



IN CONVERSATION WITH PAUL TEMPLE



Conservation agriculture is a labour of love for third-generation farmer Paul Temple. "We don't need to look at land in terms of acres, but in terms of the efficiency of the soil and its longevity. We may have lost some of our yield to obtain better conservation practices, but this creates better, more sustainable long-term production".

In the second instalment of our **In Conversation With** series, Rural Asset Managers Cameron McKillop and Guy Webb visit Wold Farm on the East Riding Estate, where no-till farming, and a deep awareness of soil health has paved the way for the farm's first insecticide-free year. Paul Temple speaks about the intellectual challenge of farming, data, engaging the next generation and the policies he'd like to see to support environmentally conscious farming practices.

Could you explain how you got into farming?

I was fascinated by agriculture from a very early age, like my father who took the farm on when he was 28. I went to the Royal Agricultural College at Cirencester and came back to work on the farm, now representing part of a third generation farming family.

Our approach to farming has changed with adapted government policies, including the EU's Common Agricultural Policy, but we have consistently reared livestock and specifically beef cattle throughout all these changes. It wasn't until the single payment scheme ended, when we lost a substantial amount of funding, that we pivoted as a business and reduced the number of cattle we farmed.

Six years ago knowing what the impact of Brexit would be, we looked to reduce costs and shifted to conservation agriculture principles of not moving soil, reducing synthetic inputs and phasing out insecticides. It has been a major learning curve, but I've really enjoyed it and have more confidence that we can make this work and keep it sustainable into the future.

Conservation agriculture is at the heart of your approach to farming. Was it a struggle, or a natural progression?

It's an interesting question, because in many ways we've been practicing conservation for generations. The livestock side of our farm is an intrinsic part of this approach to promote natural grazing particularly on land that cannot be cultivated. This forms one of the roots of long-term sustainability: a concept that even a decade ago before environmentalism became such an important part of our lives that I could see being intrinsic to sustainability and soil health.

Conservation agriculture is in our DNA, but the last few years has been about conscious improvement. In my formative years on the farm, I was re-writing how I think about and integrate conservation principles into our daily practices. It's an intellectual challenge in my head as much as a practical one in the field as I change soil management. This started

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with analysis of our soil health, particularly organic matter and everything else has followed ecologically. We have to make sure conservation agriculture thinking is applied in a more logical fashion, recognising the role of biology in enhancing soil and creating sustainable crop yields.

What are the ingredients that make up a long-term conservation strategy?

When we started, we didn't have the machinery we have today, and we couldn't penetrate as deep into the soil. As we moved to an all-arable environment we worked deeper and deeper in the belief that worked soil depth is critical to good rooting.

As an industry, we're realising that conservation agriculture is the way forward because of the long-term consequences of over working soil. If we don't act quickly to deal with the legacy of past cultivation practices, we won't reap the benefits of a more sustainable approach to farm management. We have always understood the importance of organic matter and returning manures to soil, but we didn't begin to start measuring it until about a decade ago. This still isn't the most precise measurement, but we began to appreciate that much of the manure oxidises in the soil under cultivation, losing some of its beneficial effect.

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Awareness of carbon and carbon accounting is important. This has always been a bit of an imprecise science, but you can map the direction of travel and particularly look at the level of fossil fuel energy and inputs required. That part is critical. We need to collaboratively share data within the agricultural community in order to build practical experience, where in the past we would've closely guarded that data from a commercial perspective.



How has your team changed during your transition to conservation agriculture?

Conservation agriculture as an undertaking was an intentional decision, but it was also driven by efficiency. The team has changed over the years but we're a family working farm and my wife, and I work together.

In agriculture it is a challenge finding good people and keeping them. We're fortunate to have two full-time staff and regular input from work experience students. It's important if farming is going to be a sustainable industry to find promising school and college leavers with an interest in agriculture, and to help train them up.

Where does technology fit into the mix?

Better cattle handling, in a way that makes it both faster and safer, makes a big difference to overall productivity and is something we have invested in. We also use GPS-guided tractors: my driving isn't as precise as a machine that can drive to 20mm accuracy on satellite guidance. These 2-5% efficiency gains build over time and really help overall productivity.

Our no-till approach means we don't use lots of heavy machinery. The cost of machinery is shooting up, which is a serious issue for the business case of farming. But this creates opportunities: by using fewer tractors, less horsepower, we can measure reduction of fuel use and man-hours, a meaningful gauge of environmental sustainability.

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What positives have you seen as a result of your farming principles?

By not disturbing the soil, we're seeing far more beneficial insect life than we would have done with our previous cultivation techniques. Disturbing a soil habitat clearly has consequences for overall biodiversity, and this is the first year that we haven't used a single insecticide.

We don't need to look at land in terms of acres, but in terms of the health of the soil and its longevity. We may have lost some of our yield to obtain better conservation practices, but this creates better and more sustainable long-term production and can increase margin through reduced costs. We are at the beginning of our understanding in the role of fungi and bacteria in long term sustainable farming practice.

Are farmers rewarded at a national level for going above and beyond to support environmental conservation?

We're seeing genuine and serious challenges in realising the picture for agriculture after Brexit. This should have been an opportunity to be bold and innovative, through bodies

like DEFRA, but the government hasn't made the process easy or rewarding and the current subsidy systems are very inflexible. It is a tragedy if we continue to miss this opportunity, as we could reward people with good biodiversity habits, who have made environmentally positive investments, and ensure they keep doing it to secure the sustainable future of British agriculture.

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You have done a lot of travelling through your work. What could Britain learn from other countries?

I'm slightly concerned that we're suffering from an 'island mentality'. We are losing awareness of what's happening in Europe and the wider world, where many are living in a more real-world environment where food forms a bigger proportion of living costs.

We need to have a sense check of our sensibilities. It's important that we are a part of a bigger supply chain. We can play to our strengths and facilitate free trade to be more competitive. We're in a global market and globally connected, particularly after Brexit, and that's an opportunity British agriculture can seize upon as a large net importer.

How can the Church Commissioners support you in furthering conservation agriculture?

The most important thing for us is to continue learning about soil health together. We need to look at finite components and incremental marginal returns. The bonus is more carbon locked in soils, creating better outputs for environment and yield. You could make a case for scrapping rotation and making more money as a business from

continuous wheat, but you risk exhausting the land a lot quicker that way. We don't need to look at things on a simple year-to-year basis but as part of a very long-term strategy of considering the farm as part of a sustainable ecological whole.

We're pleased to be working with the Church Commissioners because they have an appreciation of the patience required and the impact on profitability, but also of the financial depreciation of soil if it becomes exhausted.

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From an annual business perspective it can often be difficult to justify crops and livestock but a more patient approach will win out. The importance of livestock is also difficult to quantify but is clearly important to the health of the farm. We retained livestock in the bad years as they were critical to the fertility of the land, with the biology of the land supported by organic manure.

This is about the long term and farming for future generations. I was reminded the other day as a perspective check that York Minster was built over a period of 250 years!

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Wold Farm wind turbine feeds renewable energy back to the grid