

Success in flexibility



Sustainable Solutions

Taking a flexible and adaptable approach to farming has helped Ed Walton to successfully manage multiple challenges, proving the area of land doesn't always matter, but the way it's farmed does. CPM speaks to him to learn more.

By Melanie Jenkins

Adapting to the constantly changing farming landscape can pose a challenge but one farmer has become more sustainable while remaining flexible in his approach, attributing elements such as variable rate adoption and careful variety selection to his continued successful operations.

Farming as J. W. Walton and Son, at Underhill Farm in Winderton, near Banbury on the edge of the Cotswolds, in both an Area of Outstanding Natural Beauty and a conservation area, Ed Walton operates the predominantly arable enterprise and Agrii iFarm alongside his father.

The family has been working the land since 1917 when Ed's great grandfather took on the tenancy. "The vast majority of the land is on the Marquiss of Northampton's estate, consisting of around 190ha as well as contract work on several neighbouring farms," explains Ed. "We're largely working on Grade 3 medium soils, but it can vary from sand right through to heavy clay.

Cropping consists of wheat, spring barley, oilseed rape and peas, with the OSR and peas grown as break crops."

One of the major adoptions for the farm has been a variable rate approach. The journey started in 2014, the same year that Ed was involved with Agrii's iFarms project, when he began implementing variable potassium (P) and phosphate (K) to his system. "Introducing this was as much to do with cost saving as it's about doing the right thing, but overall the aim is to be more efficient."

Since then he's introduced variable rate seeding and nitrogen to his system. He says implementing the former has meant investing in a newer drill and luckily he was able to buy a 4m Väderstad Rapid from a neighbour three years ago.

Variable rates

"We're on quite steep, hilly land and with the range of soil types it means it can be hard to grow even crops. I don't think applying variable rate seeding has helped me save on seed, but has instead meant we've drilled more seed where it's required and less where not as much is warranted."

When he first started applying P and K variably, he didn't have GPS on the farm so he purchased a new spreader with GPS incorporated. "Impressively, the spreader and GPS paid for itself in two years which demonstrated just how much variation there was in the fields. I've since bought a tractor with GPS and linked it all together with the variable rate seeding."

Soil testing has been integral to variable rate applications on the farm, explains Ed's agronomist, Sarah Hookway of Agrii. "We soil test on the farm every five years and have created maps to work from. In addition, we've utilised green crop satellite imagery from Rhiza as well as using Ed's visual

“The spreader and GPS paid for itself in two years which demonstrated just how much variation there was in the fields.”

assessment of bad patches to work from."

During autumn 2022 Sarah and Ed worked with Agrii to introduce nitrogen scanning using DroneAg's Skippy Scout in his OSR crops. "We had the crop scanned that autumn and this was then followed up by another scan in the spring which allowed us to calculate variable rate nitrogen applications," she explains.



Ed Walton feels the best way to deal with unpredictable weather conditions is to have large enough kit on farm that it can operate quickly in small weather windows.

"The process was the first time for Ed but it has proved so valuable that we'll look to use it on farm again. It showed up a lot of irregularity in the field and as a result Ed applied a variable rate application of nitrogen in the spring which helped to even the crop out."

The latest addition to the farm comes in the form of a Massey Ferguson Ideal 7 combine which is due to be rolled out of the shed for the first time in the coming harvest. "This is a significant investment for us, but we bought our last combine in 2013 so it was due upgrading. Since buying the combine a neighbour has asked me to take on the harvesting on his farm, so it's generating more work before we've even used it," Ed explains.

One aspect of the combine that Ed is

looking forward to using is its ability to create yield maps. He hopes that this will allow him to determine not only the effectiveness of his variable rate applications, but will also mean he can better plan for future cropping.

Like many other farmers, one of Ed's biggest challenges has been OSR, says Sarah. "The farm has been fairly successful with the crop, due in part to planting in September after the higher flea beetle pressure in late August, but during the wet autumn of 2019 it completely failed. Conditions were so unfavourable that we weren't able to get the iFarm trial plots planted that year either, so instead of changing Ed's rotation, we planted cover crop mixes and turned these into trials and used them as a means to improve soils."

Ed feels the best way to deal with



Soil testing has been integral to variable rate applications on the farm, with tests taken every five years and used to create variable rate maps.

unpredictable weather conditions is to have large enough kit on farm that can operate quickly in small weather windows. "There's always a window you can get out in but you have to be prepared to get the work done when it comes along which can mean having bigger machinery to get the job done. Our investment in the larger combine ►

iFarm trials

Involvement in the Agrii iFarms project has helped Ed Walton finetune a more precise way of growing crops based around local information and specific insight into his own farm's climate and resources.

"For us, sustainability is as much about using the inputs we have available as effectively as we can, as it is about taking positive steps forward to protect the environment and wildlife," he says.

"During the near 10 years that we've been involved in the iFarms initiative, we've carried out trials on a range of topics including cover crops, spring cropping with both barley and peas, seed rates, nitrogen use efficiency, fungicide options and variety choice.

"All of which have informed how we approach the way we farm here, as well as providing a valuable resource for other growers in the area to benefit from specific local information through demonstration and trials days."

Agronomist Sarah Hookway points out that the comparison between Ed's farm and neighbouring iFarms in Brackley, Northamptonshire and Bromsgrove in Worcestershire, has delivered



During the period that Underhill Farm has been an Agrii iFarm, it's hosted trials on a range of topics including cover crops, spring cropping, seed rates, nitrogen use efficiency, fungicide options and variety choice.

particularly interesting results that reinforce just how much local growing conditions affect production and profits.

"Although these farms are only 20 miles away, results from the trials in Brackley have been very different from Ed's trials, particularly around variety performance and disease prevalence," she explains.

"The height above sea level produces a completely different micro-climate from Brackley with the noticeably wetter conditions meaning Ed really has to prioritise septoria resistance and control.

"It's a different situation in Brackley with yellow rust being far more of a concern there, so that 20 miles or so can really make a big difference to decision making and management. In addition, varieties that work the best for Ed, often don't work very well over there and this becomes very obvious when you look at all three of the iFarms in the area together."

Results from nitrogen trials carried out at Winderton have also shown some interesting results, adds Sarah. "We've undertaken a lot of work on best use of fertilisers, which is a subject close to most farmers' hearts with many looking at it as practical to cut down on nitrogen from both environmental and cost efficiency points of view.

"At Ed's farm we found that of three applications rates used, 270kgN/ha gave the best yields but in terms of return on investment, an application of 220kgN/ha gave the best economic response.

"Cutting back to 170kgN/ha dropped both yields and financial benefits considerably. So, there are obviously ways growers can reduce the nitrogen inputs to the benefit of both the environment and their overall productivity,



Sarah Hookway points out that the comparison between Underhill Farm and neighbouring iFarms has delivered particularly interesting results that reinforce just how much local growing conditions affect production and profits.

but, you have to be careful."

Ed highlights that the farm's use of variable rate nitrogen applications is very much part of their drive to use fertiliser more efficiently, as is their recent use of drone technology to estimate green area index (GAI) more accurately.

"It's early days but we're impressed by the concept of the Skippy Scout drone system Agrii use and it's something we can hopefully build more into the trials and the mainstream farming operation in the future," he says.

"I think that's the real advantage of the iFarms initiative — we can learn about new developments as they emerge and contribute to the overall Agrii R&D push, as well as getting some real regional knowledge that we can share with other growers.

"We can then finetune this even further with specific activities such as strip trials on our own land looking at varieties and how they perform in both treated and untreated scenarios. You add all of that together and you start to build some real insight into how we can farm in a sustainable, environmentally sensitive and, hopefully, profitable way in the future," concludes Ed.



During autumn 2022 Ed Walton and Sarah Hookway worked together to introduce nitrogen scanning using DroneAg's Skippy Scout.

► is partially justified because I know I'll be able to go out and get crops harvested in good time when the conditions are right."

A further tactic to keep operations running smoothly on farm involves kit maintenance during the winter months. "I hate breakdowns — they're an unknown cost and are time killers. I prefer to spend time over the winter ensuring kit is well maintained so that during the rest of the year we're minimising break-down and maintenance time."

This coming autumn, Ed plans to conduct his first organic matter and carbon audit on the farm. "I want to benchmark where we are now so we know where to aim next. But at the end of the day, any environmental changes we make will have to stack up financially."



The latest addition to the farm comes in the form of a Massey Ferguson Ideal 7 combine which is due to be rolled out of the shed for the first time in the coming harvest.

With this in mind, he intends to explore the Sustainable Farming Incentive (SFI) options later this year to see how they could work with the business. "I've been involved with previous schemes and where we're situated there's a lot of work with in terms of trees and hedges. The farm is 600-900ft above sea level so it's really hilly with a lot of diversity around us, so there's likely to be options we can implement."

Business evolution

Over the coming years, Ed hopes to continue to grow the business but is open-minded about how this will unfold. "We never stand still but the direction of travel can change. It could be that we're more involved with environmental schemes in the future but all it takes is for the world to have one bad harvest and we're all back to growing wheat, so I feel we have to be flexible in our approach to farming and to where government policy will take us."

He believes that sustainability means something different to each farmer but feels that it's unanimously about balance. "Pre-Covid and the war in Ukraine, the government's aim was to heavily promote environmental management, but now the thought process has evolved back towards food production. I feel that we can get a balance between both the environment and food production that means neither ends up in a vulnerable situation." ■

Sustainable Solutions

The leading agronomy development network

Extending from the tip of Cornwall to the Black Isle, north of Inverness, iFarms are part of the country's most comprehensive arable agronomy development network.

Hosted by forward-thinking growers, the network undertakes a range of practical trials and demonstrations overseen by Agrii agronomists in parallel with detailed scientific research delivered by R&D teams at Agrii's six principal Technology Centres.

Each of the 18 main iFarms has its own unique set of conditions, requirements and challenges which are reflected in the trial work undertaken and solutions explored and developed.

The current programme includes fully-replicated national and regional trials as well as field-scale demonstrations with the widest possible range of winter and spring wheat, barley, oats, rye, oilseed rape and maize varieties.

Specific studies are also conducted with a broad range of integrated crop management strategies including pest, disease and weed management, macro and micro-nutrition approaches,



and tillage regimes; cover, companion and alternative cropping options; and a variety of biological, soil improvement and environmental land management opportunities.

A full programme of meetings throughout the year and summer open days give growers the chance to experience the latest iFarm and Technology Centre work first hand — share in their most-up-to-date findings while discussing innovative agronomic thinking in thoroughly local contexts. Don't miss opportunities from the network this season — scan the QR code below to explore what's happening where and when, and link to 'invitation-only' events which might be of interest.

