

How resilient is your rotation?



Introduction

Considerable change and uncertainty is on the horizon. With the future of domestic agricultural policy up for debate, increasing agronomic challenges and Brexit around the corner, it's perhaps worth stepping back and taking stock of one of your most valuable assets: your rotation.

The ultimate goal is to get the most out of your rotation, from both economic and agronomic perspectives, within the confines of policy. A starting point would be to identify what the current strengths are in your rotation, as well as what is limiting its potential. Looking forward, you could also list the factors that might put your rotation at risk and the opportunities available to improve it.

With the help of industry professionals, we've carried out this exercise for the UK arable rotation. This has produced a list of points to consider, which while not exhaustive, can be used as a basis for evaluating your own rotation. As a further resource, we've included a case study featuring the approach used by AHDB strategic farmer Brian Barker and his experience in getting the best out of his rotation.

Putting your research into practice

Once you have conducted your initial assessment, the next step is to plan ahead. For example, if you identify that poor soil condition is hindering the effectiveness of your rotation, there is the potential to capitalise on possible greening incentives, such as exploring the roles that cover crops or leys could play. Similarly, if one of your strengths is having a good handle on your costs and revenue, then you are better equipped to deal with the risk of low market prices.

While it may not be possible to arrive at a solution for every point identified, awareness of the various issues at play and incorporating them into your decision making could prove useful for your overall rotational strategy.



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Improve the resilience of your rotation

Why not involve the key people within your business to conduct an assessment and get your rotation fit for the future?

Case study: how stepping back changed my rotation

Farmer: Brian Barker

Farm: E.J. Barker & Sons, Suffolk

Brian Barker, host of the Strategic Farm for arable growers in the East of England, describes himself as someone who has always asked questions of his farming practice.

Brian took on more of the responsibility for his family farm in 2007; he found it was inflexible, too dependent on breaks in the weather and reliant on high prices. After taking stock of the situation, he realised he needed to introduce a longer term approach that was evidence-based, flexible and which embraces diversity, to make his business resilient. Brian's advice is:

1. Be flexible: do what is best for every field. Don't just have one or two cultivation systems. Don't have a set rotation and don't rely on chemistry out of a can or bag
2. Add diversity: add business diversity, livestock and cropping diversity, as well as natural biodiversity
3. Benchmark: know how you compare to your peers and scrutinise your figures with a fine-toothed comb
4. Quantify and manage: if you don't measure it, you can't change it

Because farming is a long-term investment, Brian introduced a 12-year rotation and looked at his approach in detail to build yield, reduce inputs and maximise efficiency. He found after two years of herbage grass, for example, his first winter wheat yields usually achieved around 12t/ha.

Brian also believes that soil is a farmer's biggest asset and identified soil condition as one of the most limiting factors on his farm. His rotation now includes spring cropping and grass seed crops because these allow him to use a range of establishment systems to protect and enhance the soil quality – he does not want penalise the crop from the start. If soil is in good condition and roots have the potential to go deeper by not cultivating, he opts for strip-tillage and direct drilling. However, if soil conditions demand it, he uses a plough as a 'soil reset button.'

Maintaining plant cover throughout the year is also critical, Brian feels. In autumn 2017, for example, 70 per cent of his spring crop land was planted with a cover crop. Compared to ploughing in autumn and leaving the ground exposed until spring, this approach protects his soil from the worst effects of the sun, wind, rain and snow. It also helps to prevent erosion and nutrient leaching, and builds organic matter.

“ Taking a step back from my business to review its long-term approach is vital, especially in an industry that is moving very quickly. If done well, it can help you evaluate your business and potential developments. Attention to detail is critical in this process to allow you to find that extra margin of profit, reduce the risk your business carries and accelerate business development. ”



Brian Barker, E.J. Barker & Sons, Suffolk

Evaluating arable rotations around the UK

Some of the key national and regional factors are highlighted on this poster. The lists are not exhaustive but they will help you to begin an analysis for your rotation.

National factors

Current strengths

- Strong diversity of crops available to widen rotations
- Good awareness of local markets
- Rotations often exploited as part of an integrated pest management strategy
- Trend towards spring cropping (eg to help tackle black-grass), which generally has lower variable costs
- Improved awareness of soil health
- Flexible rotations (eg being able to switch crops in response to inclement weather)

Current limitations

- Low crop profitability, which increases focus on managing production costs
- High weed burden (eg black-grass), which can force crop selection
- Tight rotations (especially an overreliance on oilseed rape)
- Lack of production and marketing knowledge of alternative crops (including spring crops and cover crops)
- Short-term 'market-chasing' mentality, which can restrict rotational options

Potential opportunities

- Productivity focus to drive profitability by ensuring that inputs (£/t) are less than outputs (£/t)
- Greening measures incentives to help land recover and boost soil health. The environmental focus of the proposed post-Brexit domestic agricultural policy may open up even more opportunities
- Reassess cultivation methods. Note: do your research and, in particular, build on the experience of other farmers (eg reduced tillage options)
- Remain open to alternative break crops. Note: it is important to scope out the market for the crop before planning it into your rotation
- Reconsider incorporating or baling straw to ensure the maximum return is realised
- Potential to grow energy crops or crops used as feedstock for anaerobic digestion plants
- Explore opportunities to include livestock in the rotation (eg to diversify farm income or to return nutrients to the soil)
- Review your rotation in response to changes in market access and policy
- Exploit technology (eg digital and precision farming)

Potential risks

- Restrictions on certain actives in plant protection products
- Resistance to plant protection products in target pests, diseases and weeds
- Impact of Brexit on markets (eg tariffs on barley exports, if no trade deal is negotiated and support payments are removed)
- Weather extremes/unfavourable climate (especially for drilling and harvest)
- Short-term mentality to running a farm business
- Low market prices caused by global surpluses. Note: efficient and well-planned businesses are likely to be able to withstand such periods
- Lack of financial support/incentive for doing what is best for your land and soil health

Regional factors

Scotland

Strengths: generally higher yields because of longer daylight hours. Generally, cleaner air and soils. Black-grass less of an issue compared to other parts of the UK. Plenty of manure and muck.

Limitations: clubroot challenges for oilseed rape. Later harvest with knock-on effects on subsequent drilling of other crops. Reduced opportunity to grow cover crops (eg because of timings and workload). Quantity of root crops grown can be detrimental to soil structure.

Opportunities: continued or further growth for malting barley/Scotch whisky market. Proximity to ports.

Risks: decline in broiler and pig production and more maize being used for distilling (reducing demand for wheat).

North

Strengths: potential to grow a wide range of crops (dependent on soil type), including sugar beet, potatoes and carrots. Good potential for grass in the rotation.

Limitations: locked into winter cropping on heavy soils. Small window for establishing oilseed rape. Later harvest with knock-on effects on subsequent drilling of other crops. Reduced opportunity to grow cover crops (eg because of timings and workload).

Opportunities: sugar beet factory catchment area may extend, allowing beet to be grown more widely. Demand for wheat for biofuel (although this may bring a degree of volatility to local prices and some demand uncertainty).

East and East Midlands

Strengths: good potential to grow sugar beet (especially in Norfolk and Suffolk).

Limitations: high cabbage stem flea beetle and black-grass pressures. The quantity of root crops grown can be detrimental to soil structure.

Opportunities: demand from maltings and flour mills in the area.

South West, West and the West Midlands

Strengths: good potential for grass in the rotation and to use manure and muck.

Limitations: wetter climate (can favour some diseases).

Opportunities: high demand from animal feed mills. Proximity to ports (South West).

South East

Strengths: warmer, drier climate (especially at harvest). Soils suited for spring cropping.

Limitations: warmer, drier climate (more drought prone, can favour some diseases). High black-grass pressures.

Opportunities: climate favours a greater choice of alternative break crops (eg soya). Proximity to ports and flour mills.

Risks: heavy reliance on the spring barley export market (could be a challenge post-Brexit).

How can AHDB help?

AHDB has many resources to help you manage your rotation. Visit our website to download our Recommended Lists, Nutrient Management Guide (RB209), Livestock and the Arable Rotation guide, GREATsoils resources and Horizon (Brexit) series of reports.

From the website you can also access our Farmbench tool, to help you calculate your production costs, and view the latest market information. Finally, you can find out more about your local Monitor Farm and/or Strategic Farm.

Further reading

This publication refers to a wide range of resources that can be accessed via cereals.ahdb.org.uk

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