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THE FARM MACHINERY MAGAZINE

Strip-till drilling:

Keep to the strip to reduce drilling costs



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Establishing oilseed rape with a subsoiler and broadcaster seeder has encouraged Toby Saunders to adopt a similar one-pass approach to the planting of cereal crops. At the time of making the change it was a major leap of faith from his proven plough-then-cultivate-before-drilling strategy, but the move appears to have worked.

"We tend to concentrate on variable costs, but we need to look at our establishment costs, too," says Mr Saunders. "For instance, in the past with oilseed rape we used to

In a standard 12-hour day, Toby Saunders's 4.8m Claydon Hybrid drill will regularly cover in excess of 25ha, spread across several small fields.

work the land down to an onion bed, but, after switching to a subsoiler system, we went on to achieve as good if not better results. We wanted to apply the same thinking to our cereal crops."

For the 2008 autumn campaign, the subsoiler-based OSR establishment system employed by CR Saunders & Partners at Teeton, Northamptonshire, relied upon a Cousins V-Form and a Stocks broadcasting unit. In contrast, the wheat establishment policy was much more varied: some land was tackled with a couple of six-furrow Kverneland vari-width ploughs, followed by a Simba Cultipress and knocked down

with an Opico Disc Roller or power harrows; the remainder was worked with a mounted Sumo Trio. All the wheat ground was drilled with a 4.0m Väderstad Rapid.

Generally the farm works on a 50:50 split of oilseed rape and winter wheat. Of the 810ha of arable land farmed by the Saunders, 75ha is owned and the rest is rented or operated under contract farming agreements, and the bulk of the land is in one block. Main exception to the wheat/rape rotation rule is one area of the farm where there's an issue with white charlock, which due to its close relationship with oilseed rape means a wheat/oat/wheat rotation is preferred. There's also a small area of second wheat, although the size of this block could increase, as the 2011 harvest showed its yield is capable of matching that of first wheat crops, albeit with a modest increase in the requirement for N fertiliser.

Autumn 2009 saw the arrival of a rigid 4.0m Claydon SR drill, which was duly put to work behind a John Deere 7530 tractor for establishing wheat and oats. For those unfamiliar with Claydon's direct drilling principle, the



machine employs leading chisel tines, positioned 300mm apart across two rows, to remove compaction and create a tilth. Following behind these ripper tines are twin-outlet 175mm wide band-spreading boots, attached to A-shares. Mr Saunders usually has the front tines working 100mm deep in cereals and 150mm in rape.

Daily outputs of 25ha were easily achievable in typical 12-hour days with the 4.0m SR drill, but its rigid frame meant road transport could be an issue, especially if the drilling rig had to return to the yard to fill up. There was also the real worry of machinery thefts, which have escalated in the area, to the extent that leaving a tractor in a field overnight is a policy best avoided.

After one season the SR model was part-exchanged for a 4.8m hydraulic folding Claydon Hybrid (see our

conditions last year meant volunteers would have been slow to germinate anyway. There is, of course, the issue of phosphate and potash take-off when removing the straw, but Mr Saunders adds: "I still prefer to bale up most of the straw, because the ground dries out quicker after rain and it also reduces the



Having established OSR off the back of a subsoiler, Northants farmer Toby Saunders believed he could apply the same min-till principles to other crops.



Drill working width is 4.8m with 30cm row spacing. A 12cm strip between each tine is left untouched.

December 2009 issue for a driving impression). Though 0.8m wider, this drill weighs 750kg less so it can still be handled by the same 205hp 7530 Deere. The weight difference is due to the Hybrid having a simpler frame, and there's less rear overhang.

Today, main preparation for the drill is a pass with a 7.5m wide straw harrow in rape and oat stubble. "This spreads out trash and encourages it to start breaking down, gets any volunteer blackgrass growing and helps dry the soil with the bonus of killing slugs," says Mr Saunders. "We then apply glyphosate a minimum of 24hrs before drilling."

Due to local demand all wheat straw is baled by a contractor and collected with a self-loading chaser on wide tyres to minimise any potential compaction problems. After removing the straw a pass with the straw harrow for spreading trash is generally not needed, and, on top of that, the dry ground

A tine tills the strip of soil ahead of the duck foot-style coulter, which then places the seed either side of the drainage channel created by the tine.



Paddles at the rear level the soil between the coulter rows. These paddles can be swapped for a traditional seed harrow to suit conditions.

FARM FACTS

C R Saunders and Partners

Staff

Two full-time

Area

810ha under arable crops

Soil type

Heavy clay to light brash ironstone

Cropping

For 2011/2012, 410ha winter wheat, 400ha OSR

Tractors/handlers

2008 John Deere 6930 Premium (180hp), 2007 and 2011 7530 Premium (205hp), Cat TH407 telehandler

Arable equipment

2011 Claas Lexion 760 combine with 9m header, Bateman RB25 with 3,000-litre tank and 24m boom, Claydon Hybrid 4.8m drill, Claydon straw harrow 7.5m, 8.2m Cousins contour 600mm rolls, McConnel Shaker-aerator and OSR seeder 3.0m, Opico Disc Roller 5.0m, power harrows 4.0m x 2, Kverneland six-furrow plough x 2



The rolls quickly follow behind the drill and apply slug pellets at the same time.

fleet and rationalise numbers from five to three. The previous fleet comprised an ageing mixed bag of Massey Ferguson, McCormick and Case IH units, ranging from 145hp to 260hp, whereas today the fleet has gone all green, comprising a John Deere 6930 and

slug pressure in the following crop. However, I plan to chop more straw in the future where the soil organic matter is low – to see if we can improve these levels.”

With the soils now better structured, this season’s winter oilseed rape has also been established with the Claydon. “We still have the subsoiler and ploughs, so, if yields do show signs of being affected by compaction, we can do something about it,” explains Mr Saunders. “We have used the drill on moved soil, and it does work. But the Claydon does a better job in untouched ground, which we also find dries a lot quicker after rain and allows us to get back on the land sooner.” The straw harrow had been called on in previous years to give the seed a better covering of soil after drilling in wet conditions. However, Mr Saunders now has the option of swapping the rear paddle tines on the drill for a more traditional seed harrow, thus negating the need for an extra pass. “By direct drilling both the oilseed rape and wheat, we’ve managed to save 30,000 litres of diesel over 810ha,” points out Mr Saunders. “And I have a feeling we’ve probably saved a further £20,000 in repairs, wearing metal and other running costs, too, without

The Kuhn Axis 30.1 spreader applies all of the farm’s fertiliser, including variable-rate phosphate and potash.



When it comes to grain storage, C R Saunders and Partners has a number of grain stores that are emptied over the winter months.

suffering any loss in yield or an increase in weed pressure.” Fewer field passes and better returns have enabled Mr Saunders to update his tractor

a couple of 7530s; the oldest of these Deere models is the 2007 7530, which has still only managed to clock up 3,500 hours. The plan over the coming years is to replace at least one key machine each year. For the 2011 harvest, this capital investment policy prompted an upgrade for the farm’s combine, up from a Claas Lexion 570+ to a new 760 with a little extra capacity to improve overall efficiency.

“We talked about having tracks on the combine to leave the soil better structured, but the cost is another £20,000. We have a mixture of land, so can switch on to the lighter ground when the conditions deteriorate,” says Mr Saunders. “Where ground permits we unload on the move, and we try to stick to the tramlines with the trailers. A lot of our land is in blocks, too, so we don’t have to do much roadwork, which would clearly have been another argument for investing in tracks on the combine.”

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Oat and oilseed rape stubbles receive a pass with the straw harrow – to help scatter trash and encourage volunteer growth.

The farm's 14t Richard Western and Merrick Loggin trailers are all shod on 445 R22.5 rubber to minimise compaction. And as the new direct drilling regime requires far less labour and machinery inputs in the summer/autumn, all of the farm's three tractors are available for carting grain – to keep the Lexion's daily output up at around 40ha. Next item on the Saunders machinery shopping list will be a new self-propelled sprayer.



Chemical applications are left to the 2004 Bateman RB25 self-propelled, which is next on the Saunders machinery update list.

The current Bateman RB25 has completed nearly nine seasons, although it's only used for chemical applications as all fertiliser is spread with a Kuhn Axis 30.1 broadcaster mounted on the 6930.

At the moment it looks as though another Bateman could be on its way to Northamptonshire, though other makes haven't been ruled out. Boom widths will remain at 24m, because Mr Saunders feels this suits his field shapes and sizes as well as fitting in well with the fertiliser spreader, but tank capacity might be increased to boost outputs. A

trailed sprayer is not really an option for Mr Saunders, as he feels increased compaction would be an issue and he doesn't want to tie up one of his three tractors for such a protracted time.

Summary: Having consumed 82,200 litres of fuel in 2008/09 versus 52,500 litres in 2010/11, it's easy to see why Mr Saunders has no big regrets about switching to direct drilling. There has been no yield penalty; moreover, the dry conditions experienced in Northants last autumn were ideally suited to this reduced soil-disturbance approach, helping to retain the small amount of moisture available and allowing seeds to germinate more quickly.

How can Mr Saunders trim his costs even further? Well, two key members of full-time staff will retire over the next few years, and, while there are other jobs to be done, the reduced arable workload should eventually allow a move to one full-time and one self-employed worker.

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