



FOCUS YORKSHIRE

FARM FACTS

Farmer: Wayne Turnbull

Location: near Driffield, Yorkshire

Area farmed: 400 hectares

Soil: free draining soil over chalk

Cropping: winter wheat, winter barley, oilseed rape, vining peas, multi species cover and catch crops

With a little help from his son Amos, Wayne Turnbull checks how deep the leading tine is operating. The 4.8m Hybrid is drilling first wheats for 2022 harvest into stubble left by the previous crop of oilseed rape. KWS Extase winter wheat loves to be direct seeded, as does hybrid barley which tillers strongly and fills the space between the rows, helping to out-compete weeds.

Improving soil ecology is the goal for Yorkshire mixed farm

Improving soil ecology was the primary reason R. H. Mason in Yorkshire changed from conventional plough-based crop establishment to direct seeding. Five years' experience has shown that the system has numerous other benefits, including massive labour, time and cost savings.

"As farmers, our aim should be to enhance levels of soil ecology rather than simply preserving them. Retaining organic matter through the use of non-inversion techniques is fundamental to that objective," states Wayne Turnbull, manager of R. H. Mason's mixed enterprise near Driffield. Five years ago, Wayne decided that the best way to improve the situation was to stop all heavy cultivations on the 400 hectares of Yorkshire Wold over chalk land at Wold Newton Grange.

"Our 100 suckler cows do not put enough organic matter into the soils to raise levels significantly. We have about 20cm of soil before hitting chalk, so ploughing made no sense to me," says Wayne, who grew up on his parents' farm and served 12 years

in the military before returning to a life on the land.

"I worked here for four years before being appointed farm manager in 2016 and always felt that our approach to crop establishment needed to change. A key

goal was to improve the soils, which meant working them less, as well as reducing the time and cost involved in establishing crops. Labour is also a big issue because fewer people seem to want to work and even less want to work on farms, so that was another priority.



A crop of Claydon-drilled KWS Grafton winter feed wheat grown as a first wheat.



Harvesting KWS Grafton winter wheat in 2021.



The farm's 36m sprayer is used to apply fertilisers and agchems. Wayne Turnbull does not use tramlines as bare soil could cause nutrient run-off in wet conditions. All cereal crops are desiccated as the wheat and barley are grown for feed.

NO SHORTAGE OF DOUBTERS

When I was thinking of changing to the Claydon Opti-Till® direct seeding system many people had an opinion. Comments ranged from 'you won't be able to go when it is wet' to 'you'll get a lot of weed issues', but none had tried it for themselves and were in no position to judge.

My counter argument was that if ploughing is the ultimate way to control weeds why, after centuries of using it, are there any left in the soil, and why do they remain a perennial challenge? Rather than invert the soil and mix weed seeds throughout the profile I felt it would be best to confine them to a shallow layer close to the surface

and progressively reduce their numbers by chemical and mechanical means.

Having heard a lot of good things about Claydon Opti-Till® from speaking to various owners on the 'phone I visited six farms in the area which were using it to establish crops on different soil types. These included one with the same type of land that we have here. All were happy with it and after discussing the advantages with Wold Newton Grange's owner, Mrs Christine Mason, I was given the green light to look for a Claydon drill.

Our 4.8m Hybrid was two years old when we bought it and had been traded in against a new trailed Claydon Hybrid drill. Before

buying it, I was even able to visit its previous owner, discuss how he had used it and see the results for myself. It was great to be able to do that and his experiences were all positive.

Initially, I adopted a 50:50 approach to compare our conventional system with Claydon Opti-Till®. The loss of our ploughman earlier that year put pressure on the labour situation and time, so the ratio turned out to be 80:20 in favour of the Claydon, which performed well from the start.

The first year was very dry, but the drill's leading tines broke the soil and seed went into moisture, so it got off to a flying start and yielded well. Although time and costs have been massively reduced, yields are on a par with conventional establishment, 12 to 13t/ha for winter wheat, which we grow alongside winter barley, winter oilseed rape and vining peas.

We continued to compare our conventional approach with the Claydon System in two fields with similar soil. Analysis by SOYL confirmed that after two years of using Opti-Till® blackgrass had been reduced to a level at which it could be hand rogued. In the third year we continued to use the Claydon System in one field and ploughed the other to compare the two methods.

Ploughing was a big mistake because it brought a huge bank of weed seeds up from depth and took the next two years to clean up. I also noticed that when we drilled directly on unploughed land it left barely a mark, whereas the ploughed land was badly rutted, due to a wet harvest, creating soil damage which had to be rectified. That was when we stopped ploughing and went all-in on the Claydon approach.

Our largest field is 50 hectares and had a legacy of light blackgrass from years of conventional cultivations. I have Claydon-drilled it in December for each of the last four years without any problems and the land has become so supportive that travelling on it has never been an issue, even late in the year. The blackgrass has almost completely disappeared.

Nutrient leaching is a potential problem on our very free-draining soils, so we grow 100 acres of multi-species cover and catch crops to maintain ground cover over winter in land destined for spring crops. To maximise their potential, they must be drilled correctly rather than being muddled in, so the Claydon drill's A-share creates a good tilth and achieves the best germination. We have also reintroduced up to 500 sheep on our arable land to help with carbon sequestration.

TRANSITIONING TO DIRECT SEEDING

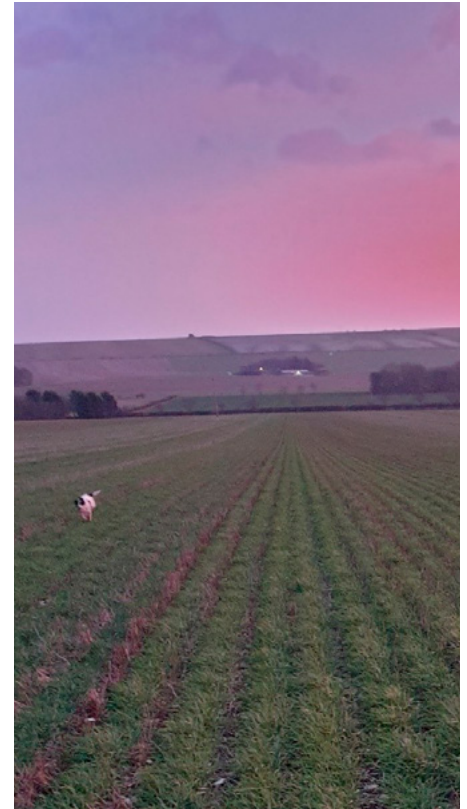
Many people go into direct drilling or direct seeding purely to save money. That is certainly important because the cost of all inputs, especially those derived from oil and gas, has increased significantly, but it was not our main objective. Primarily, the benefits of direct seeding to soil ecology were what drove us down that path.

There are several important aspects to appreciate when direct seeding, one of them being attention to detail when it comes to stubble hygiene and management. The potential for volunteer cereals in the next cereal crop is ever present, especially if stubble management is not completed, so it is not as simple as just going straight into stubbles with the drill. Rolling for consolidation on the small amount of soil that has been moved is important and a key operation in the system.

Our 7.5m Claydon Straw Harrow is a key part of that process. We use it immediately after our Claas Lexion has finished harvesting the



Claydon-drilled SY Kingsbarn six-row hybrid feed barley growing in 2021.



Claydon-drilled SY Kingsbarn six-row hybrid feed barley photographed in February 2022.



A cover crop of oats, rye, phacelia, and clover is Claydon-drilled in the autumn, then grazed off by sheep before vining peas go in during the spring.

crop and cereal straw has been baled for our cattle. We like to leave a longer stubble because this provides more food for the worms over winter, helps to discourage pigeons which do not like landing on it, and creates a microclimate that helps to protect the emerging crop from cold winds off the North Sea which are a feature of this area.

The Straw Harrow helps to spread loose straw, chit volunteers and pull out any weeds that are growing, as well as killing slugs and destroying their eggs. This process is carried out two or three times prior to drilling, at a cost of approximately £10/ha for three passes. If farmyard manure is to be spread and incorporated prior to drilling, using a Claydon TerraStar for example, rates of 8-10 tonne/acre works well.

The Claydon Straw Harrow and drill are used behind our John Deere 6250R which operates at 1400rpm, so we are not knocking the stuffing out of the engine and transmission as would be the case if using a power harrow. Our 4.8m drill will cover 4 – 5 hectares an hour at a sensible forward speed and by not cultivating land before drilling we eliminate weather risk. The total amount of fuel used to establish crops can

be as little as 13 litres per hectare, a massive reduction compared with our previous approach. With fuel prices where they are now that is a significant cost saving.

We have also drilled vining peas with the Claydon, saving £85 per hectare on establishment costs over the 40 hectares grown each year. Field trials have proven that the Claydon direct seeding till system had no detriment to establishment, providing a fantastic rooting zone required by the crop and yields were well above the pea groups set target yields.

Soil ecology has benefitted enormously from the change to direct seeding, the number of worm casts on the soil surface is phenomenal and surface drainage is much improved. There is no need to dig a trench to see the worms because any root pulled from the ground will be covered in them. They are always working to improve the soil and much cheaper than wearing metal.

One excellent aspect of the Claydon drill is that it can be converted to a disc drill quickly and easily. The leading tine is invaluable for dealing with extremes of weather, but our soils have improved so much that we do not need it in most situations.



The farm's herd of 100 suckler cows helps to return organic matter to the soil.

Being able to change to discs is a tremendous benefit and although fuel use was already exceptionally low using them has reduced that even further.

We have had our Claydon drill for five seasons and covered 300ha each year.

Although the A shares have been changed the front tines are still original and have plenty of life left in them. Our John Deere 6250R produces up to 246hp and has the power to pull a larger drill, so in time I would like a front mount hopper with a 6m Claydon as a rear toolbar as it would

be easier to see the individual coulters. The larger unit would also increase output by 20 per cent and save considerable time, which is important because of the tight labour situation and noticeable change in weather patterns."



This DK Extremus winter oilseed rape, photographed at the end of February, was drilled with a companion crop of berseem clover, fenugreek, and buckwheat.



Wayne Turnbull does all the drilling, so from the time the seed goes down the Claydon's A-share it is his responsibility. The farm employs one apprentice, while Wayne's father and uncle help out on a part-time basis.