

Spring crops suit the direct-drill system

Direct strip-till drilling has quickly established itself as a proven method of combinable crop establishment across most of the UK's key arable areas. A burgeoning number of farmers have adopted the technique of sowing winter cereals, oilseed rape and other combinables straight into bands of tilled soil between strips of unmoved land.

Most appear to have a good grasp of how to manage the technique's challenges, establishing blackgrass flushes, controlling slug populations, and distributing straw and chaff evenly ahead of winter cropping. But some rejigging of priorities and focus is needed for direct spring-crop establishment.

That's the view of Spencer Claydon, of the Suffolk-based strip-till drill maker. Provided a few guidelines and ground rules are remembered, he suggests, there's no reason why establishing spring crops using a direct sowing system shouldn't bring about the same benefits that it does with winter-sown ones.

"The key factor is that everything is reversed," he points out. "While with autumn sowing the aim is to drill early, before the weather turns wetter and soils turn colder, in the spring the opposite is true, with soil temperatures increasing as the season progresses.

"And while, in autumn, one benefit of direct drilling is that wet soil isn't being turned over and travelled on, in spring, with the weather turning warmer and drier, not moving soil excessively means moisture is conserved. The seed is put into moist, unexposed soil and so is less likely to dry out, helping it to chit and shoots to develop as soon as possible."

Depending on soil type, water-holding capacity of a strip-tilled field can be up to ten times better than a fully cultivated one, he suggests.

"At the same time, though, soil movement by the tines which create the coulters path is just enough to get some air into the soil pores where the seedling is germinating, helping to increase soil temperature."

Further benefits of a sowing a direct-drilled crop in spring include reduced slug pressure and improved straw/chaff breakdown. There's also the increased nutrient and soil organic matter availability brought about by the



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Blackgrass problems and last season's wet autumn mean more farmers have turned recently to spring cropping. But for those who've adopted direct drilling, how easily do spring crops fit the system?

By Martin Rickatson

longer period of earthworm activity over the winter, believes Spencer Claydon.

"And, of course, there's an extended period available for blackgrass control. Spring cropping is a sensible part of a control plan, and in a wet season is preferable to ploughing to try to force in a winter crop."

It's the breathing space for addressing drainage issues that makes Tim Matthews a big fan of spring cropping. With his father Graham, he farms 400ha of heavy Essex clay from Upshire, near Epping. Having recently ▶



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For spring cropping, Noel Furlong applies a dose of glyphosate, harrows, applies a second dose, then drills.



► signed as a LEAF (Linking Environment and Farming) demonstration farmer, he's keen to promote the twin environmental benefits of direct drilling and spring cropping, which he feels sit alongside the commercial benefits for the business.

"We retooled our machinery fleet ten years ago, when we ceased dairying to focus on contracting and arable farming," he explains. "That meant moving to a min-till system based around a Väderstad TopDown cultivator, Rexus Twin press and Rapid drill, plus a Spaldings Flatlift for subsoiling and OSR establishment.

"But we later began to consider whether we could further reduce our passes by direct drilling. It struck me that we were spending lots on cultivations, often primarily to create good conditions in the first instance for volunteers, rather than the crops themselves. But we could avoid disturbing the weed seeds altogether.

"What we were doing — loosening at depth and then seeding — was essentially similar to the Claydon system, albeit in two stages. So last spring, we sold the drill, cultivator and press and purchased a 6m Hybrid."

The drill is followed by a set of rolls, and preceded by a 9m Weaving Kelly shallow disc cultivator, which Tim Matthews uses to do much the same job as a straw harrow.

"It's more expensive, but it doesn't just destroy slugs and eggs and redistribute straw. In damper soils in particular its 'strings' of discs leave 10mm of microtilth, which fall around the seed at drilling to create near enough 100% seed-to-soil contact. We make as many passes as possible."

The drill arrived just as the business was looking at sowing spring crops into land that had missed its autumn drilling slot due to the wet weather. Tim Matthews is adamant that an element of spring cropping is central to the success of direct drilling, particularly on a heavy-land farm.

"A lot of our contracting is based around summer and autumn hedge and verge cutting, so we need to spread our workload. Then there's the reduced weed seed-bank from not disturbing the soil, the opportunity for greater use of cultural weed control, and the ability to use different herbicide chemistry. For us, another advantage is the chance to address field drainage problems over winter, as well as the natural 'subsoiling' that takes place as dry soils become wet then dry out again. What's more, traditional spring crop markets, such as the Egyptian export trade for beans for human consumption, remain strong.

"Last year we drilled spring beans, spring barley and spring linseed with the Claydon. The Propino barley

yielded well, and all made malting, while the Clipper spring beans were fantastic. With the front tines in 6in deep and the coulters at 2in, they grew away very quickly."

This season's spring cropping comprises 60ha spring beans, 240ha spring wheat and 120ha spring OSR, with spring barley dropped due to poorer prices and linseed off the list because of its late harvest. But spring crops remain very much part of the plan for the foreseeable future.

Work on the land starts at the same time as that for winter crops — as soon as possible after the previous crop's removal, says Tim Matthews.

Multiple passes

"We run the harrow behind the combine even for spring cropping, making as many passes as possible over winter. That usually gives us a 90% weed kill ahead of pre-drilling glyphosate. Spring application needs care, though, as glyphosate takes longer to work in early spring's lower temperatures — where it works in a week in summer, in spring it can take 3-4 weeks. We then drill as soon as a good kill has been achieved and soil temperatures are increasing, raising seed rates as time goes on and the soil surface dries.

"The original thinking with both direct drilling and spring cropping was based partly on saving money. But we're reinvesting some of that into land improvement, particularly drainage. Last year we purchased a second-hand trencher and spent £20,000 cleaning drains, clearing ditches and installing new drains, and we'll do the same this year. Improving drainage will also help control blackgrass, which likes wetter soils.

"Conversely, this soil can get too dry very quickly, so there are few days to hit it right. Improving the drainage will help increase the number of workable days available to us."

While spring cropping might be the exception in England, spring combinables have a strong following among Scottish and Irish growers. A number also have experience of direct drilling to establish barley, oats and beans, for example.

One such grower is Noel Furlong, who farms 200ha and carries out contract work from Port Laoise, Co Laois, in Ireland. He's been direct drilling for the past two years with a 3m Claydon Hybrid, and last year, 90% of his own land was down to spring crops. While he's pulled that area back a bit this year, the proportion is still well above half.

"We're on a medium-to-sandy land that's too light for decent wheat yields, so our rotation is three barleys — winter, spring, winter — and an OSR crop or sometimes

beans," he explains. "Spring crops break up the workload, offer wider weed control opportunities, and give a winter break to heavy ground that can flood.

"We can still suffer from dry weather after spring crops germinate, but can produce some good 8t/ha spring barley using direct drilling to conserve moisture. We drill from the second week of March, when soils should have reached 8-10°C."

Last season saw a lot of spring OSR also grown as the autumn weather changed plans, and Noel Furlong says he was very pleased with results of 3.7t/ha.

"With little spraying required, margins are good, and the crop lends itself well to direct drilling. But harvest is later, of course — around Sept for us."

Irish rules dictate that fields must have green cover through to 1 Dec. After this date, he applies 2.5 l/ha glyphosate, uses a straw harrow to stimulate the soil surface, applies a second small glyphosate dose of 0.5 l/ha, and then drills.

"In barley, annual meadowgrass is our main grassweed concern, plus a certain amount of brome. But cultural and chemical weed control both help here. The first spray after establishment is 2.5-3.0 l/ha isoproturon (still permitted in Ireland) plus 0.2-0.25 l/ha diflufenican in Oct or Nov."

Donald Maxwell, who farms 280ha around St Boswells in the Scottish Borders, also operates as a contractor, drilling a further 120ha each season with a 4m Claydon Hybrid. Despite some high, heavy ground, spring barley and spring beans feature prominently in his rotation, the latter for the farm's suckler cow rations. This year, for the first time, he's using winter cover crops on some of his intended spring crop ground.

"In late Aug we sowed some spring fields with a home-saved mix of winter oats and grass seed, drilling straight into the previous stubble," he explains.

"This'll be grazed off by our sheep in Jan or Feb, the aftermath then sprayed off and drilled with spring barley or spring beans."

The benefit for the farm is three-fold, he explains, with the crop taking up excess winter soil moisture, the sheep benefiting from extra grazing, and the action of their feet creating some surface tilth.

"The land will also warm up faster and break up better in the spring than it would if simply left since the previous harvest."

In another first for this season, Donald Maxwell is also experimenting with using his Claydon 'empty' to cultivate land intended to lie fallow for the winter.

"This should let the frost in to create a little surface tilth and aid rainfall drainage." ■

Over wintered stubble offers numerous opportunities for harrowing to destroy weeds, surface weed seeds and slugs.

