Springfield Farms

Farm Diary 2016/17

Welcome to the first edition of the Springfield Farm Diary.

It is with great pleasure that I can share with you the farm's day-to-day life over the past year.

Now in its seventh year, plough free, Springfield Farm has been the backdrop to a progressive and exciting strip tillage conversion. Whilst on a conventional system prior to the switch, the fields had been suffering from compaction, soil erosion and blackgrass infestation, exacerbated by the farm's heavy Evesham Lias Clay.
I soon realised that ploughing wasn't a sustainable way forward as it was having a detrimental effect on profitability and soil condition.

Realising the importance of looking after our 'factory floor',
I switched to a one pass system in the quest to improve the soil structure, whilst raising productivity and increasing profits at the same time.

A large fleet of cultivation machinery has been replaced by the Mzuri Pro-Til 3T one pass drill, the Rezult straw rake and a set of rolls, resulting in huge capital savings and a drop in fuel and labour costs.

Yields have dramatically increased over the years, now consistently reaching 12t/ha for wheat and 5t/ha for OSR. Not only that, we have improved soil organic matter and have seen a healthier, more productive soil structure evolve.

Over the past seven years, we have been proud to take part in trialling some of Mzuri's leading innovations and conduct crop trials of our own. Keen to share my journey and experience with others, the following articles represent the first print edition of Springfield Farm Diary for the 2016/2017 season from drilling through to harvest.

I hope you enjoy reading the diary and find our striptill experiments and insights of interest.

Martin Lole
Owner, Springfield Farms

Drilling Cover Crops With New Low Disturbance Coulter

August 10th 2016

The wheat has been combined and just a few days later, we're on the same field again. This time – it's with the Pro-Til 3T 'direct till drill', establishing cover crops straight into untouched straw stubble. It's a really exciting time as we're trialling our newly developed low disturbance coulters to sow radish mix.

We currently have a four-year rotation on the farm which consists of oilseed rape, winter wheat, winter cover crop such as radish followed by spring cropping, and another winter wheat. We love using radish mixes – they're brilliant for capturing nitrogen and the large tap roots do wonders for improving soil structure. As well as providing good ground cover, we found the crop also helps to keep the weeds at bay and is easily killed by the frost.

The coulters being trialled this week have a disc in front to reduce soil shift to the minimum and can seed in single or dual bands. Compatible with all Pro-Til models, they can be run as a direct drill or as a strip till drill when used in conjunction with the narrow-winged front breaker legs. The addition of the direct drilling function marks a huge advance for us and our customers, so much so that we think it will change the world of reduced tillage. It gives users a whole new level of flexibility which means the same drill can now be used in all soil types and conditions – the strip till option with the low disturbance coulters gives sufficient tilth for good germination with minimal soil disturbance, and, when the soil can support it, the same drill can be used for direct drilling. That's great news for farmers who are looking to move to low disturbance drilling as the end goal, or contractors who are after more flexibility and a drill that does it all.

We were left extremely pleased with the drilling results. Other offsite trials are progress to ensure the coulters perform equally well in other soil types following which the option will be rolled out commercially. Watch this space!

The new low disturbance coulters on the Pro-Til 3T Select working a dream

Drilling radish straight into stubble

Inter-Row Drilling With RTK

August 14, 2016

Another week, another trial! This time, we're inter-row drilling radish into wheat stubble. Rather than drilling at a slight angle to the tramlines, we are going straight down the line in between the rows of the harvested crop.

This is called taking the idea of minimal disturbance with strip tilling and pushing it to the extreme. Not only are we using low disturbance coulters and a narrow wing point on the front leg to reduce soil shift, we're leaving the straw totally undisturbed. There are huge benefits to be had from this as the standing stubble shields the crop from adverse weather conditions including drying winds or hot sun exposure. Rows of long, sharp straws also protect from pigeon attacks when the crop is emerging.

What's more, we think that the long straw may accelerate plant growth at the early stages as the crop is being forced up to reach better levels of light.

Today we were drilling with the Pro-Til 3T Select at 6kg/ha and were also placing a band of fertiliser below the seed to give it the best possible start. Working with RTK, we've been ably supported by AS Communications to get the system set up and running. It's been another successful day and we can't wait to see what the radish comes up like. We'll keep you posted!

Inter-row drilling with RTK

Up and away, the long straw protects the Radish crop in its early stages

Thumbs Up To The Soil Doctor

August 18, 2016

Today one of our test fields has had the Rehab treatment – the soil doctor with the best "bedseed manner" around. Gentle on the topsoil but mean to the pan, the Rehab is our low disturbance subsoiler which has proved invaluable on our Trial Farm, particularly in the first years of switching to strip tillage. The farm had been previously subjected to years of repetitive ploughing and so we inherited the headache of pretty bad compaction. Thanks to Rehab, it's a thing of the past.

The farm has seen massive improvements to soil condition because of strip tilling so we don't get to roll the Rehab out much these days. Once every four years is enough but it still has a place in our rotation on our heavy Evesham Lias Clay. The rule of thumb with subsoiling is not to disturb the nature too much and allow the soil plenty of time to settle, both of which the Rehab does brilliantly (even if we say so ourselves!). This is why we only subsoil after rape and never after cereals. Experience taught us that even minimal disturbance can be too much: drilling wheat straight after subsoiling could wreck the seedbed and produce a cloddy, uneven finish. Needless to say, that's bad news if you're hoping for even germination.

Our farm technique is to use the Rehab within the first two weeks in August, after the rape harvest. This gives the soil a breathing window of six to eight weeks to weather and rehydrate, taking on moisture, before we're out with the drill again.

This year, it's done a great job again. The soil profile has been lifted without over-cultivating the land or burying the topsoil. Below ground level, the fissures will help with aeration and drainage. At the same time, we've left the organic matter and residue on the surface which will enrich the top layer even more and help to lock in moisture. Being low disturbance, the Rehab doesn't bring any big clods up to the surface meaning there's no need for a full width packer. We only reconsolidated the areas where the tines have been with a set of following wheels. The Rehab left the ground fresh and loose, bringing it back to its former glory.

Arguably, the machine could well be retired on our farm as strip tillage is really working wonders for the soil structure. We do, however, use the land to run a number of trials including zero tillage and feel that heavier, tighter soils do benefit from occasional subsoil movement. The Rehab is also ideal for getting rid of compaction when following maximum cultivation systems or loosening the subsoil after repetitive direct drilling.

Rehab lifts the soil profile without bringing up clods

Drilling Down To Perfect Rape Establishment

August 24, 2016

It'd be fair to say we love everything to do with drilling. Here we're putting in rape, but most importantly, we're drilling down to the formula of perfect rape establishment. We already offer a combination of a narrow coulter point and a narrower profile reconsolidating wheel which has been specifically designed for drilling rape. It gives brilliant seeding depth control which results in impressively even germination – just what you need with rape. We do, however, like to push the envelope and continue to run different experiments so we can share our findings on different planting conditions and configurations with you.

A lot of what we do in the field is food for new ideas and developments so hopefully we'll be forgiven for keeping some of it under wraps, for now at least. We can reveal though that this time the work involved a range of exciting rape establishment experiments with different configurations of coulters and band widths. The trials were run in very dry weather conditions with rain forecasted next week – watch this space...

One of the six different configurations is being put through its paces

Spraying Off Linseed

August 31, 2016

It's a lovely, still evening tonight. The linseed crop is looking good and so we're out spraying it off while there's no wind – and we're going fast! The herbicide being applied is Reglone at the end of the day for best results . Linseed is just about the only crop we desiccate on our farm; believing that Nature's got it down to a tee, we like to let our crops to dry out naturally where possible, to allow maximum goodness to be put into the seed.

And it has to be said, we never had a bad linseed harvest yet. Although the plant tends to favour lighter soils than ours, it also loves moisture. Selective tillage and surface residue protect the ground from drying out which has undoubtedly contributed to it looking as good as this.

It has cost us next to nothing to establish too. Seeding into overwintered cover crop, typically radish, we use our Rezult straw rake with a Stocks seeder to get the job done. The cutting front disc action, followed by five banks of heavy-duty tines on the harrow, generate a lovely tilth to get the seed off to the best start. It also pays to delay seeding till later in the spring. We wait till well into April to make sure the seed goes into moist, warm ground. The crop soon catches up and the technique has never failed us yet. We have high hopes for this year's harvest again.

Couldn't be more pleased with this year's linseed

There's no wind and I'm moving fast!

We've Got It Covered

September 7, 2016

We're pleased to report that the radish drilled in mid-August as part of our inter-row drilling experiment has come up a treat. It's done what it says on the tin and in just over three weeks, this cover crop got the ground covered.

We had left last year's straw totally untouched and drilled into fresh, undisturbed soil. The field has not had any post-drilling treatment either – it has simply been drilled and left to its own devices. We do believe that the extra-long stubble (we left it at 250-300mm) has sheltered the ground from drying out which helped to bring the radish on. A band placement of fertiliser has given the roots a quick nutrient boost too.

Cover cropping has an important place in our rotation but we've learned early on that moisture is the absolute must to guarantee reliable germination. This is why we preach that straw must come first in any min-till regime: reduced cultivation does wonders for the soil but it is the surface residue that can take it to a whole new level. Not only does straw keep an army of earthworms well fed and provide home to a multitude of other organisms, it clothes the ground, keeping it moist and protecting it from the elements. The more straw, the better!

Of course, the proof is in the pudding – and it's looking good! We're very pleased with the evenness of our radish germination; even the headlands are looking equally impressive despite the additional traffic of the combine and the drill.

In fact, this is the third year in a row that we had consistent, even establishment. That's definitely something to write home about (or to note in the Farm Diary at least!).

Setting a new trend of inter-row drilling

The headlands are looking just as good

Direct Drilling Oilseed Rape

September 12, 2016

It's the 12th of August which is a little late for drilling rape but I'm really pleased with how well it's gone in. I was encouraged by last year's success when we did some delayed drilling trials to see how it paired up with early establishment. The trial plot germinated very well and soon caught up, which I partly put down to getting the soil conditions right: rape, more than any other crop, loves a warm, moist seedbed. This year, we ticked both boxes again. The soil temperature was 18.5° C, and it'd be fair to say it was plentifully moist too (if not excessively so!), with more than a fair share of rain that we'd had in the upcoming days.

Although most of the rape on our farm went in early, it was a conscious decision to delay the seeding by around two weeks in this particular field due to a combination factors. The first set back was due to a combine problem. When harvesting wheat, I noticed I was losing a substantial amount of the grain through a hole in the tank, leaving a narrow band on the ground – too much to be ignored. Left to their own devices, the volunteers would have put too much strain on the germinating rape, competing for valuable light and moisture. Not happy to pay the penalty, I decided to allow the wheat to come up so I could spray it off with glyphosate before putting the rape in. To add to the delay, the farm Pro-Til drill got "borrowed" by the sales team as the Mzuri demonstrators were fully booked. "A nice problem to have," I said to myself, whilst making a mental note to discuss another demo machine with the team to help cope with the high demand next season. Prepared is forewarned!

Having the extra time got me thinking about yet another trial. I've already inter-row drilled some OSR with the new low disturbance coulters this season which has come up brilliantly. I wanted to take it a step further, running the drill without the front leading discs or breaker legs. As a result, we've kitted the farm's Pro-Til 3T Select with the new low disturbance coulters and narrow wheels and ran it as a direct drill with just the seeding arms in operation – and with smashing results too!

The variety drilled was Campus at 3.8kg/ha, seeded straight into chopped straw. It must be said, the new coulters have done very well in the wet drilling conditions, delivering brilliant seeding depth accuracy and generating a narrow band of tilth in the heavy clay where a disc drill might have smeared it. This is some seriously exciting news for the future of the machine, making it even more flexible than before. Not only can the Pro-Til be used as a strip seeder to ease into reduced tillage after conventional cultivations, the same piece of equipment will also serve equally well as a direct drill once the soil condition has been restored, making the final transition. The low disturbance coulters mean more speed, less power requirement and, most importantly, even less soil disturbance as it skates through the soil. Now, we just need to teach the drill to sing!

Pro-Til Select is now capable of direct drilling, as well as strip tilling.

Drilling rape into wheat stubble

Clean Cover Crop Keeps Black-Grass At Bay

September 15, 2016

Clean cover crop helps keep blackgrass at bay.

It's Thursday afternoon and I'm spraying cover crops with Fusilade, a selective grassweed killer, at 1litre/ha. The herbicide is brilliant for cleaning up volunteer cereals and suppressing rye-grass, and it will help to keep our rotation weed-free and tidy. One could say that at the cost of £10/acre, this is a little extravagant, but we have a zero-tolerance policy towards grassweeds on our farm; besides, I know it is a luxury that will pay dividends.

Our establishment cost was next to nothing, too: we seeded radish at just 4-5kg/ha when most people use 20kg/ha, making noteworthy savings on the seed alone. One single pass directly behind the combine, no previous cultivation, no rolling, no nothing. This is our first treatment and by this point, we have already saved ourselves a nice penny.

With my cover crop looking as promising as it does, I want to be particularly tough on grassweeds this year. This is our solar panel for harvesting sunlight and the cleaner and healthier it is, the more energy it will be able to absorb. We've worked really hard to rid our fields of persistent weeds such as black-grass over the years – a combination of good housekeeping and a minimum four-year rotation – and I've taken the view that we should not take the foot off the pedal now. "Prevention is the best cure", a bit of old wisdom which holds true here.

In fact, I'm surprised cover cropping has taken so long to take off. Not only is it brilliant for absorbing the energy from the sun, it gives us another opportunity to hit the weeds hard – not once, but twice. Come February, it will be sprayed off with glyphosate again to present a nice stale seedbed for the linseed to be drilled into in April.

Straw Rake Gets The Soils Ready For Drilling

September 16, 2016

I've rolled out our Rezult straw rake today – a lean, mean terminator machine that spells bad news for slugs, volunteers and blackgrass.

Yet this low disturbance tilth generator is really gentle on the soil. It produces plenty of soil throw and it may look like the ground has been quite heavily cultivated, but we still have no more than 10mm of tilth which is perfect for getting those grassweeds chitted. It also gives us another opportunity to get back at the slugs after rape – the rake disturbs their habitat bringing the eggs up to the surface where the UV light finishes the job off.

I'm using a small tractor with floatation tyres. A true lady with good field manners, this big footed old girl treats the soil with the utmost respect. With a footprint of nearly one square metre, her "slippers" are built for comfort as she treads lightly across the field, leaving no imprint on the ground whatsoever. She may not look as elegant as Mrs Lole in her stilettos, but she's looked after my soils well and is equally close to my heart... (And, as I write this, I dearly hope Mrs Lole doesn't read my diary or I'd have some explaining to do!)

On a serious note, we're being really meticulous about our weed control here. After combining the crop, we've gone over the rape stubble with the Rehab low disturbance subsoiler and left it for a few weeks to green up. The field then had the glyphosate treatment which did a cracking job of killing the germinated volunteers and grass weed. Going over the field with the Rezult again will flush out the remaining weeds if any have managed to skip the net during the first treatment. It may be as little as 10% of dormant seed but keeping on top of it makes business sense as the penalties to the yields could be quite severe. Why take unnecessary risks? Another pass of non-selective herbicide if needed et voila, we'll have a clean, uniform ground to drill into.

Working in well-structured soil, the Rezult has given us ample tilth which is due to the fact that the ground is in such good shape thanks to strip tilling. Some of you may prefer less tilth which is easily done by simply shallowing the disks if desired. It must be noted that our straw rake is not just for strip tillers; it is a great way to prepare the field for drilling, whatever the drilling system.

The Rezult is working up a nice, shallow tilth.

Linseed – The Perfect Break Crop For Weed Control

September 18, 2016

As trying as the crop may be, we made a conscious decision to incorporate linseed as a break crop in our rotation due to the great chemistry available for broadleaf and grassweed control. Desiccating just before harvesting also helps to top up the effect, and we see linseed as a key tool for keeping on top of weeds. It's a profitable crop, too. Establishment is quick and easy, and most importantly – cheap! We seed it with the Rezult straw rake with a Stocks attachment, roll it and pretty much leave it to grow throughout the summer.

So far, so good, but as many of you know, there is also a dark side to linseed which has a habit of showing it's face during harvesting! Deservedly or not, it has earned itself a reputation of a crop that's "a pig to combine", and we had a full reminder of this last week.

With moisture levels being right, we rolled our good old faithful Case IH Axaflow out on Sunday. It'd be fair to say, the old girl has been put through the ultimate test, and so has my patience! She was reluctant to go and got herself into a bit of a tangle. I was hoping that taking the fingers out of the auger would help. I was wrong: after hours of persevering, the linseed was still wrapping around the screw conveyor. It was time to get really creative. A reel of Mzuri's packing tape later and holes covered, off we went again. At this point, my daughter Phoebe took over and she was doing really well until... a knife snapped. We got it repaired and Phoebe had a smile on her face again but her excitement was short-lived as a second knife followed suit!

My frustration was rising by the minute, and so was my blood pressure. This is when Mrs Lole decided enough was enough and called in the pros. Our local contractor Colin couldn't come quick enough in his giant Claas Lexon. Thankfully, he was on tracks; worrying about compaction would have been enough to finish me off!

And he flew. Where it took me all day to do a few acres and it felt like I was going nowhere, the big girl swallowed up the whole eight in less than an hour – even in the dark. Unfortunately, we were halted by the rain with forty acres to go but at least we made a start.

On the upside, the harvest is looking very promising and now that I have recovered from all the drama, I'd go as far as to say that the benefits of growing linseed outweigh the pain (that's if you live to see them!). We seem to have cracked the golden formula for combining linseed too – that's "get the contractors in!".

Linseed. Great for weed control, even better for stretching patience!

Phoebe taking the test of patience.

Strip Tillage Secures Impressive Linseed Yields

September 24, 2016

Finally, the linseed harvest is done and dusted. With a few unforeseen stoppages, it didn't quite all go to plan to start with, but we were ably aided by a neighbouring contractor who came to the rescue and raced us past the finishing post in no time. It was great to watch his giant Axion combine make light work of the fields – a proper Claas act!

I had high hopes for this year's crop and it did not disappoint. With the low cost of establishment and this year's yields averaging an impressive 3.25t/ha, there was plenty of margin left too. Keen to get the most out of my linseed, I decided to go the full hog from the start. The fields were raked twice and rolled; they also had N P and K fertiliser and three lots of spray applications, including Reglone for desiccation. It seems that my strategy has more than paid off. My average yields have come in at almost double to those quoted in the 47th edition of Mr Nix's Farm Management Pocketbook (3.25t/ha vs 1.75t/ha) which gives me a gross margin of £851/ha vs the £367/ha Nix's average after fixed costs. But it's the bottom line that counts and, with my net margin at £538/ha, it's a fantastic return for a humble break crop such as linseed. Needless to say, I'm very pleased!

We drilled our linseed with the Rezult straw rake fitted with a Stocks seeder into well-structured, previously strip-tilled soil with plenty of organic matter, which gave the seed the perfect start. It goes to prove that in the right conditions, linseed can be a highly profitable crop to grow. Not only that, it's another great tool in our arsenal for grass weed control. With the low cost establishment and high return, less really is more in the case of linseed.

Burning linseed stubble

Final cuts of the last field

Linseed Cost Analysis 2016		
Yield 2016 (t/ha)	3.25	
Output (£/ha)		£1,138

Variable Cost*	£/ha	
Seed	£96	
Fertiliser	£115	
Sprays	£76	
Total Variable Cost	**£287**	

Gross Margin		£851

Fixed Costs	£/ha	
Establishment cost (2 x Rezult straw rake with Stocks seeder)	£42	
Rolling	£18	
Fertilising (2 x applications)	£24	
Spraying (3 x applications)	£42	
Combining	£90	
Burning straw	£25	
Drying costs (per hectare)	£72	
Total Fixed Cost	**£313**	

Net Margin		£538

Winning The War Against Flea Beetles

September 25, 2016

Like many rape growers, we've not managed to dodge the flea beetle attack on our Trial Farm this season either.

Out of all the rape fields drilled, one field in particular suffered considerably more damage than the others. Uncommonly, it was seeded in late August into bean haulm. We wouldn't normally put rape in this late, nor would we go in after beans. The drilling was done to accommodate our design team who wanted to run additional OSR trials with low disturbance coulters and I had no other fields left. The crop went in really well and came up just as nicely but then disaster struck on the 10th September in the form of a warm, humid weekend which brought the onset of flea beetles with it. They hit the crop hard and I watched a good part of the newly formed cotyledons disappear in front of my eyes – in the space of a weekend. It was truly heart-breaking to see large areas of fine crop getting destroyed so mercilessly and even more devastating to have the results of an important development trial hampered by a petty pest.

It looked like the beetles were determined to party through every little bit of green in this field and I've been left with no choice but to get my sprayer out the following Monday. Hallmark at 0.075 l/ha soon put a stop to their naughty weekend! Although affected quite badly at first, I was encouraged to see the crop recovering well during my crop walk a couple of days ago. Perhaps the fertiliser placement below the seed has given it the much needed boost.

When things don't go to plan, we're keen to drill down to the root of the problem and learn from it. I believe that late drilling was one of the reasons for the flea beetles taking such a liking to this field. The second was the method. Although the drill has done a fantastic job of establishing the crop, the lack of straw after beans resulted in more moisture being lost to the environment and possibly a slower growth rate which could not withstand the onslaught. I'm also convinced that the flea beetles were attracted to the smell of cultivated soil like a magnet.

Interestingly, the other fields withstood the flea beetle pressure and got away with hardly any damage. One of them was direct drilled into wheat stubble whereas the other two were inter-row strip-tilled into long standing straw. Sadly, the rows in the direct drilled field have soon become busy lanes of the slug M1 so we had a different problem to contend with there. It goes to prove that good soil reconsolidation is paramount when seeding rape and direct drilling does not provide optimum conditions for OSR, especially when drilling into heavy clay soils like ours.

The fact that the inter-row drilled fields didn't get a visit from either of the unwelcome guests, however, is no coincidence. I am certain that the different establishment conditions were all that was needed to keep the pests away. Here, the crop was strip-tilled with the Pro-Til kitted out with the new low disturbance coulters, in-between the rows of long standing straw. We also used the front legs to produce a shallow tilth which means the seed was placed in a well-structured, friable soil and reconsolidated twice for best seed-to-soil contact. Despite the dry conditions, the stubble and chaff kept the ground sheltered, preserving the moisture, which got the crop away quickly. The drilling date must have also played a crucial part. Established a good couple of weeks before the badly affected field, the rape was more advanced and therefore less vulnerable when the flea beetles arrived. The chaff-covered ground clearly proved to be less of a lure compared with the Michelin-star smells of fresh soil coming out of the bare field "kitchen". The war with flea beetles may have cost us some casualties but we have certainly won the battle hands down in this field.

There are a few lessons we can all take away. Firstly, seeding rape earlier seems to help the crop to withstand the flea beetle attack. OSR also favours lightly tilled, well reconsolidated and moist soil awarded by strip tillage. I'm also convinced that flea beetles are attracted by the smell of disturbed soil, whereas the ground cover of straw seems to have the opposite effect. Next year, we'll be prepared and waiting!

Flea beetle having "a light bite" on us

Hoping Hellmark would send the flea beetles to Hell

Recovering rape was boosted by fertiliser placement below the seed

Slugs Favour Direct Drilled Soils

October 2, 2016

As an engineer, my mind is always in top gear thinking of new projects and developments. I'm a farmer with a business to run too, and will never pass on the opportunity to better my yields or get more for my money. I've also a third hat of heading up Mzuri were we like blazing the trail on crop establishment. It's a fine juggling act but I wouldn't swap it for the world. Inevitably, we have to run quite a few crop experiments on our Trial Farm to keep all my plates spinning. Some end up being a roaring success and propel our development forward whereas others don't do as well. It's all useful knowledge regardless, as it allows us to offer better advice and hand-on-heartedly say that "we've been there and drilled it".

This season, we're on a quest to perfect the recipe for best looking rape and we're keen to report our findings so far. The trials involved experimenting with different drilling dates and methodology – with mixed fortunes. Some crops were direct drilled with the Pro-Til straight into straw and some were inter-row seeded in full striptill mode. The direct drilling was carried out a couple of weeks later than the strip tilling.

Drilled into heavy Evesham Lias Clay, both trials came up beautifully and evenly so it was really disappointing to see the direct drilled rape being attacked by an army of slugs just days after it emerged, wiping out a good length of the crop at a time. The flea beetles didn't hesitate to join in either. Luckily, the strip tilled fields did not share the same bad fortune and continue to thrive.

This highlights some of the pitfalls associated with direct drilling rape. It's nothing new that OSR, more than most crops, needs high levels of moisture and good seed-soil contact. The fact that the DD rape fell victim to the slug attack, despite the strong start, points to insufficient reconsolidation of the seeding furrow, allowing slug access to the seed – a common method-related issue rather than a problem to be attributed to any particular make of a drill. Direct drilling does not provide a weatherproof method of establishment either; the channel is prone to opening up in dry weather or turning into a mud bath with excessive rainfall. Either is bad news for the seed.

Interestingly, and to our huge relief, the strip tilled crop is looking sound and healthy. The difference? It benefited from "the full works" Pro-Til seedbed preparation, with the breaker leg and the dual reconsolidation press wheels playing a particularly important part on heavy ground. The combination of these features made sure that the seed was placed into moist, friable and air pocket-free soil to provide it with the best possible kick start.

In hindsight, there are things we could have done differently to give the direct drilled crop more of a helping hand. Firstly, we could have brought the seeding date forward. Secondly, adding slug bait to the metered stream of seed would have given the unwelcome visitors a greeting they weren't expecting. We did, however, want to do a fair comparison and, having done this, we still feel that zero tillage is a risky business for establishing rape in most UK soils.

Having said that, we recognise that there is a place for direct drilling and offer low disturbance coulters which can be operated on the Pro-Til drill with the breaker legs out of operation – brilliant for establishing crops such as radish which are less prone to slug or flea beetle pressure. The key is using the right tools for the job, depending on the crop and seeding conditions on the day.

Inter-row strip tilled rape at 6 weeks

Direct drilling has a place with crops such as radish

Rape looking strong thanks to the better establishment environment provided by dual leg action and reconsolidation

Direct drilling (left) vs Strip tillage (right). The crop on the right has been strip tilled using both breaker and seeding legs on the Pro-Til whereas the crop on the left has been seeded in direct drill mode with the breaker legs out of operation. Running the front leg ahead of the seeding coulter in the full striptill mode has created a shallow tilth to seed into. Whilst it moved a little more soil compared with direct drilling, strip tillage provided a safer environment for crop establishment. Minor slug damage is visible on the right but it is negligible compared with the direct drilled crop.

Winter Wheat Drilling Gets Underway

October 7, 2016

Undeterred by the intermittent rain interruptions, we've made a good start on drilling winter wheat last week. A trialled and tested partnership – the farm Pro-Til 3T Select on the good old faithful Case IH – got out to work on Wednesday. In line with our maximum soil respect policy, the old girl was wearing her favourite wide galoshes to keep her light on the ground, whereas the Pro-Til was sporting new gear in the form of dual row seeding points.

We were running the drill in its "full works" mode – leading trash-cutting discs, breaker legs and reconsolidation wheels at the front, followed by the new seeding coulter system with a press wheel and the harrow bar at the back of the machine. Farm trials indicate this to be the optimum configuration for good establishment and we're using the machine to its full potential. It's all about preparing the "perfect nursery seedbed": the discs clear the strip of residue, whereas the dual leg action and reconsolidation make sure the seed is placed in close contact with friable, moist soil.

The breaker legs were set at 65mm to give us a nice shallow tilth with a placement of 0.24.24 at 120kg/ha just below the seed level, ahead of the seeding coulter. The seed was being dispensed through nine sets of dual shoot points at 160kg/ha, creating the total of eighteen rows in a three-metre-wide pass. With a band of 140mm between the two rows of seed and just a marginally wider inter-row between the coulter legs for light interception, the crop will look very similar to a conventionally drilled establishment once it's filled out the gaps.

We were going into rape stubble which was sprayed off with glyphosate two weeks prior to drilling to kill off volunteers and grass weeds. The Rezult treatment a week later stirred up the slug snugs and prepared the perfect environment to drill into. Coupled with front leading discs, the harrow's tines are so efficient that the field looked like it had been disked but the actual tilth was no deeper than 12mm, keeping the soil biology undisturbed.

Within twenty-four hours of drilling, we used Twose rollers with paddles to level the ground off. An important finishing touch, this improves the efficacy of pre-em herbicides and keeps my agronomist sweet.

If that isn't the perfect start, I don't know what is!

Crop Walk With Farm Agronomist

October 10, 2016

Zero tolerance on weeds

This morning we've been paid a visit from David, the farm agronomist from Hutchinsons. We're off to do our routine crop walk and on the way to the fields, the discussion turns to our zero tolerance policy on weeds. As with any neighbouring farms, grass weeds present an ongoing headache in the area, with rye-grass and black-grass high up on the leader board. Amongst the broad-leaved weeds, charlock in the oilseed rape also keeps us on our toes too. Experience taught me that you can't ever take the foot off the pedal when battling weeds as it will always come back to bite you in the following years. This is why we don't just rely on herbicides but use both crop and chemistry rotation to keep weeds at bay – a management strategy that has rendered good results over the past few years, with us firmly in the driving seat on most fields now.

We use crop and chemical rotation for best weed control

Winter wheat

We always try and hit the grass weeds hard at the pre-emergence stages, typically alternating between Crystal, Liberator and Vigon to minimise the risk of chemical resistance, followed by an application of Atlantis in early spring. They've been doing a pretty decent job and I'm keen to keep it that way. On David's advice, I'm now considering to add an additional herbicide split in the autumn on the worst grass weed areas. The first application of pre-emergence herbicide will coat the surface and allow us to tackle the weeds early to eliminate competition; this year, we have already applied a Vigon mix (Vigon, Sempra and Defy) to suppress black-grass and rye-grass. With the efficacy window extended by the cooler temperatures, a top-up treatment of a further flufenacet-based herbicide later on will boost grass weed control, giving us better chemical persistence.

As we're deliberating the options, we arrive onto my first field of winter wheat. Seeded twelve days ago into a sprayed off and rolled ground, the wheat is just piercing through the surface. The seedbed was rolled within twenty-four hours of drilling and pre-em treated the following day. I'm frustrated to find some crow damage but David's comments put a smile back on my face. He's impressed with the establishment achieved by the new Pro-Til dual row coulters and is quick to praise the system: "You can always tell a Mzuri-drilled field by its distinct spongy texture – the soil never feels tight. A very even establishment across the field including the headlands!"

We put it down to a very even seeding depth and plenty of retained moisture from the undisturbed soil. Good soil shape on our farm is not all down to the drill but our wider farm management practices, including taking on board the sound advice from our good friend David!

My agronomist is impressed with the evenness of germination across the field

Clearly, the crows like our wheat too!

OSR Trials

I'm keen to hear David's thoughts on my rape, as we've had mixed success this year.

The first field en route is our heaviest field and in the past has proved very challenging.

This time, it's in need of a charlock treatment. Having said that, the crop is already past the six leaf stage and David thinks we have a nice, even population of rape, all considered. It's already had Centurion Max to deal with the grass weeds, and now that we're beginning to have frosts, an application of Fox will to suppress charlock is very timely.

Next, it's the rape trial field. A testing pad for the new coulter system, the field was unusually drilled into bean haulm a couple of weeks late as no other fields were available. We had excellent germination but the crop was hampered by a flea beetle attack. I was dubious if it'd live to see the harvest but amazingly, it has done really well to recover. Still, David thinks it looks good and is nothing to worry about! However, putting rape straight in after beans has also presented us with a volunteer problem and David's advice is to address it now before it gets out of hand. We also have a small charlock population here. Apparently, an Astrokerb and Fox sequence is what the doctor's ordered to remedy both and it'll be going on asap.

The field has already been pre-em'ed with a Centium treatment to knock cleavers. To the agronomist's delight, the powerful chemistry has worked a treat with not a single cleaver left in sight. On the downside, we seem to have patches of spray overlap on the headlands which affected a few plants, causing distortion. A simple operator's error which is easily done and unfortunately, I've only myself to blame. I'm a little concerned about the double dosing effects but David assures me we got away lightly.

Swiftly moving on to my pride and joy this year – the inter-row drilled rape that's looking spectacular. Drilled in a full strip -till mode into 300mm standing stubble, it's already outgrown the long straw and is looking clean and healthy. Impressed with what he saw, David is convinced that the extra length has given the crop shelter and forced it on. He checks it for Phoma damage and, so far, so good – we're clear!

Finally, it's the direct drilled rape. Established with the Pro-Til with the leading tines out of operation, it went into wheat stubble a couple of weeks after the inter-row drilled field. Sadly, the crop fell victim to slug and flea beetle attack, causing severe damage to some of the rows. The survivor rape has recovered really well and we're hopeful that most of the gaps will fill out. Interestingly, we drilled two passes with the breaker legs in the ground for comparison. The difference in the results is plain to see and in itself is a testament to strip tillage.

Despite slight chemical distortion due to double dosing, the rape is looking good

The extra long straw has forced the rape on

Our direct drilled rape is recovering from slug damage

Wildlife On The Rise Thanks To Conservation Farming Techniques

October 19, 2016

I'm a firm believer that nature and agriculture can work hand in hand and that profitable farming doesn't have to come at the expense of wildlife. If you look after nature, she won't just reward you with a beautiful birdsong but with healthier soils and higher yields too. Strip tillage, retaining surface straw and implementing some wildlife-friendly farming practices such as wider headlands, careful hedgerow management and land sparing are just a few things we do to pay nature our dues – a small commitment and, as far as I'm concerned, one that makes a huge difference.

Striptill techniques support biodiversity

Into our sixth year of strip tillage, we have seen a marked rise in the numbers and diversity of wildlife on our Trial Farm. I'm convinced that reduced tillage has a lot to answer for here. We're only cultivating a narrow band, leaving the rest of the soil with previous crop residues intact where a busy habitat of beneficial organisms does it a lot of good. Above ground level, we like to leave the straw extra-long to provide the birds with a sheltered, well-stocked home. Five years of strip seeding have put our soil in good shape which is now full of worms, soilborne beetles and insects, with a growing range of farmland birds darting through the fields and larger animals being a frequent site on the farm.

Specifically, we've seen a steep increase in hedgerow bird numbers, including tree sparrows, yellowhammers and finches, all through the winter. Game birds – partridge and pheasant amongst the numbers – are also fond of our farm and we're even regularly paid a visit from predator birds, particularly the sparrow hawk. Luckily for the smaller chirpers, our dense hedgerows are giving them plenty of cover to safely nest in.

A quarter of our arable land – a hundred acres – is over winter cover crops which make for perfect shelter for the birds with lots to feed on, and which are particularly popular amongst ground birds like lapwings and skylarks. We've even started hearing curlew which we've not heard for years.

Wildlife-friendly farming doesn't cost the earth

To encourage berry-loving birds, I have planted a wild hedge mix of hawthorn, blackthorn, sloes and rosehip around some of my fields, which are getting the thumbs up from the field mice too. The gaps in the older hedges were filled in at the same time. Not only does the variety of shrubbery attract different species, it also provides them with a well-stocked winter larder to feed on. To give the birds a helping hand throughout the cold season, we have a policy of not cutting our hedges until the winter's really set in and "the pantry stocks" have been depleted.

Our 4.5 metre headlands also benefit the natural flora and fauna. Allowing the extra width is a very small price to pay for keeping the fields in tiptop shape and for taking care of nature. With plenty of turning space, I have easy access to my crops and hedges and seeing the birds busying themselves in fields 'tops it all off'.

If expecting a cold winter, we often leave a small area of crop for the wildlife to pick through. With heavy snow forecasted this year, they'll be tucking into the five hectares of maize trial plots which have been purposefully left unharvested. The crop will provide excellent shelter and food for the birds, and will be particularly beneficial for wild pheasant and partridge.

Hoping to attract even more diversity, we even have a small tree plantation. Planted a few years ago, it's been left to its own devices with the birds appreciating the little haven created by the maturing branches and the long grass.

I'm really proud of the fact that my farm is supporting the entire food chain from the bacteria and earthworms in the soil, to slugs, insects, birds and larger animals, which all nourish the next link in the cycle. For example, the hedgerows have been enticing an increasing number of owls for their nocturnal canapés. Our hare population has doubled in the past year prompting a regular call from Mr Fox who doesn't turn his nose up to slugs, worms and berries of the hedges either. Another regular visitor, the honey buzzard also helps to keep the fields clean from gastropods and dead mammals.

The things we do to make wildlife at home on our farm are all small measures that cost next to nothing, yet make a huge difference to maintaining nature's biodiversity and supporting this complex ecosystem. Most importantly, working alongside nature pays dividends in the way of healthier soils and stronger crops, allowing me to run a profitable business whilst safeguarding the soil – my single most valuable asset – for future generations. I believe this is what they call a clear conscience and, if I'm not being kept awake by the screeches of the barn owl, I generally sleep pretty well.

Nordic Diary Takeover

October 21, 2016

We regularly welcome visitors onto the Mzuri Trial Farm to keep them abreast of our latest developments. Last week, it was a real pleasure to receive Blankso, our recently appointed importers for Denmark and Sweden, to show them around and to find out how they've been getting on. This is Blankso's Diary Takeover, reporting on their latest trip and Mzuri's success in Denmark to-date.

Denmark lands at Mzuri

As both a farmer and an importer, it is always a pleasure to visit the Mzuri farm and factory. I have been working with different manufacturers of agricultural machines over the past 15 years; however, I have never seen a company that is able to translate its most recent trial findings into machinery improvements so quickly and with such precision, resulting in well-engineered farming solutions.

When we first met the people behind Mzuri, it soon became clear to us that this was a very different company to work with. They have a clear advantage of not being too large a company, where all the details are taken into consideration... This is true not only for product developments, but also when it comes to their sales, service and marketing teams.

As usual, our visit to Mzuri premises last week was a well-balanced combination of meetings, farm tours, exchanges of ideas and useful discussions with people from different departments. But the most interesting part of the trip, in my opinion, was looking at the crops on Mzuri's Trial Farm. The ground there is different to most places in Denmark, but if one should make the comparison anyway, the farm soil would be on par with the most difficult conditions we have on heavy clay which is almost impossible to tame into a good seedbed. This is why we were even more impressed with what we saw: the seedbed had a nice crumb to it and the establishment was very even throughout.

As an importer, we really appreciate Mzuri's approach to continuous product development. They understand their customers' challenges out in the field and engineer products that make farming easier and better. It was good to see that Martin's creativity and problem-solving skills are matched by his employees' dedication. People at Mzuri are working for the company as if it was their own. Some of the latest developments included the single grain seeding unit for maize, the updated seeding coulter system and the new concept around row distance flexibility. I think they will make strip tillage even more appealing and I look forward to bringing the new technology to Denmark and Sweden.

Examining the crops with Martin

Direct drilled rape is recovering from slug damage nicely.

The Pro-Til Select 4T enjoying her cruise round the Danish islands

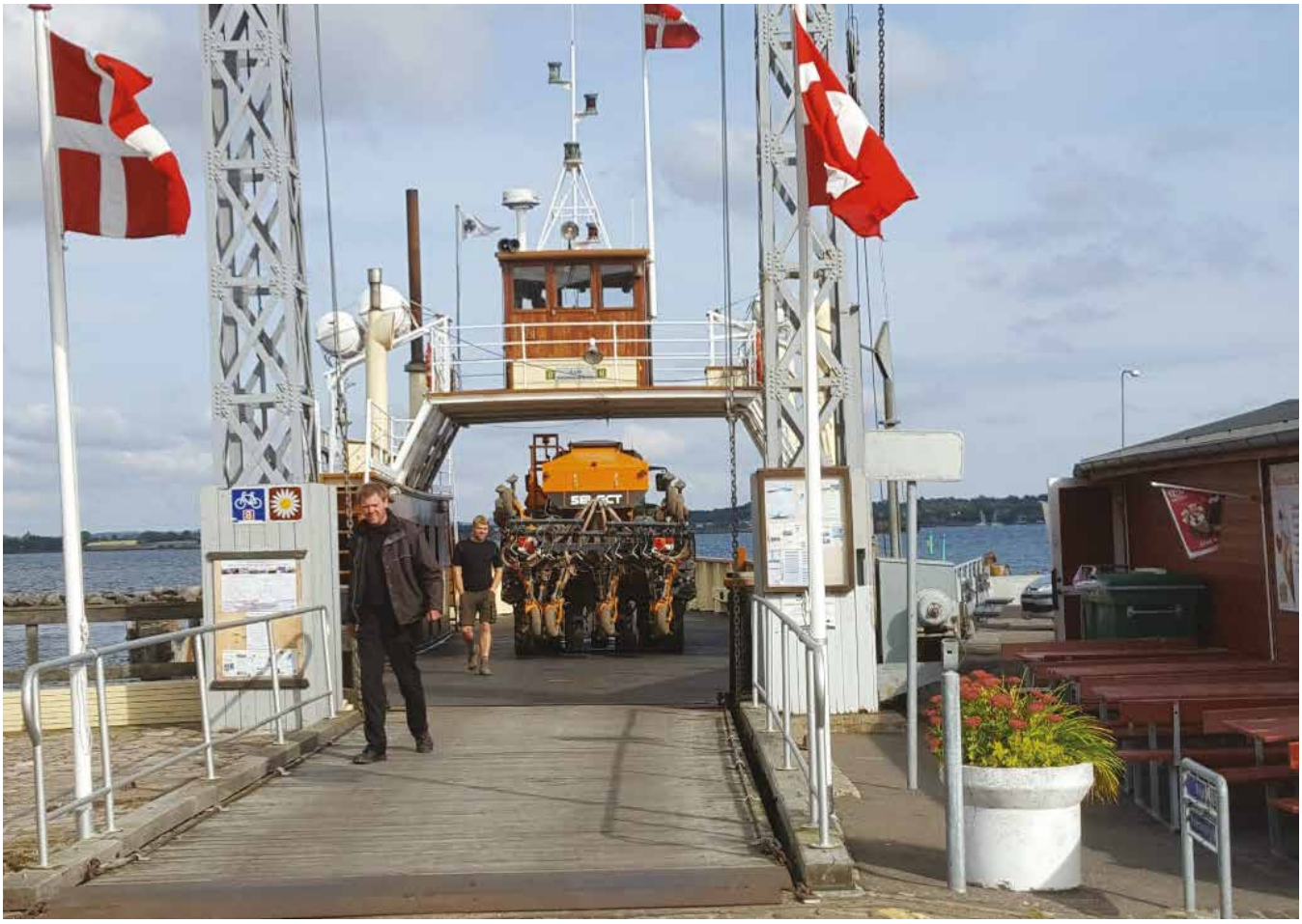
Mzuri takes off in Denmark

Our first season has started off with an ambitious demo tour of the Mzuri Pro-Til in August. The drill has been very well received by the Danish farmers, many of whom are already familiar with the strip-till concept. We sold the first machine within weeks of officially representing Mzuri; the demo requests continued to flood in and the Pro-Til hasn't stopped touring around the Danish islands until the end of September.

So what's the big appeal to the Danish farmer? It is a combination of factors such as lower input costs, better soil "health" and no compromise on yields. On top of that, it's the machine's flexibility. It is capable of working in all conditions from seeding into ploughed ground to drilling into the stubble directly after the combine – with great results. Most farmers that have seen the machine in action also comment on its ease of use and solid build.

With the demo book for the spring season filling out fast, we're sure Mzuri will soon become an established agricultural brand in Denmark!

Anders Hansen, Blankso, Denmark



November Crop Walk: Wheat Trial Update

November 1, 2016

Crops drilled, rolled, sprayed and I can finally breathe a sigh of relief. I've done all that I could to give the new bit of green the lushest of starts – now it's down to Mother Nature to do her bit while I watch my crops grow through the winter.

Since the end of October, the Farm has been pretty much left to its own devices. Walking the crops last week and slowly recovering from my autumn drilling campaign, I was pleased to see my hard work starting to pay off. There's something sublime about watching the light bounce off the perfectly defined rows of new fresh growth...

I was not the only one to quietly admire my wheat. I startled a small herd of deer upon my arrival, an increasing headache at this time of the year. Luckily, there's not much damage little Bambis can cause at the moment and, other than a few hoof marks, the crop is looking really good.

The deer is an increasing problem this time of the year

Trial 1. Low disturbance coulter and dual leg configuration.

I drilled the field with the Pro-Til 3T fitted with the new dual leg and single shoot coulter configuration. That's nine seeding arms on a three-metre drill, each kitted out with the new low disturbance points on dual legs, creating eighteen rows in a pass. Now that the wheat has filled out, it doesn't look far off the finish of a conventionally seeded wheat.

Drilling Date: 28th September 2016

9 seeding arms, 18 single low disturbance coulters on dual legs = 18 rows/3m drill

Trial 2. Dual shoot broad band coulter and single leg configuration.

For comparison, I drilled my last field with the nine legs fitted with a broad band coulter, also giving me eighteen rows per three metres.

The wheat went in mid October, followed by a pre-em treatment. Up within ten days, it's well on its way and will catch up with the rest in no time. I'm sure you'll hardly be able to tell the difference within a few weeks' time!

Drilling Date: 13th October 2016

9 seeding arms, 9 dual shoot broad band coulters on single legs = 18 rows/3m drill.

Trial 3. Single shoot coulter and single leg configuration.

I've also done some trials of the new single shoot coulter on wide spacings to test its performance. We don't often seed wheat this wide but we've drilled a plot with the Pro-Til sporting nine low disturbance single shoot seed boots spaced 330mm apart.

The coulters placed the seed with brilliant precision and would work a treat in hard going conditions or turf, despite the unconventional set up.

Interestingly, similar trials in the past have not shown much difference in yields from our usual striptill configuration which I put down to light interception doing the magic. I'm hoping to confirm the theory at harvest – update to follow!

Drilling Date: 29th September 2016

9 seeding arms, 9 dual shoot broad band coulters on single legs = 18 rows/3m drill.

Keeping On Top Of Grass And Broadleaf Weeds

November 18, 2016

With the long dry spell that we had, I was beginning to wonder if we'd ever see some rain before the forecasted deep winter set in. The heavens finally opened last week and, as it is often the case, the rain just didn't want to stop! Luckily, Friday morning has brought a bit of a chill in the air and even a glimpse of sunshine to dry the leaves – a perfect window of opportunity for getting the sprayer out that I grabbed with both hands!

With the ground being wet and cold, the conditions for the soil activating ingredients were spot on. On my agronomist's orders, into the tank went a cocktail of Astrokerb to control grass and broadleaf weeds, and Prosaro fungicide to eliminate any possibility of phoma setting in. Snatching the few hours of dry weather, I only just managed to spray the mixture onto my most advanced rape including the trial field drilled with Pro-Til 3T at different row spacings.

Zooming up and down the tramlines to beat the threatening clouds, I was encouraged to see the distinct yellowing of the charlock leaves – a very visual assurance that the Fox I put on three weeks ago had worked a treat.

Interestingly, the part of the field I seeded on narrower spacings seemed to harbour more weeds than the trial on wider inter-rows. Arguably, the higher levels of soil disturbance may have been at the root of this. Having said that, the timely Fox application knocked the charlock for six.

Considering we had such a dry start, I'm really proud of my rape looking so healthy and clean throughout, including the headlands. Having driven past some conventionally established crops this year, it is amazing to see the difference that a bit of retained soil moisture has made in my fields. The size of the canopy speaks for itself: it's thumbs up to strip tillage yet again!

Wide spacing trial plot seeded with 5 double shoot coulters at 660mm row spacings.

Narrow spacing trial plot. 9 seeding arms fitted with a dual leg system and single row coulters giving 18 rows 165mm apart.

Spraying the headlands, I was pleased to see the effects of Fox on the dying charlock.

End Of November Crop Walk: Wheat, Radish And Grass Ley Establishment Update

November 30, 2016

There's nothing like a walk around the fields on a crisp, cold winter's morning. And it sure feels like winter today. Following a couple of rehearsals with sub-zero temperatures, it's finally decided to make its grand entrance last night stylishly dressed in icy fog, freezing the temperature to minus 8° C and spreading a sparkly blanket of white all over my farm. This morning, the serene blend of blue skies and sunshine piercing through the misty frost looks like a scene from a Christmas fairy tale.

This is a great opportunity to enjoy the farm in a different light so I wrapped up warm and ventured out into the fields. The cold snap has lured the deer, rabbits and hares out of their hiding too, with partridges and pheasants all leaving their cover in search for a hearty breakfast. It's warming to see such a good turnout and I'm really glad that I'd left the hedges untouched for the farm birds to enjoy. The farm policy is not to cut them until January or at least until most of the berries have served their purpose of feeding the flocks.

Springfield Breakfast Bar is open for business

Winter Wheat Update

I'm particularly pleased with how well my winter wheat is doing across the whole farm this year. The thin layer of frost on the leaves has really accentuated the wide row spacings, a unique tell-tale sign of the Mzuri Pro-Til drill you couldn't mistake for any other. Drilled with the broad band coulter, the wide-spaced bands of wheat are proudly stretching into the horizon like a line-up of soldiers. A good frost is exactly what was needed here and I'm sure it has done the crop as much good in controlling disease and pests as any fancy cocktail of fungicides and insecticides would have at this time of the year. Once again, Mother Nature shows her skill at balancing things out.

Grass Ley Establishment

I have established a 15m grass headland around the main trials plot field this season which is looking very tidy, all things considered. I drilled the grass seed at the end of October which, I will admit, was way too late. I just never got round to it with other priorities constantly pushing the job down my 'to do' list. The grass was seeded with the Pro-Til 3T – 9 seeding arms fitted with a dual leg kit with single low disturbance coulters, giving us 18 rows a three-metre pass. We were able to go straight into uncultivated soil and I'm really pleased with how this drill set up has performed. In fact, the combination has proven to be ideal not just for grass ley establishment but winter wheat, oilseed rape and radish

Mzuri winter wheat on wider spacings

9 seeding arms fitted with dual leg kit and single row coulters = 18 rows/3m pass.

Thumbs Up For Radish

Speaking of radish, it has done exceedingly well too and has reached my waist line despite the long dry spell that we've had. Credit to strip tillage where it's due: we simply drilled the crop into lots of straw directly behind the combine and let nature take care of the rest. The Pro-Til has done a five-star job in conserving the moisture, placing the seed into a perfect environment and enabling the crop to get away quickly.

The radish is giving cover to more than just our soils this season. I was really surprised to disturb a few woodcocks on my rounds that will have most likely moved here from the colder climates for the winter. They clearly appreciate the dense shelter and find enough worms and beetles to feed on. Sadly for our winged residents, the radish's time is nearly up. It's highly susceptible to frosts, and another couple of freezing nights will finish it off completely. Having said that, this is exactly why we love this cover crop so much. Not only is it quick, simple and cheap to establish, come January, it will have virtually disappeared, leaving an open environment for flushing wheat volunteers and grass weeds out with glyphosate. An early-finishing cover crop also allows the soil to warm up quicker in the spring so for Springfield Farm, radish ticks most of the boxes.

With the cold weather setting in, the radish's days are numbered.

Last Wheat Leaves Farm

December 12, 2016

Loading the last wagon of wheat

Four months after the harvest, we've sent the last wagon of wheat on its way. I wonder where it will end up and what it will turn into. Whatever its destiny, I'm pleased to have done my bit to feed the world. They say farming is one of the hardest jobs on the planet but it has certainly become much easier since I switched to strip tillage six years ago. Paradoxically, I work less and enjoy more time with the family, yet my crops are looking healthier and yielding better than ever before. So much so, I'm no longer on the bread line but running a profitable operation.

Looking back, the spring establishment hasn't exactly been showered with perfect weather conditions. We had an exceptionally dry start followed by a wet June with limited sunlight, just when the ears were maturing and could have done with as much sunshine as possible. Still, our yields came out at a respectable 10.5 tonnes per hectare. Not our bumper crop, yet nothing to sneeze at either, all things considered. Comparing how other growers have got on this year on different systems, I think Mzuri has proved to be one of, if not the most weatherproof system again.

There are plenty of other things going for strip tillage too. Since ditching the plough and all the hangers on, I have reduced my establishment equipment to just a Rezult straw rake, a Pro-Til one-pass drill and Twose rolls. Fewer machines means far less tied up capital, fewer wearing parts and lower depreciation costs. Add the huge fuel and labour savings to that, and we're talking about an attractive net margin here. Most importantly, the soil – our shop floor – has improved leaps and bounds.

I look forward to the final wheat cheque coming in so the bank balance can recover from the last sting of the agrochemical bills. Well, for a few days at least, until I've gone looking for Mrs Lole's Christmas present. I'm told electrical appliances are bad taste these days...

Last 2016 Crop Walk With Farm Agronomist

December 15, 2016

The colder weather has put the crops to bed, slowing their growth right down. Most of the chemistry has now been applied with the exception of the follow-on dose of Fox which will go on in January so I can enjoy a leisurely stroll round the fields without the daunting feeling that there's something I'd forgotten to do. A few days ago, we were paid the last visit of the year by our agronomist David who joined me to give the crops one final check over.

David is pleased with the winter wheat looking so green and healthy, with no sign of disease. The wide rows drilled with the Mzuri Pro-Til have filled out nicely. Last year, we grew JB Diego and Reflection varieties which presented us with a small bother of yellow rust. Switching to Evolution and Costello with better disease resistance has clearly had the desired effect, leaving the crop nice and clean. David calls it "using Nature's genetics" to our advantage. I call it a good saving on my agrochemical bill.

The rape too is looking really good. It's had all of its chemistry for this year with just the second dose of Fox and oil mix to follow in January. The first application has worked very well to kill charlock and volunteer beans and the follow-on treatment is bound to weed out any survivors that managed to dodge it the first-time round.

The cover crop is starting to break down and my agronomist is keen to start planning for 2017. Shall we follow it with some beans or more linseed? With healthy hedge rows and extra wide headlands, we more than tick the greening requirement and David seems to be as keen on linseed as I am. It's a different species to rape and beans and goes in quite late so we get better blackgrass control pre-drilling. What's more, there's good chemistry available for the "in crop" stages – we use Centurion Max on our farm which I couldn't fault at all when it comes to grass weed suppression.

David is quick to praise our soil structure: he says it has a nice, mulchy feel and a good crumbliness to it which he likes to refer to as "the Mzuri difference". It feels less sticky to walk on and drains better. We achieve this through reducing soil disturbance and leaving chopped straw on the surface, which David is a huge advocate of, too. It's nothing revolutionary as far as I'm concerned – Mother Nature has done it for millions of years, allowing the worms to incorporate the goodness back into the soil. With his agronomist hat on, David is keen to remind that ploughing the straw in creates anaerobic conditions and starves the soil of nitrogen. "Incorporating" the residue naturally with the help of soil organisms, on the other hand, costs hardly anything with strip tillage, and it leaves our soil in a better condition than the plough. It's a change of mindset, but once you get past the initial shock of a different appearance, you've got to love it!

The combination of frost and Fox has successfully checked the charlock and turned the volunteer beans black.

Relieved to see the crop doing so well despite chemical distortion. It's been a blessing in disguise as the slow down in growth prevented the rape from bolting.

Mzuri's Christmas Takeaway – Top Tips For 2017

December 19, 2016

With most of the farm jobs out of the way, I like to look back over 2016 and take stock.

All in all, it's been another good year for Mzuri Trial Farm, despite the weather throwing a few spanners in the works. We had a cold spring, a wet June and a dry autumn to contend with but strip tillage has proven its worth yet again, with spring crops having yielded well and autumn drilling looking really promising.

The Farm has been busy with crop trials and customer visits right up to the end. Last week, we have welcomed some visitors from Poland, Germany and our native UK who have come to learn more about our system and have left with a few handy tips on strip tillage.

Talking of tips, I think it's important to keep an open mind so we can look at things in a new light and continue to better ourselves. As I look back on the year, I make a mental note of farm successes and things we could have done differently. As always, I'm happy to share these with you. Here's my Christmas takeout with my top tips for 2017:

We couldn't have picked a nicer day for showing our European guests around.

1. It pays to be patient.

Waiting until the soil has warmed up to at least 8° C in the spring has paid dividends – the crop has got away quicker and soon caught up with the earlier establishment, yet without any risk of seed or plant damage.

2. Cheap and cheerful does it.

Consider linseed as a break crop. It's cheap and easy to establish and is a nice little earner on a striptill system. We drill it straight into overwintered cover crop with plenty of moisture – typically radish – and we're yet to have a bad harvest. This year, the yields have come in at over 3t/ha and the returns were better than some of the conventional crop expectations quoted by Mr Nix. Not only that, linseed had cleansed the fields of weeds nicely so it gets top marks in my book

The humble linseed – the low maintenance, high return crop.

3. Follow the combine with cover crop.

To take full advantage of the warm weather, we've drilled our radish directly behind the combine. It got established really well and covered the ground in just three weeks, harvesting the sunshine and mopping up residual nitrogen. I find that every day's delay at drilling costs almost a week's growth come Christmas time. Now fully mature and up to my waste, the radish is starting to break down, making way for a clean-up operation with glyphosate in January

Radish – one of our all time cover crop favourites.

4. Direct drill OSR early.

Drill rape early – ideally, before the 3rd week in August. We have run a number of trials with the new style low disturbance coulters this year, one of them being used in direct drill mode with the front Pro-Til legs out of operation. This particular plot was put in late (12th September) and, in all fairness, it has come up well. Double trouble struck in early September in a form of a flea beetle attack and a slug problem, and I'm convinced that the early drilling was partly to blame. Hardly past the cotyledon stage, the young plants did get a serious thrashing. Luckily, the crop has recovered amazingly well but I've learned my lesson – seed earlier and place a band of fertiliser under the seed to spur the hungry roots on. Just like radish, direct drilled OSR should follow the combine as closely as possible.

Rape should be drilled before 3rd week in August.

5. Flexibility is key to successful establishment.

Even the most perfect of soils don't always lend themselves to the same treatment and it's important to adjust your technique to suit the particular conditions and the crop. We've done a number of crop trials using different drill set ups and coulters this year. Direct drilling worked particularly well with the new single shoot coulter, creating minimum disturbance whereas inter-row drilling has proved to be the perfect formula for radish establishment into long straw stubble. For grass ley seeding or a conventional finish look, the new twin tine has done exceptionally well. It seems that we now have the drill for all occasions so keep your eyes peeled for the new coulters coming out next year.

6. Carry the can for glyphosate.

It's had a lot of bad publicity in the press recently and it is difficult to imagine the future without it. I do think, however, that it's getting more stick than it deserves and if farmers used it more conservatively without relying on it for crop desiccation, we may well see a reduction in public pressure for its complete ban. On Springfield Farm, we only apply glyphosate "out of crop" and never desiccate. This could well be the way to go if a compromise had to be made.

With the new single and dual shoot coulter capabilities, Mzuri has something for everyone – even those who are after a conventional drill finish.

7. Four is the magic number.

I've left over four metres to nature this year which is not only beneficial to farm wildlife but is practical too. The wider headlands mean that I can go out and trim the hedges at any time over the winter months without damaging the crop. Forming part of the headland is an 80cm sterile margin around the fields which helps us keep the weeds at bay. It seems that size does matter after all!

Grass ley established with the new coulters: seeding arms fitted with dual leg kit and single row points = 18 rows/3m pass.

Welcome Back!

January 2, 2017

A cracking start to the first day back!

I hope you had an enjoyable Christmas and I'd like to wish you all a prosperous New Year.

For me, it's been a welcome break and a rare opportunity to enjoy the full house again, catch up with old friends and indulge in a mince pie or two.

It's a nippy start to the second day of the year and I'm easing back into the working life with a leisurely stroll around the farm. Starting at the crack of dawn to walk the Christmas turkey off, I was counting my blessings as I witnessed another stunning sunrise shine light onto a frosty blanket over the fields. What could be better than the peace and quiet of the countryside!?

The frostbite has nearly finished its job with the cover crops, breaking them down and readying the soil for glyphosate treatment in a month's time.

The winter wheat, on the other hand, is looking very strong. Covered in morning frost, the rows drilled with the new broad band coulter looked particularly stylish, highlighting the unmistakable Pro-Til drill look. The gaps have nearly filled in and, come spring, they will have closed completely.

The openings are more apparent in the neighbouring field drilled on wide spacings with the single row coulters, a configuration which is ideally suited for establishing wheat into grass ley, as well as seeding rape and beans. Here, the contrast between the frosty wheat and the dark soil has beautifully highlighted the curvy rows on the headlands. It's just a matter of time, however, before the green takes over the brown completely.

Despite the untypically warm Christmas Day, Pershore was reported to be in one of the coldest parts of the UK over the festive period. This time of the year, you just can't get too much of the chilly weather – nature's best medicine for keeping the crops healthy – so long may it continue.

This year, we were fortunate enough to enjoy an outdoor reared turkey which came from the same farm as this beautiful bird.

The radish days have been counted.

Wheat seeded with the new broad band coulter for the “classic Mzuri look”.

Single row coulter configuration – perfect for rape, beans and wheat into grass ley

February Crop Update

February 12, 2017

You just have to love nature. The recent frosts have made a tidy job of killing the radish which has served us brilliantly throughout winter months, providing ground cover and harvesting sunlight. All that's left of the field is the standing straw – quite a difference in look between now and October with the crop at its full height!

What a better and easier way to get your soils in good shape for spring drilling than cover crop? All we've done is drilled the radish into long standing straw and left Mother Nature to take care of the rest. The cover crop has been put in with the Pro-Til 3T kitted with the new low disturbance coulters. The died-back radish has revealed a field full of proudly upright straw stubble which goes to prove just how little soil the drill has moved. The ground is clean of grass weeds and volunteer wheat despite the fact that no chemicals have been used since the crop went in – all thanks to the radish blanket effectively blocking out the light and smothering any growth below. The radish has also packed the ground with fixed nitrogen and improved drainage with its large tap roots, whilst preserving good soil structure with aerobic conditions.

In the meantime, the winter wheat is looking the part. But don't just take my word for it. It's pleasing to see that the Mzuri team has as much passion for strip tillage as me and the latest wheat photos have been snapped by my sales and R&D team walking the crops last Wednesday. I'm told "Welly Wednesdays" are here to stay and I look forward to hearing the team's thoughts on how the crop's progressing.

The widely-spaced wheat trial has highlighted the importance of light – the narrow till filled out to cover 60%-80% of the row spacing.

The field drilled with the new broadband coulter is coming along just as nicely, with ten tillers per plant not uncommon.

Both fields are looking green and healthy and I look forward to comparing the yields on these different planting distances.

The frosts have killed the radish completely.

Trial field drilled with 9 single low disturbance coulters/3 metres. Coulter width = 12mm, row spacing 333mm.

Winter wheat drilled with the new broadband coulter is looking as impressive.

Radish in flower in October.

The first frosts in December started to kill the radish off.

Come February, the radish has completely disintegrated.

10 tillers per plant is not uncommon in our winter wheat.

End Of February Wheat Trial Update

February 28, 2017

It's the last day in February and I'm really pleased with the way my winter wheat trials are progressing.

We drilled the field with three different coulter configurations to put the new low disturbance coulters to the test. The crop was direct drilled with the Pro-Til 3T: the first trial plot was seeded with the new low disturbance single coulters, the second – with the new broadband coulters and the third one with the dual leg kit fitted with single points, giving more of a conventional finish. The winter wheat went straight into straw stubble and all three plots were seeded on the same day, at the same depth and at the same application rate to give us a like for like comparison.

It's great to see that the crop is looking green and healthy throughout the field. Previous crop residue has been quickly broken down by the soil micro-organisms to provide the plants with the best nutrition nature can offer. The only addition was a band placement of fertiliser behind the breaker leg at drilling (120kg/ha of 0 24 24). We've not applied any early nitrogen or fertiliser – the field has been drilled and pretty much left to its own devices.

Despite the minimal labour and a fraction of the establishment costs, the striptilled wheat has had the best of starts and is showing promise of good yields, with ten tillers per plant not being uncommon. So little has been done to the field above ground level, that it's easy to forget the complexity of the processes going on underneath the surface. Whilst the narrow strip of tilth has benefited the young plants to no end, leaving the rest of the soil undisturbed is exactly what the doctor ordered to give maturing roots the perfect growing environment. An army of nature's little helpers in the shape of earthworms and other soil organisms have been working away to break down the mulch into lovely topsoil and to create well-aerated and draining ground.

Since switching to strip tillage, the organic content has doubled in the past five years and we're consistently producing much higher yields at lower costs proving to be very profitable. What's not to like?

9 single low distrubance coulters a 3m pass.

9 dual shoot low disturbance coulters a 3m pass.

9 dual leg kits fitted with single low disturbance coulters – 3m pass.

The Benefits Of Good Headland And Hedgerow Management

March 6, 2017

Now that the hedge cutting season has finished, it's a good time to reflect on the farm's approach to hedgerow and headland management. As well as doing its bit for conservation, it's great news for farm profitability and weed control. A few simple practices such as extra wide headlands and regular hedge cutting can make a huge difference without the need to put in a mammoth effort: all we do on our farm is mow the headlands once a year straight after combining and cut the hedges in January every other year.

Headland management

Our headlands are approximately four metres wide from the hedge for a reason. We take our headland management very seriously and think that, when done correctly, the extra width more than pays for itself in ways of better weed control, a cleaner crop and more consistent yields from corner to corner of the field.

We have approximately three metres of grass along the hedge rows and an 800mm-900mm sterile strip lining the field which stop the grass weeds from creeping into the crop. A wider sterile margin is a really effective yet a cheap way to control weeds and it has helped us to quickly eliminate brome and black grass across the whole farm since we've gone wider.

Not only good headland management aids weed control, it's very much appreciated by the wildlife. The beautiful wild flowers and new vegetation supports the wildlife in the spring whereas the sterile strip provides an exposed area for the birds to dry themselves out in and enjoy the sunshine. This is critical for some game birds such as partridges and pheasants for which the ability to dry out in a wet spring is a matter of life or death.

We mow all of our headlands from the bottom of the hedge right up to the field border which is done almost directly behind the combine with a five-metre rotary mower. It mulches all the rubbish and leaves the hedges looking tidy and presentable.

Good headland management also makes hedge cutting in January and February much easier. The hedges are clean of grass weeds, the visibility is better and the extra width can easily accommodate the tractor without damaging the crop.

Hedgerow maintenance

You may recall the article from October 2016 where we were discussing the importance of hedges. On Springfield Farm, they serve additional functions to just providing a field boundary, the most exciting one being the support of the diverse wildlife on farm.

Regular hedge maintenance is better for wildlife as it creates a tighter network of branches for the smaller birds to hide in, protecting them from the larger predators. Our policy on the farm is to trim them every two years and to delay the job until January. This time of the year, the wood is at an easiest and safest stage to cut as it's more brittle and dry. Furthermore, we're not upsetting the wildlife by removing its winter's larder as, come January, most berries will have gone.

The timing makes perfect sense from the workload point of view too as there's little else to do on farm in January. I find it rather nice and relaxing to sit in my warm tractor on a cold winter's day: what a better way to take a grand tour of the farm and get a job done at the same time!

This year, I've been very fortunate to be amongst a handful of farmers and contractors to be selected to pilot test the new Razorback pre-production machine – a hedge cutter with a difference! I've been sworn to secrecy so all I can say at this point is that it's a revolutionary self-levelling machine that has a truly fantastic cut. The Razorback has a completely different head that produces a finer mulch and a much more uniform chop of the vegetation. I was very impressed by how easy it was to use too – it's made my hedges look like a pro job. I hear it's being launched later on this year so watch this space!

A recently planted hedge with a mix of 5 different species of English hedging plants in Oct 16.

The same hedge after it's been trimmed in Feb 17.

I was one of the lucky test operators to trial the new Razorback hedge cutter last season.

March Crop Update

March 27, 2017

At long last, the spring weather is here and work is underway – winter always seems to take for ever to make the exit! Full of new ideas for this season and raring to go, I was glad to finally get the dust off my sprayer and take the fert spreader out for a spin again. It's been so long I'd nearly forgotten how to use the controls. Gladly, it's a bit like riding a bike and it soon come back to me!

I'm always apprehensive of what damage Jack Frost may have caused to the good old sprayer over the winter months. It was a relief to find no leaks and all the nozzles in full working order. She passed the pre-season checks with flying colours and off we went to apply the first herbicide of the year.

Spraying Atlantis onto winter wheat

0.4l/ha of Atlantis went on on 7th March which was perfect timing. It was only a second proper warm day we had but it got the grass weed shoots growing nicely. A lovely sunny afternoon, no wind and catching the crop at the right stage (it was still open enough to allow good contact with the weeds) meant that Atlantis had the optimum conditions to work in.

First fertiliser applications onto winter wheat and rape

Next, onto the spinner with the first fertiliser application of the year – Sulphan at 150 kg/ha. It went onto all of my winter wheats on 9th March with a dose of the same onto oilseed rape the following day. I must say I was quietly pleased with my autumn crops looking so good as they had nothing done to them this year whatsoever. The fields have wintered really well and carried the tractor beautifully – we have such well-draining soil now and the permanent tramlines do really help to get out early. A bit of sunshine along the way and the job was done before I knew it.

I was impressed with how clean the crop looked because of last year's applications last autumn and winter. When it comes to successful the weed control, we've never taken the foot of the pedal and as a result, there's hardly a charlock in sight.

WOSR fungicide treatment

I have since revisited the rape with the sprayer on 15th March. This time, it was to apply the first Corinth treatment at 0.7 l/ha against leaf spot. It went on once the crop started showing active growth at early stem extension on agronomist's orders and will hopefully keep Phoma at bay.

Follow on fertiliser treatment

March jobs concluded with the follow-on application of Sulphan on 19th March. It's amazing to see how much the crop has moved on since the first treatment just ten days prior to this, with the plants doubling in height and showcasing their proud crowns.

For a week or so, I can breathe a sigh of relief before spring drilling begins. This year, I have something new to trial again so keep checking the diary to find out what we've been up to!

WOSR on 26th March 2017. Drilled late August 2016.

Winter wheat trial plot on 26th March 2017. Drilled with dual shoot coulters on 29th September 2016.(9 seeding legs with dual shoot coulters/3 metre pass = 18 rows.)

Winter wheat trial plot on 26th March 2017. Drilled with single shoot coulters on 29th September 2016. (9 seeding legs with single shoot coulters/3 metre pass = 9 rows)

A few post-hibernation checks on the sprayer before I set off

Atlantis application on winter wheat on 7th March. Crop drilled on 29th September with single shoot coulters.

Corinth application onto WOSR on 15th March.

Follow on Sulphan application on 19th March.

Precision Seeding Trials With Pro-Til Striptill Drill

April 7, 2017

The reason I love being one of Mzuri's Trial Farms so much is that I get to be one of the first farmers to pilot test their latest developments and share my experience with like-minded farmers from other Trial Farms across the UK and beyond. Being an engineer myself, playing with new kit is far better than Christmas, and with all Mzuri's latest developments, I've been thoroughly spoilt!

One of the most recent projects I've been involved with is trialling Mzuri's Pro-Til precision drill. Having run some trials last year, I was out again at the end of March to test the latest precision metering system – and boy, was I impressed! Mzuri have kitted each seeding coulter with a metering unit which gives exceptionally accurate singling of seed. What's more, we've done a lot of work experimenting with spacings, down pressure and seeding depth with truly amazing results. Take what was previously a cracking one pass striptill drill – particularly when it comes to good trash clearance, preparation of the seeding zone and brilliant reconsolidation – add decent speed, seed singling, drilling depth accuracy and precision spacing, and we suddenly have a whole new concept on the market. It's a three-in-one drill that can strip till, direct drill and precision seed all in one! It could probably be taught to sing and dance too.

Precision seeding trials in Poland

Following the success on Springfield Farm, I was invited to Mzuri's Polish Trial Farm to exchange ideas and do some follow up trials. With the Pro-Til already a firm market favourite, a striptill drill that can do precision seeding is going to be a game changer there, according to the Trial Farm's owner. Speaking to him has been an eye opener. He is a large farmer with a few makes of precision seeding drills that all do the job pretty well, but their Achilles heel has been surface residue. Although they have better soils than ours, they have the weather to contend with: between the fluctuations of cold and hot extremes and with sometimes as little as 200mm of rainfall, every drop of moisture counts in this climate. We both agreed that the secret to high yielding corn crop is down to the drill's ability to go into last year's residue so the soil can retain as much moisture as possible, and Mzuri can do just that.

Although the first week of April is typically too early to go spring drilling, we were able to get to work without a problem. Drilling straight into surface residue, we only needed a dry day and we were good to go. The trials went very well and my European friends were delighted with the new drill. The Pro-Til is already returning a much better yield than from the plough, all thanks to its ability to handle straw. In Poland and wider Eastern Europe, they inter-row drill straight into overwintered stubble, which means no loss of moisture and perfect establishment. As well as keeping the soil moist, surface residue keeps the worms happy, improving organic matter levels. Now that Mzuri have perfected the precision coulter system, they've got a drill that can transform the way that maize, sunflower and other precision crops are planted. The combination of one pass drilling, fertiliser placement and great seed-to-soil contact on a precision drill sounds almost too good to be true!

I was told the potential for precision maize drilling is something else. Last year's trials proved to be the best yields they've seen in their country by a long way. Even with spring drilling, a failed maize crop does not raise any eyebrows in Poland as the shortage of rain is an ongoing problem. With the Mzuri, not only do they manage to get the crop established, they get brilliant yields so switching to strip tillage has been the case of going from zero to hero.

As I was leaving back for home, the precision drill was getting ready for its next pitstop in Ukraine to be put through the paces there. I hear its brother was heading for Germany to be trialled there. If you're interested in precision drilling, keep checking in – I have more trials planned this year.

Polish farmers were impressed with Pro-Til's singling and seeding depth accuracy.

Early April Crop Update

April 9, 2017

With the weather spurring the crop on, I only got to enjoy a few quieter days at the end of March before I had to hit the ground running again in April. I managed to squeeze in a T0 fungicide and PGR application at the start of the month just before I whizzed off to Poland to help out with some follow-on trials of the new Mzuri Pro-Til precision drill. Upon my return, there was some serious catching up to do on the WOSR as I still had the final dose of fertiliser to put on. The rape started flowering during the last few days of March just before my Polish trip; when I got back a few days later, it looked like a sea of yellow and was up to my waistline. The crop is around three weeks early this year – normally I wouldn't expect it to flower until the third week of April and I wouldn't be looking to put fertiliser on until the end of month.

In fact, the rape has grown so quickly, I had to make linkage extensions for the fertiliser spreader to lift it up. Even with the tractor on larger diameter skinny wheels, the height wasn't enough so I ended up lifting the spinner by an extra 300mm and tilting it forward to get the perfect spreading pattern.

We started drilling rape in last week of August and finished in the third week of September last year. It's thickened out nicely and is looking extremely promising, particularly on one field which got badly battered by flea beetles within weeks of seeding. It just goes to prove that high seed rates in not everything. Ironically, I nearly gave up on that field and started again; I'm glad that I didn't as it is looking to be one of my best fields this year. I'm sure that the extra light and the excellent soil structure have more made up for the flea beetle damage. I look forward to seeing how it yields compared to the other fields. It may just prove the theory that lower rates are the way to go!

Polish farmers were impressed with Pro-Til's singling and seeding depth accuracy.

Drilling Down To The Best Method Of Linseed Establishment

April 18, 2017

It would be fair to say that linseed has become an essential part of the farm's profitable crop rotation and an indispensable tool for controlling blackgrass. This year, we've used it as a break crop again and just finished drilling it earlier this week.

No rain for nearly a month gave us plenty of confidence to delay the drilling until the ground was really warm to get the seed away quicker. Coupled with plenty of surface residue to retain moisture and brilliant soil structure awarded by strip tillage, this has given us the absolute optimum conditions for spring crop establishment.

There's more than one way to make a bed (pardon the pun!), and this spring, we've used both the Rezult straw rake and the Pro-Til 3T drill to establish linseed. Proven and tested, both methods produced brilliant results in previous years but we have never tried them side by side to see how they pair up at different growth stages; this year's head to head trial is intended to do just that.

We drilled linseed into a field with not one but two previous crop residues. Last year's wheat stubble is still standing proud and you can still see the died-back radish which had been inter-row drilled behind the wheat straight after the combine. The radish grew fast keeping the ground covered over the winter months and mopping up the sunshine; it got killed just as quickly by January frosts, allowing me to clean up the field with glyphosate before drilling to get rid of any grassweeds that may have been present. This left us with a perfect canvas to go into with plenty of surface residue, ample moisture and nutrient-rich, friable soil structure after the radish.

Method 1. One pass drilling with Pro-Til

Soil is king on my farm and everything I do is aimed at preserving it – from minimising disturbance and reducing farm traffic to stubble retention and cover cropping. To me, the fact that the Pro-Til 3T can go directly into previous crop residue in one pass, retaining all the moisture in the ground to the benefit of the crop, must be its main appeal.

Another reason I like the drill is that nothing is left to accident. Rather, every little feature from the front to the back end of the drill is designed to prepare the perfect seedbed. At the front, the discs cut the residue whereas the breaker legs do a fantastic job of cultivating a narrow strip so that the seed is placed into a target-drilled band of friable soil with plenty of moisture, without losing it elsewhere in the field. I also love the fact that the Pro-Til can band place fertiliser behind the leading tine and I was able to put 80kg/ha of Nitrogen just below the seed level to give the linseed roots the best start. The seeding leg gives brilliant seed-to-soil contact and accurate depth control, and I know I can expect even germination throughout the entire field.

Travelling at 10 km/hr, I can cover 3ha/hr with the 3m wide drill. It is, however, a true single pass system and once I've drilled it, the job's done.

Method 2. Establishing linseed with the Rezult harrow

Fitted with a Stocks seeder attachment, the Rezult is not just another straw harrow, and I've been using it to establish linseed for a number of years with great success. All you have to do is go across the field twice to get an even coverage of the seed, followed by the paddle rolls the next day. Simple.

I apply 25 kilograms of seed per hectare at each pass which gives me the total seeding rate of 50kg/ha, the same seeding rate as the drill. Whilst the harrow does a brilliant job of incorporating the seed into the top tilth, the paddle rolls finish the job by ensuring a smooth, well consolidated seedbed.

The great thing about the Rezult is that it's a lighter bit of kit and, combined with a tractor on floatation tyres, it opens up the opportunity to start drilling a couple of days early.

The set-up is simple and I can get the job done quickly – yet with very little disturbance to the ground. Covering a 7.5m width, I can motor at 20km/hr which is double the output of the drill, even when going over the field twice.

However, unlike the Pro-Til drill, the fertiliser has to be applied with a spinner as a separate operation. The application rate for compound fertiliser is 180kg/ha. You're also more dependable on the rain to give the seed a good soaking which can be a bit of a gamble.

Front discs and leading tines prepare the perfect seeding strip, complete with a dose of fertiliser for a quick root boost.

The Pro-Til's seeding arm ensures accurate depth and excellent seed-to-soil contact.

A quick and simple method of establishing linseed, the Rezult also allows you to go drilling earlier.

The Pro-Til's seeding arm ensures accurate depth and excellent seed-to-soil contact.

The Verdict

For us, both systems work brilliantly for different reasons. The Pro-Til is the master of moisture preservation, targeted fertilisation and precision seed placement to guarantee successful establishment. The Rezult is simpler and quicker to use, and causes less soil disturbance. This year we'll be watching the two systems more closely to see how the plots compare at different growth stages and, most importantly, if the method of drilling impacts the yields.

Regardless of the result, the real winner is the simplicity of the Mzuri system. We only have three pieces of crop establishment kit – the Pro-Til drill, the Rezult harrow and the Twose rolls – giving us two seeding methods to choose from so we're covered for all eventualities.

Now we have plenty of experience with one pass drilling, we can say with confidence that Mzuri is the best system for spring cropping. Strip tillage and cover cropping have completely transformed our seedbed preparation. The secret to successful spring crop establishment is plenty of moisture and good soil structure which you do not get with multiple pass systems. Blanket cultivation just doesn't make sense. For me, it's crazy.

Pictor Fungicide Application To Prevent Sclerotinia

April 20, 2017

With the linseed drilling complete, I swapped the harrow for the sprayer to apply Pictor fungicide onto our winter rape against sclerotinia. Farm agronomist advised me it should be applied at 0.5 l/ha with the oilseed rape at an early flowering stage to ensure effective protection. I'm told the risk of disease will increase with the weather warming up further and experts say sclerotinia could cause up to a whopping 50% yield loss on affected plants if left unattended. Needless to say, I was very keen to keep my plants in tip top shape, to the extent that I even roped my daughter Phoebe in to help me!

Taking after her father, she loves the tractor cab too and the job took less than a full day to complete between us. I hope the crop will continue to thicken out and look beautiful. It has really had an amazing start this year, despite the fact that we've had no rain whatsoever for nearly a month which is all testament to strip tillage.

If only all tractor drivers were this happy!

Applying Pictor fungicide

Phoebe is not shy of an early start to keep the bees happy.

The rape is looking amazing throughout the field, whichever way you look at it.

The Difference Moisture Makes To Establishing Linseed

May 10, 2017

Keen to drill down to the best method of linseed establishment, this spring we have drilled the crop with our Pro-Til striptill drill and the Rezult harrow side by side to see how they compare. Both trial plots have come up well but with the long spell of dry weather continuing, it's the Pro-Til that's coming out on top. Here's why.

The Driest Spring In My Living History

We tried the two establishment techniques last year and, it must be said, both methods worked well. The difference was that we had rain within two days after seeding, allowing the seeds on the surface to germinate and get the roots going.

This spring has been like day and night in comparison. Worryingly, we've hardly had any rain for near on three months in Peopleton with the second half of February not registering any measurable amount of rainfall and March and April being bone dry. As of today (10th May), we're still holding our breath for a bit of rain.

Drier weather is nothing new here as the village is situated in a rain shadow and is sandwiched in between Malvern and Bredon Hills, and rivers Avon and Severn. We good-humouredly call it the Peopleton umbrella; however, this year the situation is beyond a joke.

The Recipe For Reliable Spring Crop Establishment

In this year's dry conditions, the difference in linseed establishment between the harrow and the drill is very notable.

We drilled both trial plots into overwintered wheat stubble and sprayed off the cover crop which kept the ground moist. The difference was that the Pro-Til caused minimal soil disturbance and placed the seed at accurate seeding depth straight into moisture.

Whilst the Rezult harrow did a decent job, it was more reliant on the rain that never came and the seeds on the surface had to fight hard for survival.

Good seed-to-soil contact awarded by the Pro-Til's dual reconsolidation feature is another big plus which was lacking with the Rezult seeding system. Residue and air around the seed prevents it from absorbing moisture from the soil, resulting in failed germination or stunned growth at the best.

The reconsolidation and the seeding depth accuracy of the Pro-Til ensured a very even establishment with a high percentage of seeds germinating over a period of just one week.

Conversely, with the Rezult seeder, the germination is rather patchy and spread out over a longer period of time with some seeds yet to come up. This was due to the fact that the seeding depth varied greatly and the seeds were fighting hard to find moisture.

The formula for successful linseed germination and, quite frankly, any spring crops, is seemingly simple:

Moisture Retention + Seeding Depth Accuracy + Soil-to-Seed Contact = Even, Reliable Establishment.

Linseed drilled with Pro-Til 3T striptill drill on 18th April. Photo taken on Day 22 (10th May). The establishment is nice and even despite no rain. Note: the dry weather has not affected establishment due to access to below-surface moisture.

Linseed seeded with Rezult harrow on 10th April. Photo taken on Day 31 (10th May). We've had no rain since the date of drilling. Note: despite a 10 day head start on the Pro-Til drilled crop, the Rezult establishment is less even and many seeds are yet to germinate – now desperately relying on good rain.

Worcester University Impressed With Soil Structure At Springfield Farm

May 11, 2017

Springfield Farm welcomed some visitors from the University of Worcester last week who came to examine the farm's soils and learn more about single till processes compared with conventional tillage. We had the pleasure of welcoming Phil Mullington, Lecturer in Soil Science, his colleague Dr Diana Dine, Senior Lecturer in Environmental Science, and nine Environmental Science students in their second year.

Strip Tillage Has A Massive Impact On Soil's Structural Development

We've worked together since 2012 and Phil has seen our soils improve year on year as the ecosystem developed. He says that the positive changes to the soil structure on farm are now visible by the naked eye and can be easily detected by feel.

Our Evesham series soil, which is heavy and naturally not prone to developing a good structure, now has an improving crumb structure since us switching to the Mzuri striptill system, according to Phil.

Moisture Is Key To Strong Root Development

The visitors were particularly impressed with the soil's ability to retain moisture, which is testament to its good structure. Considering that we barely had any rainfall for nearly three months and have no irrigation in place, the soil still feels and looks moist.

Phil and his crew were particularly fascinated to find that even the upper fields, which are naturally draining and would be expected to become quite dry considering this spring's drought, had the presence of soil water in the top layer. Heavy clay soils would normally dry out and crack but our fields had no cracking on the surface.

What's more, the students found that the samples of winter wheat and oil seed rape taken from various sites on the farm showed strong root development with many root hairs – an attribute of healthy and moist soils.

Earthworms Follow The Water

Samples of topsoil taken had a number of different earthworm varieties present which Phil was not expecting to see, given the lack of rainfall.

Large worm populations is yet another indicator of upper surface moisture and a well-developed ecosystem. In my opinion, leaving straw in the fields is a small price to pay for an army of soil health workers.

I was delighted to have the opportunity to talk about my farming experiences with a bunch of people who share my passion for improving our land. Over the years, I've learned a thing or two about conservation tillage but to hear that my visitors found the trip invaluable for their own education was extremely humbling.

University visitors were impressed with the fine root structure of our crops.

The "field lab".

Could Soya Be The Next Big Thing In Spring Cropping?

June 6, 2017

It was not my intention to plant soya this spring but a simple operator's error when seeding linseed meant I had to start again. Perfect for its later drilling date, soya is said to be relatively easy to grow and combine which is encouraging news for a complete soya novice like me. It's a nice break crop with good chemistry for grass weed control and a brilliant nitrogen fixing ability. With high market demand and £400 per tonne on offer for non-GM soya, it sounded like a very reasonable Take Two for this year's spring cropping.

The Flap Flop

We've a hundred acres of linseed trials this year which were established with the Pro-Til drill and the Rezult harrow for comparison. The Pro-Til drilled crop came up particularly well thanks to the preserved moisture during a bone-dry spring and most of the Rezult broadcasted fields were starting to catch up nicely too once we finally – and gratefully – received some rain.

To my disappointment, the last field and a half I had seeded with the Rezult harrow was looking like a giant patchwork quilt! The calibration flap on the Stocks seeder must have dropped down when I hit a great big tramline at speed which meant all the seed was dribbling out in the middle of the harrow and none on the sides. I'll put my hands up and admit I should have followed the manual and regularly checked the harrow every few minutes – well, I didn't. It's a costly mistake I'll only make once!

With the affected fields looking like a chessboard, I made a reluctant decision to spray the linseed off as it wouldn't have been commercially viable. Just as well – as I decided to give the soya alternative a try which loves a later start (end of April – early May) and a clean field to go into!

Soya And Striptill Make A Perfect Match

I drilled my soya with the Pro-Til 3T striptill drill on 13th May at just 100kg/ha. The three-metre drill was fitted with nine new style dual shoot coulters.

I believe the recommended seeding rate of 135-150kg/ha is way too high for strip tillage and is intentionally higher to account for the lower germination percentage with conventional systems.

According to Soya UK, the biggest danger to soya is a dry seedbed and, in my opinion, any additional cultivations prior to seeding go against this warning as they inevitably lose moisture. Strip tillage, on the other hand, is brilliant at retaining it which means the seed can be placed straight into optimum conditions.

What's more, soya loves fine, firm seedbed and an even drilling depth. I'm 100 per cent confident that the Pro-Til ticked all the boxes here too: the breaker point prepared a strip of lovely, friable soil which was reconsolidated to remove air pockets. And, with the seeding depth controlled hydraulically and independently on each individual seeding arm, the drilling accuracy on the Pro-Til drill is second to none.

The crop germinated very evenly around 10 days later and was looking strong. It is a concern that I missed the opportunity for pre-em application as the rain and wind paired up to mess up my plans. I had to settle for post-emergence herbicide which was applied on 31st May and has unfortunately left the soya looking totally sorry for itself. I hope this will not set me back too much as I'm banking on a high return to claw back for the lost linseed!

High Returns

You may say I'm a little ambitious but I'm hoping for a 2.0 – 2.5tonne/ha yield with strip tillage. The crop was drilled into well-structured ground and came up extremely evenly due to the seeding depth accuracy on the Pro-Til. With a bit of warm weather, the crop should get away quickly and there's no reason why I shouldn't be going for a 50% increase on conventional yields.

Soya is a new crop to us and I'm as intrigued as you are to see how it goes. It remains to be seen if it's going to be the next big thing in spring cropping but one thing is clear – as spring cropping gains momentum, so will strip tillage. Watch this space!

With its later drilling date, soya saves the day.

The last linseed field looked like a chess board due to the calibration flap opening on the Rezult's Stocks seeder during drilling.

Soya crop drilled on 13th May. It emerged beautifully just 10 days later. Post-em herbicide applied on 31st May. Photo taken on 6th June.

On closer inspection, the post-emergence application has left the crop looking very sorry for itself. Photo taken on 6th June.

Pre-Cereals Crop Update

June 12, 2017

Following an exceptionally dry start, the long-awaited rain finally arrived mid-May – in abundance. Whilst strip tillage did a cracking job of retaining the moisture, the heavens couldn't have opened a day too soon as everything on the farm seemed to breathe a big sigh of relief with every passing day that brought a good soaking.

As thankful as I was for the rain, I am now starting to get a little anxious as the wet and windy weather is persisting well into June and is causing a total havoc as far as my spraying programme is concerned. At times like this, I do wonder whether I could have opted for a job with less of an X-treme Factor.

On the upside, the crops are looking really well and, if it continues to rain, at least I won't feel bad about spending a day or two at Cereals where Mzuri are launching the Pro-Til Precision drill and the Razorback hedgecutter with a difference – well worth a visit!

Most of the farm wheat was drilled with the Pro-Til fitted with new style broadband coulters. Crop looking tidy with nice stems and long ears well into flower. Photo taken on 11th June.

The trial plot drilled with the Pro-Til on narrow shoot coulters is dancing in the wind. Not a single grassweed in sight due to wider spacing granting great chemical contact. Photo taken on 11th June.

Wheat

The arrival of rain mid- May was really appreciated by the wheat which is looking great. The flag leaf came out followed by the ear a few days later which started flowering at the end of May.

I managed to squeeze in a T2 fungicide flag leaf wash but the T3 Firefly ear wash is still in the chemical store waiting for the wind to drop! Fingers crossed for better weather this week.

The plot drilled with the single row coulter is looking particularly healthy due to the additional light interception and air movement between the rows. Although this set up may not be the first choice for drilling wheat, the wider gaps make way for superb grassweed control and I would highly recommend it for tackling black grass issues.

Flag leaf fungicide and broad leaf killer was applied on 22nd May. Hasn't the crop moved on since!

OSR

The rape is, too, looking good, even if I say so myself. It had naught done to it in May and it was nice to have a crop I didn't have to think about. If only farming was this easy all the time!

It's already starting to turn and the beautiful yellowing canopy is showing promise for a good yield. The heavy winds and rain have started to lean the crop but it's still holding its own.

The rape is well on the move and I'm hoping for a good yield this season.

Linseed

Both the harrow and drill-established linseed is looking strong, particularly now that we've had some rainfall. It's had an herbicide and nutrient cocktail on 22nd May when the crop was still below 15cm (Eagle at 0.028l/ha, Maya at 0.466l/ha and Lepton at 0.466l/ha).

Luckily, nine days later, I had a narrow window to put Centurion Max on to suppress the grassweeds and it's already having a visual effect.

Today (12th June), the crop has already reached 300mm and is about to flower.

One thing I love linseed for is the efficacy of the available chemistry for grass weeds which makes it a particularly great break crop from wheat. Centurion Max is a useful arsenal herbicide in our weed control strategy.

A parting between rows of linseed established with Pro-Til drill demonstrates how effective Centurion Max has been on grass weeds. Photo taken on 11th June. The crop has grown unrecognisably since last photo on 31st May.

The wind's leaning the linseed crop established with the Pro-Til drill. The crop has virtually caught up with the harrow-established linseed trial plot which had been drilled 10 days earlier, thanks to the drill's ability to go straight into moisture.

Linseed established with the Rezult harrow with Stocks seeder 10 days prior to the Pro-Til drilled crop is now starting to flower. Photo taken on 11th June. The Rezult-drilled crop initially had to fight harder to reach moisture but was luckily spurred on by the arrival of rain.

A cocktail of Eagle, Maya and Lepton being applied on 22nd May.

Soya

The soya went in on 13th May and came through nicely, albeit being knocked back by the post-emergence spray on at the end of the month. Luckily, the chemical doesn't seem to have hit it too hard and the crop is pulling through.

As a complete soya novice, I don't think I've had my fair share of beginner's luck. The weather has not been particularly kind, we had the post-em application worries and, to top it all off, the pigeons have taken a liking to the field meaning that I've been visiting the crop more than I'd ever wish to!

And whilst soya has been a steep learning curve in my first year, I'm hoping that the extra work I had to put in will bear fruit in the end. Time will tell.

Linseed being sprayed with Centurion Max on 31st May. It's incredible to see how much the crop's grown in just nine days!

It's encouraging to see that soya is recovering nicely after the post-em application less than two weeks ago. Very relieved to see new healthy leaves coming through.

Pre-Cereals Crop Update

July 7, 2017

While going about my routine jobs for June, I was quietly pleased with how well most of my crops were looking. Wheat ear wash on, herbicide applied, headlands tidy and I even have a bit of time for a social life and a pint or two before the crops fully ripen.

Soya enjoying the sunshine.

Early morning on 12th June. Winter wheat is being treated with a T3 ear wash.

Winter Wheat

All winter wheat had an ear wash on 12 June to prevent ear disease (Firefly fungicide at 0.85lt/ha).

The wheat is generally looking good and I look forward to seeing how it measures up compared to the previous years.

Linseed

This year's linseed has turned out to be a cracking crop, given the exceptionally dry spring that we had. I'm particularly pleased with the Pro-Til seeded fields which look spectacular throughout. The harrow-seeded linseed is not far behind either, although the establishment is a little patchier due to surface seed struggling for moisture.

If I had to relive the spring again, I would drill all of my linseed with the Pro-Til. Harrow establishment has a valid place but, having had a chance to compare it with the Pro-Til side by side, I would only recommend seeding with the harrow into moist conditions. Yes, hindsight is a wonderful thing indeed.

The crop had an application of Centurion Max for grass weed control on 16th June, followed by a dose Fathom fungicide at 1 litres/ha two weeks later. I'm told Fathom is needed for the suppression of disease such as botrytis and alternia; an added bonus is that it will also increase the crop's standing ability.

Early morning on 12th June. Winter wheat is being treated with a T3 ear wash.

Oilseed Rape

The rape has been virtually left and forgotten last month. Most of it was drilled with the Pro-Til 3T in its full striptill mode which produced a really even establishment and a strong looking, weed-free crop. It's maturing nicely and I estimate that Mother Nature will have finished what she'd started by the end of July at the latest.

We have one small field which, unfortunately, is slightly below par. It was direct drilled a couple of weeks late as an experiment. Delayed drilling meant the crop didn't get away as quickly and fell victim to slug and pigeon attack. Although it recovered remarkably well, we have a few thinner patches where the weeds have won. Reluctantly, I've taken the decision to dessicate this field to ensure a clean crop and so 3.5 litres/ha of glyphosate (Azural) with 0.5lt/ha wetter (Spryte Aqua) went on at the end of the month.

It must be said, I'm not a huge fan of desiccation and think it should only be used as a last resource rather than a blanket approach. Nature always does it better and the rest of the fields will be allowed to ripen naturally.

A still, sunny evening on 30th June. Spraying off oilseed rape.

Soya

I'm relieved to report that the soya is recovering remarkably well after its post-em set back at the end of May. It's coming along nicely and is looking pretty tidy, all things considered. The warm summer weather has certainly helped.

Reggie is trying to work out who's growing the quickest.

Headlands

We have a "zero tolerance to weeds" policy on farm and good headland management has a huge part to play in winning the battle against weeds.

We have extra wide headlands with four to five metres left for turning and hedgerows which allows me to minimise compaction on the fields. It's a small price to pay in return for a crop that is even from hedge to hedge, and the higher yield around field perimeters soon compensates for the extra margin left.

I only mow a metre and a half of the headland nearest to the field. This gives me a sterile strip that prevents the grassweeds from creeping into the field and keeps the weed seeds out of the crops.

I've gone round all my fields at the end of the month, including a small woodland which I set aside for the wildlife to enjoy.

With all the jobs ticked off the list, I'm off to have a little breather before it's time to get going again. And it won't be long until harvest time!

The woodland headlands are getting a quick tidy up

Make hay while the sun shines!

OSR Harvest At Springfield Farm

July 25, 2017

A few weeks early this year, harvest is now under way. We first rolled out the combine into rape on 14th July. Less than a week later, it's all wrapped up and I've got a wide smile on my face. We've broken our yield record this season – here's how we did it.

Three methods of establishment

We planted three different field size trials in Autumn 2016 to see which method returned the best yield:

The start of the rape harvest going well.

Rape Into Wheat Stubble In Full Striptill Mode

We inter-row drilled the first two fields (16ha) straight into standing wheat stubble. The area was drilled with the Pro-Til 3T in full striptill mode. The crop went into nice friable soil prepared by the drill's breaker leg and straight into moisture preserved by the surface residue. The front coulter leg did a great job of placing a band of fertiliser below the seed to get the roots going quickly.

These fields have averaged a very respectable 5.2t/ha which has helped us to maintain our high long-term average. I put it down to good seedbed preparation and improving soil health.

Rape Into Wheat Stubble In Direct Drill Mode

Next, we've got 8ha drilled with the Pro-Til 3T minus the front legs to replicate zero tillage as closely as we could. This means the machine hadn't generated the mini tilth zone you'd normally get with the breaker leg, although it still applied the same rate of banded fertiliser on the surface.

Despite it being one of our best fields in terms of organic matter, the crop struggled throughout the year but we took the decision to treat it the same as any other field to ensure a fair comparison. The trouble with the no-till method was that it produced hardly any soil disturbance – way too little, if you ask me – which left it vulnerable to slug attack. The crop was slower to get going and fell victim not only to slugs, but pigeons and weeds too.

Having said that, we were surprised that it did pull through and we managed to take off 3.4t/ha which is still more than what we used to get when ploughing – all thanks to good soil structure supporting the crop. I do think that zero tillage can work in the right conditions but it sure in not up for the job on my heavy soils. The lack of nursery seedbed has stunted the growth and I see it as an unnecessary gamble. Not only it hasn't paid off, the experiment has cost me well over 1t/ha compared to the first trial in identical conditions with the added advantage of the front leg working that seedbed. I joked I could have put some of that money towards more bangers to fend off the pigeons; Mrs Lole wasn't amused as she thought "bang goes another holiday".

Rape Into Bean Haulm In Full Striptill Mode

The last field was seeded in full striptill mode straight into bean haulm (that's right!).

Unconventional, I know, but here, we were running two new experiments. Firstly, we were putting the new coulters to the test on different row spacings. Secondly, we were trialling the feasibility of profitable two-year break cropping.

We do believe rape after beans makes the best use of available chemistry for controlling blackgrass but what's equally attractive is the prospect of it giving me an even higher return than wheat.

My Pro-Til 3T made light work of the thick residue.

It transpires, friable seedbed, booster fertiliser plus stacks of fixed nitrogen sets oilseed rape on fire (figuratively speaking, of course!). The plants were off to a quick start and soon developed into strong plants with stalks that would put sprouts to shame.

The 10-hectare field was divided into three trials plots with different coulter set ups: the Mzuri standard spacing of 330mm, double row spacing of 660mm and a narrow 165mm spacing achieved with a dual coulter kit.

All configurations have done very well, looking pretty healthy throughout the year.

A pleasing weedfree sample coming off at 8% moisture!

The narrow spacing showed most promise throughout the winter but as spring came along, the extra wide 660mm spacing took the lead thanks to better light interception. By harvest time, it was apparent that the wider spacing had produced a much stronger plant that stayed upright. In comparison, patches of the narrower spaced plots were buckling under the weight of the promising yield that the thinner stalks could no longer hold.

Across the field, we broke our farm record and harvested close on a whopping 5.7t/ha by trailer weight! While I'm very pleased, I'm quietly not surprised. I always swore by strip tillage, and it's proven its worth.

The Secret To Profitable Farming

As someone who's been there and done it all (that includes ploughing, zero till and strip tillage, of course), I think I've perfected the recipe for record-breaking yield down to a tee. Want to know my magic ingredients?

The best part of the direct drilled field.

Left part of the field: the crop buckling under the weight on narrow row spacing. On the right, rape standing tall on wide spacing. A field had been drilled with Pro-Til 3T in full striptill mode.

The worst part of the direct drilled field looking patchy. We had problems with slugs, pigeons and weeds as no front was leg used to prepare the seedbed. Why gamble?

Extra light interception produced thick stems and strong roots. The tap root snapped off but the lateral roots still visible. What's interesting is that they always reach for the natural goodness of the untilled soil.

The Secret To Profitable Farming

July 26, 2017

I was really pleased with this year's rape yields setting yet another record high. Drilling down to the reasons of our success, I have identified seven contributing factors that bring everything together.

Here's my magic formula to profitable farming:

1. Well-structured soil. Seventh year into my strip tillage, organic matter levels have doubled and reduced traffic has eradiated compaction. What was previously heavy Evesham Lias Clay is now a well-aerated, friable-texture soil.
2. Moisture. Surface residue is great for moisture retention, and the more of it, the better. The high beam clearance on the Mzuri Pro-Til allows us to drill into huge amounts of straw. Not only does it save a nice little sum due to one pass drilling, it seals the moisture in to help the crop get away quickly and evenly.
3. Light interception. I've proved to myself time and time again that the wider row spacing on the Pro-Til produces a healthier, stronger and higher-yielding plant.
4. Booster fertiliser. Look out for a drill that can place the fertiliser below the seed to give the roots a boost. My Pro-Til 3T with a dual hopper does this nicely and the fact it does it in bands saves me a small fortune too.
5. A front leg with wing to produce a bit of tilth around the seed. Make sure the seed is always placed bang in the centre of the tilled strip. If your drill can't do this, you'll be losing out. The Pro-Til has a nifty side-to-side pivot on the seeding arm to achieve central seed placement; this is why my fields look even from edge to edge, including the headlands.
6. Seeding depth accuracy is very important for even germination. A drill that can exert pressure hydraulically onto individual coulter arms will always do it best as the seeding depth will always be the same, even in undulating ground.
7. Good seed-to-soil contact is recognised by all experts as being paramount to strong and even crop establishment. Air pockets or contaminant contact is bad news for the seed – and for the bank account, particularly when you're talking oilseed rape, – so go for front leading discs to clear the residue and for a machine with good reconsolidation. A good press wheel following the seeding coulter could literally be a life saver when it comes to dodging the dreaded slugs.

Good soil structure and lots of straw is all at the heart of what we do.

July Crop Update

August 3, 2017

July has been an unusual month here at Springfield farm. We started on a high and finished our record OSR harvest in record time with equal optimism for rolling out the combine into the wheat soon after. Three weeks later we're twiddling our thumbs staring into the grey drizzly sky.

Soya is looking well but could do with some sunshine.

Soya

That being said, the upside to the wet weather is that the Soya is looking well, although it would really benefit from a good dose of sunlight.

Pods have formed all the way up the stem in mass; who knows how we're going to combine them! That'll make for an interesting farm diary installment.

Pods are forming up the length of the stems.

Reggie's feeling a little left out now that the soya has overtaken him in the growth stakes – it certainly has shot up.

Winter Wheat

A quick field walk confirmed my suspicions that the wheat is ready to go and starting to lean, but the wet weather has put a stop to play and I'm itching to get going.

It looks to be another cracking yield and I'm certainly glad we're growing feed not milling wheat otherwise we really would be panicking.

Yield looks to be promising but the wet weather is causing it to lean in places.

Linseed

The linseed is looking encouraging and overall is a very clean, healthy crop. It's beginning to change and it won't be long until we are thinking about desiccation.

The linseed is just beginning to turn and looking to be another successful crop.

OSR Stubble

We have a "zero tolerance to weeds" policy on farm and good headland management has a huge part to play in winning the battle against weeds.

We managed to time our OSR stubble raking perfectly this year getting in straight after the combine and with the rain setting in minutes after putting the rake to bed. This combination, along with the fine tilth produced by the rake, has given us an incredible volunteer germination rate, with grass weeds germinating nearer the headlands. I'm optimistic that second time around there will be few seeds left to germinate! The volunteers and weed seedlings will receive an application of Glyphosate as advised by our Agronomist David, to knock them out prior to drilling.

Most excitingly however, is the sheer number of worms that are clearly visible when inspecting the soil. The fine tilth has accelerated the decomposition of straw and the quick germination of seeds and wet weather has kept the moisture in providing the perfect environment of worms. Lightly parting the surface residue reveals tens of worms in each handful of soil, around 20cm in length, although they are a little camera shy!

The mechanical destruction of slug habitats from the stubble rake has appeared to have done the trick. Along with help from the beetles I have seen hardly any slug activity which is a promising start, proving that letting nature do its thing often reaps rewards.

The stale seedbed preparation has provided the ideal environment for worms and they can be seen in mass just below the surface.

OSR volunteers have germinated in their mass, I'm surprised by how much would have been left behind by the combine!

Winter Wheat Harvest

August 17, 2017

It's been another busy start to the month. With rape harvest completed in July, it was the wheat's turn to bow to the combine.

We started combining on 7th August and finished ten days later with yields coming in just above farm average on strip tillage. It's been a real snatch start due to the weather but, armed with patience and determination, we managed to get through it with very little drying needed. Wheat after oilseed rape fetched 12.5t/ha whereas corn after linseed only did around 9t/ha – admittedly, through to the fault of my own. It transpires, the second application of Nitrogen has totally skipped my mind in the midst of Cereals distractions and holiday preparations in June.

We normally apply 240-250 units of Nitrogen onto our wheat; unfortunately, the wheat after linseed only had 180 units with the remaining 60 being discovered by my agronomist in the shed post factum. Who could have thought that two bagfuls – next to nothing in cost – would drop my yield by a tonne and a half? An expensive lesson to demonstrate the link between Nitrogen application and yields, and one I will remember!

All in all, however, I can't complain about this year's harvest. We have maintained our wheat yield averages and may well have surpassed them if not for my Nitrogen oversight. Considering the limited amount of sunshine we had, it's nothing to sneer at!

One of the six different configurations is being put through its paces

Soya

29th September 2017

The leaves started to fall early September and we applied Glyphosate at the rate of 3l/ha to clean up weeds, particularly grass weeds which have been a problem from an old muck heap previously tipped on the field – a lesson well learnt. The Glyphosate has been effective and now we are playing the waiting game. On closer inspection, the now warm coloured crop boasts a large number of pods with 3 beans each on average.

The beans are still a little soft but going in the right direction. Next year we want to get a better understanding of available chemistry for this crop so that we're better prepared and can tackle weeds earlier in the season. For now though, we're eagerly waiting for a few days of sunshine to give it the final push and then, we might, think about combining it! So watch this space.

Soya somewhere near ready for harvest - Desperately needs sunshine

Harvest Round up

13th October 2017

Linseed Harvest

Later than planned, the Linseed is in, but not without its difficulties. With such a fibrous crop our combine struggles to cope, making for a two-step forward one-step back approach to harvest! This, combined with the less than perfect weather meant harvest was a slow and laboured affair. That being said, we're happy with the sample and it'll be leaving the farm shortly.

It has come as no surprise that we will not reach last year's yield. Due to the wet weather and the stop/start harvest we lost a lot of linseed out of the back of the combine. Across the board we achieved 2.5t/ha which isn't all bad but less than we had hoped for. However, we are impressed with the quality of the sample, achieving over 45% Oil Basis, less than 2% Admixture and 8.5% Moisture. Perhaps it really is a case of quality over quantity!

Linseed harvest wrapped up for another year

Harvesting Soya

Heavily anticipated, and perhaps slightly feared, we've started combining the Soya! Running the header close to the ground to try and save as many of the low pods as possible, we cleared the majority trouble free. The pods were brittle and separated well, to leave a clean sample in the tank.

We're not sure what to expect from this harvest and time will tell as we tackle the last field. It certainly hasn't been an ideal year for growing Soya, with the cooler air and lack of sunlight. I'm quietly impressed with this crop considering we almost killed it with a Post-emergence herbicide. With the low stature of this year's crop, I estimate that we will lose 25% of the pods to the knife, and have yielded 1t/acre with an aim of 1.5t for next year.

There are two take home messages I've learnt from this season. 1, to roll the ground after drilling; stones have been an issue with running the header so close to the ground, and a flat seedbed is vital for good Soya production. And 2, to get a better understanding of the available chemistry for the crop to make the most of its potential.

Harvesting the Soya has been a relatively smooth affair

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