

ARABLE

When East Yorkshire farmer Sam Middleton changed the farm from dairy to arable, he chose direct drilling as a simple and efficient way to establish crops, giving him more time to focus on other parts of the business. **Farmers Guardian** reports.

Direct drilling saves time and money on ex-dairy land

Transitioning from being dairy farmers to running a mainly arable enterprise was a huge decision for Yorkshire farmer Sam Middleton, who with his wife Lucy, a former vet, farms 130 hectares at Grange Croft Farm, Wawne near Hull.

“We had a herd of 150 Holstein cows and followers, but despite being at the forefront of the industry, thinking creatively and using the latest techniques, such as robotic milking, it was impossible to make money,” he says.

To generate income the couple started a farm shop, Paradise Produce, which Lucy runs, but as if getting that enterprise off the ground was not enough, Sam and Lucy were also making sweeping changes to the farm.

“Previously, we used contractors to do the field work because I was so involved with looking after the cows and the cost of specialist machinery could not be justified. That was expensive, so when the cows went, we moved to an arable system and now do everything ourselves,” says Sam.



Grass made way for cereals and the former cowshed was turned over to finishing bed and breakfast pigs. Now instead of dairy cows, the farm's livestock include 60 Belted Galloway cattle and 180 Jacob and Lleyn sheep.

“As a dairy farm growing 100 acres of wheat and 100 acres of maize we had very few grass-weeds, but they began to creep in as we moved to an arable system and began ploughing for cereals. Not wanting them to become a

problem, I looked at non-inversion options.

“We had tried disc-type direct drills in the past, but crop establishment was not good enough to risk going down that route on a larger scale. It is not easy land to farm, so a much more robust method of direct drilling was needed.

“One of my neighbours used a 3m Mzuri trailed direct drill behind a 300hp tractor, but it is heavy and my 175hp Valtra T174

would not pull it, so I looked for an alternative. After reading about the Claydon Opti-Till system, I visited its designer Jeff Claydon, who took me around his family's arable farm in Suffolk.

“Driving home, I asked what I was doing using a plough, deep cultivator, power harrow and drill to establish crops, when the same or better results could be achieved much more quickly, at lower cost and with significant soil health benefits by direct strip seeding.”

Operating the arable side of the farm on his own and getting crops drilled at the right time had been a real issue, so the time-saving potential was also an attraction.

Seed/fertiliser drill

He bought the Claydon M3F seed/fertiliser drill and 7.5m Straw Harrow and existing cultivation equipment was sold to avoid the temptation to plough. The proceeds from the sale of the machinery, plus a 25 per cent productivity grant from Defra, covered the cost.

The new drill's first season of use was 2019, which turned very wet so, after two passes with the Straw Harrow, Sam drilled straight into stubble and rolled.

“The combination of a relatively light tractor and drill worked well, even on some tightly compacted clay soil which another farmer had asked me to drill,” he says.

“The high daily output allows me to wait until the weather or soil conditions are right instead of being forced to muddle crops in. That avoids one of the major challenges of operating an arable farm single-handed, which is having to organise everything exactly, cultivate a large area before drilling and being exposed to weather risk.

“Now, I can establish our largest 23ha field in one day instead of five, with far less pressure and no worries about being caught out by harsh weather.”

With no significant weed issues, Sam's goal is to start drilling cereals in September and finish by



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early October. The tractor and drill run on land which has not been disturbed to depth, so he can get going sooner after rain and stay working for longer.

The land has become much more supportive and is much better able to carry following machinery without causing ruts, so fields stay smooth, making operations such as spraying and fertiliser application easier, he says.

Cover crops also work well, helping to smother weeds, prevent

leaching, add organic matter to the soil, and provide additional feed for the sheep which graze them over winter.

Barley

“In spring barley, instead of the standard leading tines we fit front discs to cut through the green material and allow the following A-shares to drill without blocking. DAP is applied down the spout when drilling spring barley and last year no fertiliser was used

on wheat which followed peas or was drilled on fields where manure had been applied.”

Sam has also picked up 400ha of contract drilling, which provides a useful boost to the farm’s income.

Fuel has also been one of the biggest areas for saving with 60 per cent less used each season, while tractor hours have dropped by more than 50 per cent.

Average yields are the same as with conventional establishment,

around 8.65-10 tonnes/ha for wheat and 7.5t/ha for barley, but costs are much lower and with no need to use compound fertilisers the margins are vastly improved.

“Another major benefit of direct strip seeding is the massive improvement in soil quality.

“Water infiltration is much improved, the lack of standing water is very noticeable and, although all straw is baled for our livestock, levels of organic matter are significantly higher.

Soil

“This is boosted by manure from the livestock and digestate from an anaerobic digestion plant in Teesside, which is brought to the farm by Whites Recycling, who spread it on winter wheat, winter barley and grass in the spring at no cost to us.

“After 70 years of being trodden down by dairy cows, ploughed and compacted by maize harvesting machinery our soils were very tight but they have improved dramatically.

“Every time we use the drill its leading tines remove compaction, allowing water to drain through the soil.”