



'Minimalist arable farming' is how Jonathan Holland describes the Claydon System, which he uses to produce 1000 acres of arable crops on his own.



FOCUS BERKSHIRE

1,000 acres – one man, one tractor, one Claydon drill

What does it take to establish 1,000 acres of combinable crops? "One man, one tractor and one Claydon drill, says Berkshire farmer Jonathan Holland.

Three years ago, Jonathan Holland carefully considered the future of his farming operation, even though yields were good and the business was profitable. Despite being in a good position, he felt that the economic and legislative pressures on the farming sector will only increase, reducing profitability.

To help future-proof his business Jonathan decided to greatly simplify the system used to establish the 1,000 acres of arable crops he produces around Newbury. The aim was to significantly reduce costs whilst maintaining yields and gross margins. That goal has been achieved. Yields have improved, fixed costs are much lower, the labour bill is zero, wearing metal cost just £760 last season while at under £8,000 the annual spend on diesel is a fraction of what it was before.

Despite saving £60,000 per year (£60/acre) since changing to the Claydon System, 44-year-old Jonathan says his crops have never looked or performed better. With all the speculation over what might happen following Brexit, other farmers are watching closely to see what he is doing.

"Ten years ago, I would never have thought that I'd be establishing all the crops myself and doing all the spraying. But times have changed and we must change with them," states Jonathan, whose family farmed in the Newbury area for many years. Jonathan, who started farming in 1994 after graduating from the Royal Agricultural University, Cirencester, adds:

"Previously, I used contractors for most of the work, but their charges were increasing and other inputs such as fuel were going up sharply, so the only way to reduce my costs significantly was by adopting a much more efficient system. Given the potential revenue reductions from Brexit every UK farmer will have to look much more closely at what crops are costing to produce and cut their cloth accordingly. I wanted to do that sooner rather than later to give me time to adjust, rather than being forced into it."

The min-till system Jonathan used previously involved a Kongskilde Vibroflex stubble cultivator followed by a Great Plains seedbed maker to produce the final tilth. From a conventional viewpoint, the seedbeds

looked good but blackgrass was becoming an increasing problem because the tines on the stubble cultivator mixed the seeds throughout the soil profile. With the efficacy of ag-chem products decreasing Jonathan felt that this was not the way forward in terms of containing the problem at manageable levels.

MAJOR CHANGES

Despite being nominally 'min-till' this system was also time consuming, involved lots of labour and burned huge amounts of diesel. It also tore through wearing metal at a rate of knots on the flinty soils, which made it expensive, albeit still cheaper than ploughing.

"Our rotation was focused on winter wheat, winter barley and winter oilseed rape, with a little spring barley," Jonathan explains. "There was so much work to get through in the autumn that we had to start drilling earlier than the optimum time to maximise blackgrass control. We also grew oilseed rape too often in the rotation and producing winter barley didn't help.

"After much thought, I decided that the ideal approach would be to do everything myself. For that to happen I would have to completely change the establishment system and rotation. When I discussed what I had in mind everyone told me that I was mad, including my father. He had seen some real disasters with direct drilling back in the 1970s and 1980s when farmers began using disc-type machines which were totally unsuited to UK conditions.

FARM FACTS

Farmer: Jonathan Holland

Location: Berkshire

Area farmed: 1,000 acres

Cropping: winter wheat, OSR, spring barley, spring and winter beans

Soil: light loam, flinty chalk, clay cap

"Moving to a new system was a risk, but it was the same in 1994 when changing from a plough-based system to min-till. Having been min-tilled for 20 years my soils were well suited to strip seeding, and I began researching all the equipment on the market.

"I even got as far as ordering a Sumo DTS, but when I visited a neighbour with a Claydon Hybrid and saw the results they were achieving I realised that I'd not given the Claydon System the attention it merited. I drove to Suffolk to meet the inventor, Jeff Claydon, who took me around his farm and told me about the Claydon System. When he explained about its unique tine system and how not mixing weeds and volunteers throughout soil layers provides an opportunity to control them using a Claydon Straw Harrow the whole system made a great deal of sense.

"Simple, no-frills equipment appeals to me and the Claydon Hybrid drill seemed a much more practical solution, as it was far less complicated and more adaptable than anything else I had seen. After thinking it over carefully and looking at crops drilled with Claydon, Mzuri and Sumo equipment I ordered a 3m mounted Claydon Hybrid, but subsequently went for a 4m version to provide plenty of reserve capacity in the event of adverse weather or taking on more land.

"The Claydon System allows me to do everything myself, with just a 215hp John Deere 6215R, 7.5m Claydon Straw Harrow, 4m Claydon Hybrid drill and a trailed 24m 3400-litre sprayer which is also used to apply liquid fertilisers.

"The big advantage of the Claydon Hybrid is its very high output. I tend to operate it at a forward speed of 9kph, which is much less than its full potential of 12kph, but that's ideal on this land, much of which contains large stones and flints, as it maximises the quality of the work. Even so, I can drill 500 acres of winter wheat, roll it and apply a pre-em in under a week, so there's no need to rush and I can focus on achieving optimum results.

My agronomist, Esmé Shephard of Agrovista, has been very good in adapting to the changes which I have made to my business. She has taken a very open-minded approach to my new system and got on board fully with the Claydon System, having seen the benefits which it can bring to an efficient farming system.

"The new rotation is 350 acres of winter wheat, 350 acres of oilseed rape, 300 acres of spring barley, together with spring and winter beans. Having more spring crops help to spread the workload and I am far more selective about where oilseed rape is grown.

"My winter wheats this year are Revelation and Siskin, the aim being high yield rather than milling quality, which is expensive and a risk that might not pay off. I had been expecting yields to drop initially using the Claydon System, as they had when changing from ploughing to min-till 22 years ago, but that has not been the case.

"Establishing oilseed rape immediately behind the combine takes three to four days, and I can do it myself because a contractor does the harvesting and carts the grain to our

2,500-tonne on-floor store. I Straw harrow, then ring roll the stubble, then drill. I set the leading tine on the Claydon Hybrid so that it is about 125mm deep, with the A-Share just skimming the surface at 5-10mm deep and the batter boards and following harrow set at exactly the right angle to produce perfect results."

Cereals are drilled 35-50mm deep so that they are unaffected by the pre-em, while spring barley goes in no more than 25mm so that it gets away quickly. Establishing the 380 acres of Propino spring barley takes six days, as Jonathan simply sprays off weeds and volunteers with glyphosate, then drills, rolls and applies a pre-em.

In the last two years, all the spring barley has gone for malting; last year the average yield was 2.85t/a, with a high specific weight (67kg/hl), good bold grains and no skinning. Of the 970 tonnes of malting barley that left the farm none was subject to claims, compared with 25% normally.

HEADLANDS ARE BACK

"Despite the speed and simplicity of the Claydon System, my crops have never looked better or produced higher yields," Jonathan adds. "Part of the reason is that the headlands are so much more productive. I like to tell people that by using it I have got my headlands back.

"Rather than just being areas that previously I would have accepted as having much lower yield potential because of compaction, they are now just as productive as the rest of the field. That's because I only work in ideal conditions. The leading tine on the Claydon drill removes any previous compaction and the number of passes is greatly reduced.



Jonathan Holland with his 4m Claydon Hybrid. "Despite the speed and simplicity of the Claydon System, my crops have never looked better or produced higher yields."



Claydon leading tines lift and aerate the soil - but only in the seeding zone - creating a moist tilth and the perfect growing environment

“Everyone in farming seems to get really excited by the harvest, but I don’t have a romantic view of it. Under my system that side of things is an entirely self-contained operation. The contractor I use for combining and carting is obsessive about that side of things so I have the confidence to leave it all to him. I just tell him the length of stubble to leave, which fields will be baled and which need chopping. The straw is sold in the swath to a merchant who does a very good job of clearing the fields, which allows me to focus on establishing next year’s crops in the optimum way, under optimum conditions.”

A key component of the system, the Claydon Straw Harrow, creates a micro-tilth in the top 25-30mm of soil. Fast and low-cost, it can be used to even out crop residues, shaking out the seeds and heads missed by the harvester. It produces a small amount of tilth to germinate volunteers and weeds, at the same time killing slugs and destroying their eggs. The brushing action will also kill cotyledon weeds and grasses simply by breaking off the growing shoots. The Straw Harrow can also be used to harrow in and improve seedbeds after drilling.

Operating at up to 25kph, Jonathan can comfortably cover 200 acres from 10am to 4pm when conditions are dry and temperatures are at their highest, providing the ideal conditions to kill weeds and slugs. The 14mm-diameter flexible steel tines disturb the top 10-30mm of soil, just enough to create a fine tilth. This operation is so fast and cheap that it can be repeated every 7 to 14 days when conditions are favourable. Very little soil is moved so that if wet weather follows, this mini-tilth will quickly dry out and not delay subsequent operations, either another pass with the Straw Harrow or drilling.

Claydon point out that even if green shoots are not visible on the surface, weeds and volunteers will still be growing under the

straw and moving the soil at this stage will achieve a 70% kill. Repeat this several times and you dramatically reduce weed and slug populations, without relying on expensive ag-chems, which can only be applied once, whereas the Claydon Straw Harrow can be used for many years.

“I Straw Harrow within 24 hours of combining to even out any chopped straw and achieve about 30mm of tilth, which is perfect because the overnight dews at that time of year provide enough moisture to kill the weed seeds and volunteers within days. Another pass with the straw harrow and they just dry up and wither.

“The same goes for slugs, which can’t deal with being hit by a fast-moving steel tine. Since adopting the Straw Harrow, slug populations have dropped dramatically and now they cause very little damage. I apply 4kg/ha of Metaldehyde behind the drill, then roll, walk the fields every few days to keep a check on the situation and another 4kg/ha goes on if necessary, but that’s unusual. It’s certainly much less than the 7kg/ha we were applying behind the Vaderstad Rapid using min-till.

MINIMALIST ARABLE FARMING

Claydon Hybrid drills eliminate unnecessary cultivations and make it easy to establish all types of combinable crops directly into stubble. Their versatility means that they can also drill into min-tilled or fully cultivated soils. A wide range of trailed and mounted models with working widths from 3m to 8m and seasonal outputs from 700ha to 2500ha is available to suit any farm. A minimum of moving and wearing parts ensures low operating/servicing costs and a high retained value.

The Claydon Hybrid is very simple to use. I am amazed how it will level and drill even uneven fields, with no need to subsoil. Careful set-up is the key to making it work really well,” Jonathan points out. “Every time I fill it with seed I use a spirit level to ensure that the drill remains completely flat, longitudinally and laterally. The key point with the Claydon drill is that rather than just seeing the batter boards and following harrow as ancillary they are vital to the overall result and need to be set up carefully to leave a level surface and maximise the effectiveness of the pre-ems.

“To reduce the risk of the weather turning, I aim to drill when 90% of the field is ready rather than always waiting for perfect conditions. Although I don’t use variable rate seeding I do vary the rate manually by up to 20 per cent if conditions require it. I start drilling wheat about 20 September using 170kg/ha and have increased that to 190kg/ha in October, but this autumn I will increase that to 220kg/ha.

“This year, I drilled all the spring barley by 24 March and although it had not rained for some time the seed went into moist soil. That meant it germinated quickly and grew away evenly, unlike a lot of farms in this area which drilled conventionally and are struggling with poor and uneven emergence. The opposite happened last year, when persistent heavy rain meant that fields which had been ploughed or min-tilled stayed wet for weeks and delayed both drilling and subsequent operations.



Oilseed rape drilled directly into barley stubble.

Because the Claydon System has greatly improved the structure of the soil, my fields drained well and within a couple of days of the rain stopping I could get on them.

“With the Claydon System crops burst into life much earlier in the spring, so the trick is not to let them get hungry and in February I apply 40 kgN/ha in liquid form. Sewage sludge works well with the Claydon System and Thames Water spread it in the spring and summer, before drilling.

“Some might question how it is possible to produce highly-productive crops so consistently using just a Claydon Straw Harrow and Claydon Hybrid drill, but this system works superbly. Others will think that because it is so simple and involves so few operations compared with other techniques you don’t need to pay much attention to detail, but that would be a mistake.

“Having sold all of my other equipment two years ago I don’t even have a cultivator, so there’s no chance to cover up any mistakes. The big advantage of the Claydon System is that a sensible, sprayer-sized tractor can still pull a 4m version and cover 70-80 acres a day, so you can wait until the ideal time and conditions to drill. You then have much more time to check the crop and spend with the family.

“Like everyone else, I am looking to expand, and could easily take on more land with the same machinery, but the key thing is not to do so for vanity’s sake but in a controlled way which is profitable.

“Other farmers are seeing that the Claydon System offers a viable way to significantly reduce their costs without sacrificing yields and therefore improve margins. I get much more excited about growing crops using a minimum of inputs than I ever did with a full-blown cultivations system. There’s a real kick to be had from only needing one tractor on 1000 acres – I describe what I do as ‘minimalist arable farming’.”



Barley emerging on the stony brash soils.



Despite very dry conditions this spring, crops grew away quickly to provide a dense, even crop canopy which helped to suppress weeds.



The Claydon System creates ideal conditions in which strong, vigorous root structures can develop.

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