



“As an industry we must stop trying to beat Mother Nature into submission with horsepower and work in harmony with her.”

Strip seeding brings soil saviour

Machinery On Farm Opinion

Soil health and the potential impact that minimum tillage can have is gaining a lot of traction in the industry. CPM visits one Scottish farmer who has made significant improvements to productivity by switching up crop establishment methods.

By Julian Cooksley

“The Firth of Clyde often turns brown after heavy rain as a result of topsoil being eroded from farmland and washed down into the water courses which feed into it,” says Lord David Kennedy, looking out onto the picturesque region of Ayrshire, Scotland.

It's a stunning morning and the view that surrounds Morriston Farm is one that most could only dream of, however, over the years it has suffered significantly due to the effects of traditional crop establishment methods. “It's very visible,

doesn't reflect well on the farming community and has been caused by a number of field operations — from traditional cultivation methods based on ploughing; min-till techniques; and power harrow/drill combinations, to the use of stone separators, bed-formers and planters to establish the potato crop.”

Lack of stubble

Over the years, he believes the intensity of the cultivations has led to a lack of stubble roots left in the ground. This has resulted in little material to hold the topsoil in place, meaning it washes away easily — the problem only exacerbated by the region's rolling landscape and numerous watercourses. “We were once part of the problem as those methods were used here many years ago. Our mainly light to medium sandy loam soils often washed onto roads or into ditches after ploughing, which was an unsustainable situation and not good for our public image.”

As a result of the increasing damage, in the late 90s, Lord David made the decision to switch from ploughing to min-till farming. “I was one of the first in the area to use a power harrow-drill combination to establish crops after ploughing because it required less labour

than the system of double harrowing before drilling that we used before,” he says. “Nothing else will make cultivated fields look better than a power harrow-drill combination and the crops appear to be phenomenal when they emerge, but I quickly became one of the first to stop using it.

“I've always loved soil and seeing what this method was doing to it — in terms of creating pans and erosion — was just hellish. Instead I started the long, slow process of adapting to min-till, which nobody else was doing in this area at that time. It was an improvement, but I felt



Lord David Kennedy is now in his ninth season using the Claydon System, which has brought massive improvements.

more could be done."

Following a 10-year stint with minimum tillage, Lord David made the move to direct strip-seeding in 2010.

In recent years traditional winter wheat and winter barley has been replaced by wholecrop hybrid rye and triticale to supply an anaerobic digester. Other crops currently produced include spring barley, spring beans, maize and fodder beet.



Claydon drilled crop at Morrision Farms.

Except for the latter, all are established using the Claydon System of direct strip-seeding, which Lord David says has transformed the way he farms and the ecology.

Cost of ownership

"Having looked at what various direct-drill manufacturers were offering it was apparent that all had significant drawbacks. Although initial cost is a factor, what really matters is the ongoing cost of ownership and this is where the Claydon Hybrid drill really scores. It's simple with few wearing parts, strong, very well made and looks like it will last forever."

After spotting a Claydon drill at Cereals 2010, Lord David wanted to speak directly to Jeff Claydon himself to answer his questions on whether or not this system



Much of the land is steeply sloping and the Claydon Hybrid is seen here being used behind Morrision Farms' Fendt 720.

would be his soil saviour. "Jeff was harvesting winter wheat when I visited his farm, so I sat alongside him on the ►

Worm power

Since switching to the Claydon system, Lord David has also seen an increasing number of worm casts on the surface of fields — indicating a healthy population.

"I read somewhere that the average spadeful of soil contained nine earthworms and that made me wonder how many were in the soils at Morrision Farms," he explains. "When I saw an article about the forthcoming 2019 World Worm Week I thought that taking part would be worthwhile."

Three fields were selected for the World Worm Week Farmland Earthworm Survey and five soil pits — each measuring 20cm x 20cm x 20cm — were dug in each field.

"The results were quite remarkable, with each sample containing a minimum of 32 worms, the highest being 55. The exercise laid down a benchmark and is something that we will do regularly in the future.

"There are fields here that have not been ploughed for 20 years and produce phenomenal results, proving the benefits of direct strip seeding and creating the right conditions for earthworms to thrive."

On Farm Opinion



Traditional winter wheat and winter barley has been replaced by wholecrop hybrid rye and triticale to supply an anaerobic digester.

► combine and talked at length. I then spent time with his brother, Frank, who was drilling oilseed rape with a 6m Hybrid.

"At the end of the visit I toured the factory where Claydon products are manufactured, right in the middle of their farm. I could see that they were built to last and even our stony land wouldn't wreck them."

The 4m version Lord David purchased in 2010 was one of the Hybrid models first built and equipped with break-back tines. "Jeff came to set it up and 2019 is our ninth season of using the Claydon, which

has been transformational. It has greatly improved timeliness of establishment, significantly reduced the number of man and tractor hours involved, requires much less fuel, fewer passes over the land and greatly reduces the cost of producing crops."

High rainfall

The high rainfall in the area was also something that had to be taken into consideration, he adds. "Because we use the Claydon drill, water does not lie on the surface even after heavy rain and it is possible to travel on the land at any time of the year — however, that doesn't mean we should.

"Soil is any farmer's key asset and it takes hundreds, if not thousands of years to create an inch of topsoil, so looking after it is a priority."

To minimise soil compaction and help keep fields level the farm also uses a form of controlled traffic farming, but nothing that requires additional investment as it is based around the 4m Claydon drill, 8m rolls and 24m Multidrive sprayer.

A keen conservationist, Lord David has run what is now a LEAF Demonstration Farm for almost 40 years, currently with

just one helper, David Harvey, on the 405ha of arable which form part of his 4050ha estate. "Changing our approach has dramatically reduced erosion of the soil and transformed its condition, productivity and ecology. It has also greatly increased my awareness and knowledge of the soil, its importance and the critical role of earthworms in fertilising, draining and aerating it.

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Farm facts

Morrison Farms, Maybole, Ayrshire

- **Area:** 405ha
- **Crops:** Wholecrop hybrid rye, triticale, spring barley, spring beans, maize and fodder beet
- **Mainline tractor:** Fendt 720
- **Cultivations:** Mounted, 4m Claydon Hybrid which is used to sow directly into stubbles
- **Soil type:** Light to medium sandy loam
- **Staff:** One other member of staff, David Harvey