and places the seed under it, at the chosen depth above the drainage channel.

Adding to the benefits

"A year after buying the Claydon Hybrid drill we added a 7.5m Claydon Straw Harrow, which has been amazing. Until you experience the benefits it would be very easy to dismiss it as not doing very much, but nothing could be further from the truth. It is a very effective and efficient piece of equipment."

A key part of establishing crops successfully is to achieve an optimum tilth as soon as possible after harvest so volunteers and weeds seeds can germinate. Even if no green shoots are visible on the surface, weeds and volunteers will be growing under the straw.

The conventional min-till approach can be problematic because moving 100–125mm of soil will significantly slow germination or bury weed/volunteer seeds so deep that they do not germinate until after the crop emerges, creating major cost and control issues.

Deeper cultivations also present a significant weather risk, as heavy rain will reduce the soil to a sticky mess with no structure or ability to support following machinery. The surface can also seal over and become anaerobic, creating issues



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with water 'ponding' or run-off. In extreme cases, full cultivations may initially be necessary to put right the impact of min-till, in which case weed/volunteer seeds will be buried even more deeply, making control impossible and providing ideal conditions for slugs.

The Claydon Straw Harrow distributes chopped straw evenly and creates a fine, level 2–3cm tilth, providing the high-humidity conditions necessary for weeds and volunteers to germinate rapidly. Straw harrowing also halts the soil's natural capillary action, preventing water from being drawn up to the surface and the surface from drying out with the action of wind and sun to form a hard, impermeable layer.

Using it when weeds and volunteers are less than 2cm tall will kill 70% of them, so repeating this several times will dramatically reduce their numbers and slug populations, often to the point where we need fewer chemicals and there is no need to apply slug pellets. This fast, low-cost operation is highly effective, James confirms.

After crops have been harvested by the farm's John Deere W540 combine and the contractor's MF 2170 has packaged all the straw into 500kg bales, every acre is covered with the Straw Harrow, often multiple times to maximise the benefits. It flies over the fields, distributing any loose straw that the baler might have missed, killing slugs and their eggs, at the same time creating a fine 1–2cm tilth which encourages weed seeds and volunteers to germinate rapidly.

"For spring crops, we just use the Straw Harrow in the autumn, spray off any residues and either do another pass with the Straw Harrow or shallow disc, no more than 2in deep, before drilling at the end of March or early April. The manure from the pig unit does wonders for the condition of the soils and crops but spreading it does cause compaction, so in those areas we tend to subsoil to 9in.

"We run the 3m Claydon Hybrid behind a 235hp John Deere 6195, which provides plenty of power even on our heavy land. The front tines run 15cm deep for establishing OSR and the seed is drilled at 1cm using the standard Claydon A-Share. For cereals the leading tine runs at 10cm and seed goes in at 2–2.5cm. That works well and instead of leaving tramlines we use the John Deere's GPS guidance when applying pre-emergence products at 24m, so all other operations follow the same wheelings.

"After six years of using Claydon Opti-Till the soil structure has improved so much that it is unrecognisable compared with how it was before. Even where we have just used the Straw Harrow

after harvest the soil is alive with worms and their casts are all over the surface, so there must be an unbelievable number in the soil profile.

"The other major benefit is that it encourages plants to develop unbelievable rooting structures which we simply never saw with a conventional establishment system, so even very dry conditions are not a problem as roots penetrate deep into the soil. In 2020, we had no rain from April until June, yet the crops looked exceptional throughout.

"The improved structure and weather resilience of the soil has made following operations such as spraying and fertiliser application much easier and more predictable, even after heavy rain. During the very wet 2019/2020 season that was a huge positive, as muck was spread early, autumn sown crops were drilled before the really heavy rain fell and subsequently developed their full potential."

A novel approach

For the last few years, the Hebbelthwaites have drilled cereals at 250kg/ha – double the seed rate used just a few years ago, which has proven very effective in crowding out weeds, both those growing in and between the rows. This has been enhanced by the purchase of a 3m Claydon TerraBlade inter-row hoe, this low-cost, reliable piece of equipment being acquired in 2020 from dealer Sharmans' Melton Mowbray branch.

The TerraBlade is an extremely effective, low-cost, mechanical method of controlling weeds growing between the rows in band-sown crops. By keeping the unseeded rows clear of weeds during the early stages of crop growth, competition for nutrients, light, air, and water is reduced, enabling the young plants to grow strong and healthy, and helping to maximise crop yields. It eliminates weeds reliably, safely without using chemicals and clears up any that were missed by ag-chems, or where such products cannot be used, as in organic systems. This drastically lowers the potential for carry-over of weed seeds and the risk of more resistant types developing.

Claydon's TerraBlade range now includes five models from 3–8m wide, designed for use on a Cat II front linkage – allowing for effective manual steering of the hoe blades between seeded rows.

"Although herbicides remain an essential part of modern agriculture, their cost is continually increasing, and they seem to be becoming less effective," James states. "Our experience is that if we apply a herbicide in the spring it will take out 50–60% of target weeds, but not touch the rest, so that is why the TerraBlade is such an effective tool



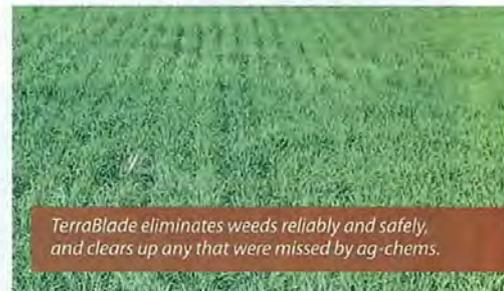
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"The only addition that we have made to the standard specification of our Claydon Hybrid has been to add two additional depth wheels, which have made the drill even more stable and further improved consistent seed placement. Our latest purchase is the Claydon Twin-Tine kit, which we will use for drilling spring crops. Overall, we have been delighted with the Claydon Opti-Till System." **FG**