Optimum Tillage

Claydon had plenty to interest visitors at its open days in May, which presented the company's new optimum tillage crop establishment system.

Jeff Claydon (left) with his son Spencer.

The uncertainties surrounding the state of British agriculture post-Brexit mean that farmers will have to become much more efficient and substantially reduce their 'cost per tonne' of production to remain competitive in a rapidly changing marketplace. That was the message which arable farmer and agricultural engineer Jeff Claydon delivered to 150-plus farmers who attended the company's open days in Suffolk. He stated:

"The key issue which every farmer has to ask themselves right now is 'how am I going to reduce my production costs to a base level which will enable me to compete in a global market, yet continue to operate a financially and agronomically viable farming business? The other major challenge which makes that even more difficult, is the fact that since 2009 we have lost over 200 ag-chem products and many of those which are still available are becoming less effective and more expensive. As a company, our goal is to help them do that.

"British farmers are already very efficient, but the crops we produce often have to compete for buyers with those grown in countries with a much lower cost base, such as Romania, where agricultural workers may be paid only €2 an hour, blackgrass is not an issue and wheat can be produced for €40/t, so professional farming businesses are very profitable.

"There are many ways for us to cut costs, but the key is to do that in the right areas to maintain productivity. On our own farm during the 1970s we thought that the more soil we moved the better and with tractors becoming much more powerful we had the ability to do so. Our record was 17 passes to create a seedbed for oilseed rape and even in good conditions where far fewer were required we were still burning diesel at the rate of 125 l/ha, compared with just 12–15 l/ha today using the Claydon Optimum Tillage system. It soon became apparent that using powerful equipment in the wrong conditions also created huge risks to our soils and yields.

"Today, we are seeing the other extreme, with some farmers simply cutting seed into the ground using a zero-till drill. In the UK's maritime climate that also represents a huge risk. It might work 60% of the time, but there's no point in reducing your tillage costs to zero if you lose 40% in yield, and the 40% when zero-till doesn't work will probably put you out of business.

"Most farmers currently use some form of min-till to establish crops, but move a lot of soil and incur excessive costs in the process. Typically, a 300ha farm might be carrying out one pass with a 3m deep tine cultivator/disc/packer-type implement which will cost £40.25/ha, then follow this with a shallow pass with a 4m power harrow costing £43.13/ha, one pass with a 4m drill which adds £36.63/ha and then consolidate the crop with 12m rolls, adding a further £11.13. The average time taken for this system would be 42 minutes/ha, much less than the 110 minutes/ha for a plough-based system, but the total cost would still be £131.13/ha, or £39,337.50 per year.

"Using the Claydon Optimum Tillage system will save the same farm £17,805 per year, or £89,025 over a five-year period. That is based on three passes with a 7.5m Claydon Straw Harrow to achieve effective stubble management (total £24.15), drilling with a 4m Claydon Drill (£36.50) and rolling (£11.13), for a total of £71.78/ha, or £21,532 per annum, a cost saving of almost 50%.

"The Claydon system which we have developed over the last 15 years provides the optimum level of tillage required to establish the crop, both in the seeding zone and the rooting zone. It incorporates a leading tine which lifts, aerates and drains the soil, followed by a seeding tine which clears trash and places seed in 75-180mm-wide bands which are 300mm apart, and these produce the ideal environment for the crop to grow and thrive," explains Jeff.

Claydon optimum tillage can also improve timeliness, enabling crops to be drilled under optimum conditions, which in turn reduces weather risk, results in more even, reliable establishment and produces higher yields. It also generates a range of other significant environmental and wildlife related benefits.

"With the economics of producing combinable crops as they are currently, farmers simply cannot afford to have underperforming land and crops, which is why it is vital to focus on establishing them correctly, using a flexible, reliable, low cost system. In the last four years using Claydon optimum tillage we have seen a massive reduction in grass weeds, together with an average yield improvement of 10%, and up to 27% in dry conditions," Jeff concluded.

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Claydon Opens New Offices

"The Claydon System is becoming increasingly popular as farming businesses seek to remain profitable without running down natural resources," Spencer Claydon, Commercial Director, explains:

"To support the expansion of our manufacturing operation we have taken on more staff in recent years and wanted to provide them with a high-quality working environment. Every year we host many visits by groups of farmers, dealers and importers from all over the world, which is a core part of our marketing strategy, so it's also important to be able to accommodate visitors in an attractive and comfortable environment.

"The new facilities represent a £500,000 investment and provide a professional image for our company and products, and will accommodate our plans to further develop the business and demonstrate our ongoing commitment to the agricultural sector."

Originally envisaged in 2012, the new offices received planning permission in March 2016 and work on the project started in July, coinciding with the complete restructuring of Claydon's workshop facilities to cope with orders for the company's expanding range. Claydon staff completed the ground works, with the construction and fitting out of the building involving suppliers and contractors from across the Anglia region.

Blending in with the existing workshop building and surrounding countryside to minimise their visual impact, the new office facilities are spread over two floors. Covering 365m^2 they can accommodate up to 27 full and part-time support staff on the top level, the ground floor being dedicated to visitors, with two meeting rooms, a dealer training facility, a presentation studio which can accommodate 60 people, together with commercial-grade catering facilities. A £100,000 investment in solar technologies provides 100kW/h of electrical energy, helping to reduce the amount of power used at the site and to minimise the company's carbon footprint.

Claydon Weed Control

The new Claydon Inter-Row Hoe provides an effective method of controlling weeds in combinable crops which have been band sown using a Claydon Hybrid drill.

Developed to help growers enhance levels of weed control, counteract reductions in the efficacy of some current herbicides and reduce input costs, it has been prototyped on the Claydon family's own farm over the last two seasons.

Providing a valuable additional weapon in the agricultural industry's weed control armoury, the Claydon Inter-Row Hoe represents a further significant advantage in favour of the Claydon Optimum Tillage system, according to Oliver Claydon, the company's Operations Director. He states:

"The overall application of herbicides has for many years provided efficient, cost-effective weed control in combinable crops, but with some products now becoming less reliable, less effective and much more expensive that situation is changing rapidly. The potential loss of glyphosate is also of great concern to farmers and requires alternative methods to be developed.

"Blackgrass, for example, is a by-product of modern farming systems, regardless of which establishment method is used, and over the last few years it has become increasingly resistant to current herbicides. Some growers are already spending £40/ha on a product that in some cases is only 50 per cent effective, or even less where they have resistant weeds. With no new chemistry on the horizon it was important for us to develop a method to improve weed control and further reduce input costs.

"Inter-Row hoeing has long been used in row crops such as sugar beet but has not been possible in cereals which are drilled in conventional 125mm rows. Band sowing at 300mm leaves a 14cm -15cm-wide unseeded strip between the rows which can be mechanically hoed, providing an opportunity to eliminate weeds from that area easily, reliably, safely, cost-effectively and in a more environmentally-sensitive way."

Designed for use on any tractor with a Cat II front linkage, at speeds of approximately 6 km/h and up to 20mm deep, the Claydon Inter-Row Hoe is manually steered and can be used whenever soil conditions allow, covering up to 40ha a day with a 6m unit. On farms that drill early, crops may be sufficiently well developed in the autumn to start using the technique then, and in the spring the operation can continue whenever soil conditions allow, up to the stage where the crop might be compromised by further passes.

"Trials of the Claydon Inter-Row Hoe on our own farms, in conjunction with the use of herbicides, have proved that the unit will pay for itself quickly through reductions in grass weeds and improved crop yields, drastically lowering the potential for carry-over of weed seeds and reduces the risk of development of more resistant types. The unit will give years of reliable service, has very low operating costs and offers great flexibility," Mr Claydon adds.

"The Claydon Inter-Row Hoe can be used whenever the opportunity arises and enables closely targeted weed control measures to be implemented flexibly. On the Claydon farm we have been trialling a 6m version, which has been used with our smallest tractor, a 177hp Claas Axion 640 on 600-section tyres, because long-term use of the Claydon optimum till establishment system has left the fields level and well-structured. This enables field operations to start in early spring if required without the need for expensive specialist tyre and wheel equipment."

Claydon are conducting final trials with a 6m Inter-Row Hoe this season and plan to introduce a range to match the width of the company's range of drills later in the year. ■