Soil Association CERTIFICATION

Rising Demand for Organic Cereals

2018 HANDBOOK

FOR ARABLE FARMERS & ADVISORS

CONTRIBUTORS

Jerry Alford
Arable & Soils Advisor
jalford@soilassociation.org

Liz Bowles
Head of Farming
lbowles@soilassociation.org

Caroline Sherrott
Senior Certification Manager
csherrott@soilassociation.org

Paul Flynn
Arable and Soils Advisor
pflynn@soilassociation.org

Strong Prospects for Organic Arable

There is much uncertainty facing UK cereal farmers. Post-Brexit, the Government has indicated that the basic payment scheme will be phased out, but there is one significant opportunity: conversion to organic arable production. This booklet sets out the current opportunities and challenges of organic arable farming, and makes the financial case for considering this route.

Demand for organic food is growing much faster than supply of organic input materials. The UK is facing an increasing deficit of arable crops for animal feedstuffs at a time when other countries, especially the USA, are increasing demand at an unprecedented rate. In 2015, the UK imported close to 80% of its organic animal feedstuffs. Year-on-year reliance on imported feeds is increasing. Current estimates suggest that at least 160,000 tonnes of organic animal feedstuffs are now being imported annually and some livestock are now routinely wholly reliant on imported feed.[1] To underpin the UK organic sector, the area of organic arable crops produced in the UK could easily double to 80,000 ha. At the same time, processors and retailers are increasingly searching for UK sourced ingredients for organic food—including organic livestock feeds—to be certain of their products integrity.

A common misconception of organic production is that lower yields must equal lower profits, but Farm Business Survey annual benchmarking figures show this is generally not the case. Lower input costs and increased support mean that often organic farms are just as, if not more, profitable than their non-organic counterparts. The organic market is certainly smaller but increasingly, innovative partnerships between farmers and their customers are shortening supply chains and increasing price stability.

Liz Bowles,
Head of Farming,
Soil Association

Now is a good time to consider organic arable

Demand for Organic

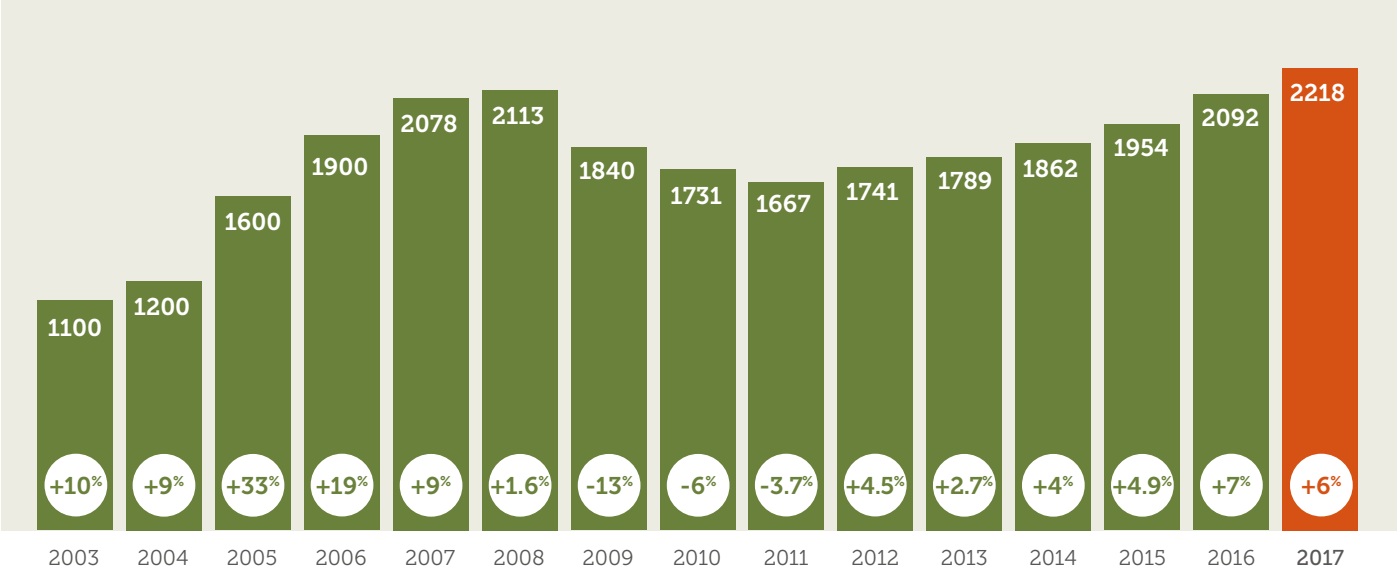
How the global organic market is affecting UK farmers

Demand for organic products has risen year on year in the UK for the past five years and now stands at over £2 billion. Across the EU, demand for organic food has risen an average of 13% between 2016–2017, with Denmark's organic food sales now close to 10% of all food sales.

The global market for organic food and drink stood at over £66 billion in 2015. The USA has the largest market for organic food (£34.7 billion in 2015), with 5.5% of all food sales being organic.[2] This indicates that organic food is now "normal" in many countries, with total organic food and drink consumption up 400% between 2000 and 2015.

Globally, certified organic land represents just 1.1% of all agricultural land (51 million ha). In the EU, organic farming accounts for 6.2% (12.72 million ha), the highest of any region in the world. In the UK, around 3% of agricultural land is organic.

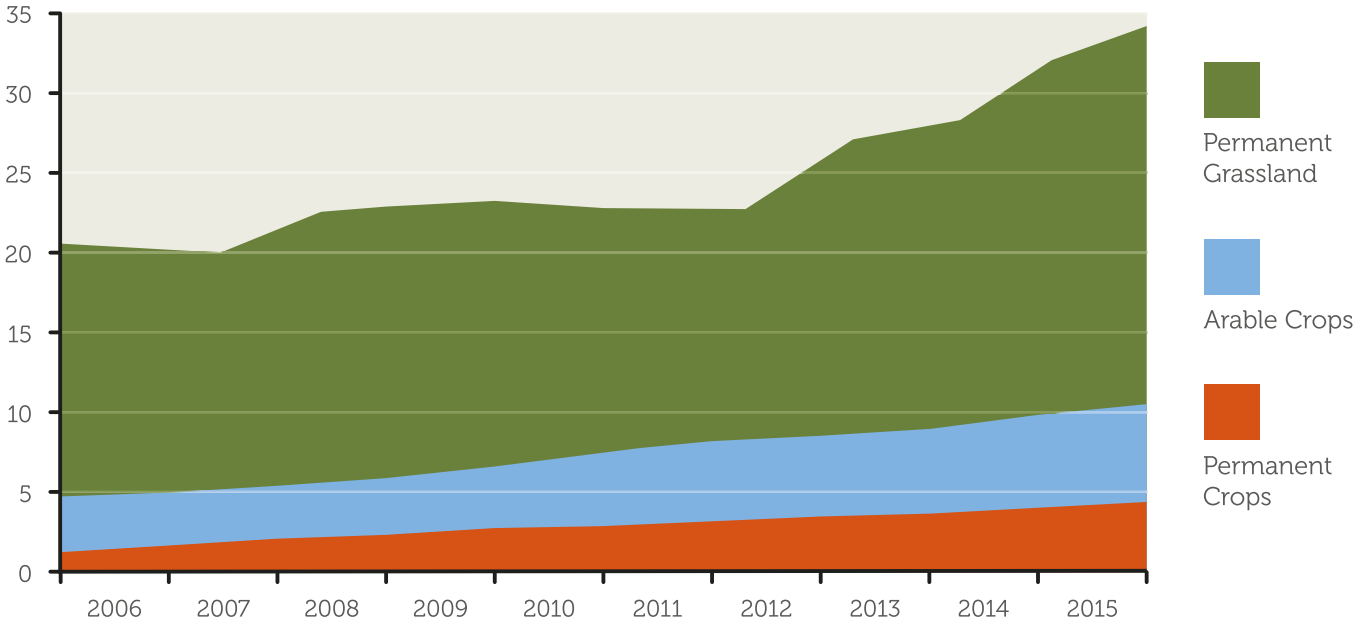
2003–2017 UK sales of organic products in GBP (£) millions



Source: Organic Market Report, Soil Association, March 2018

Organic sales are highest ever at **£2.2 BN**

Trends in world areas of organic land 2006–2015 by land use (million hectares)



Source: FiBL-IFOAM-SOEL survey 1999–2017

Although the area of arable land has increased by 5.5 million ha between 2006 and 2015 this is a much smaller increase than for permanent grassland (up 12.7 million ha in the same period). In the UK, the area of organic land has been in decline since 2008. By 2016 the total area under organic management in the UK was 508,000 ha (down nearly 32% from the peak) with only 37,000 ha in arable crops.[3]

In many cases, organic permanent grassland is unsuitable for arable crops, whilst the fastest growing categories for organic food sales in the UK include dairy and poultry—the sectors with the highest demand for animal feedstuffs.

This imbalance means that the UK is increasingly dependent on imports of organic animal feedstuffs. Alongside this, global demand is rising, leading to increased prices for feedstuffs. This presents a significant opportunity for arable farmers to convert to organic production to supply this growing market.

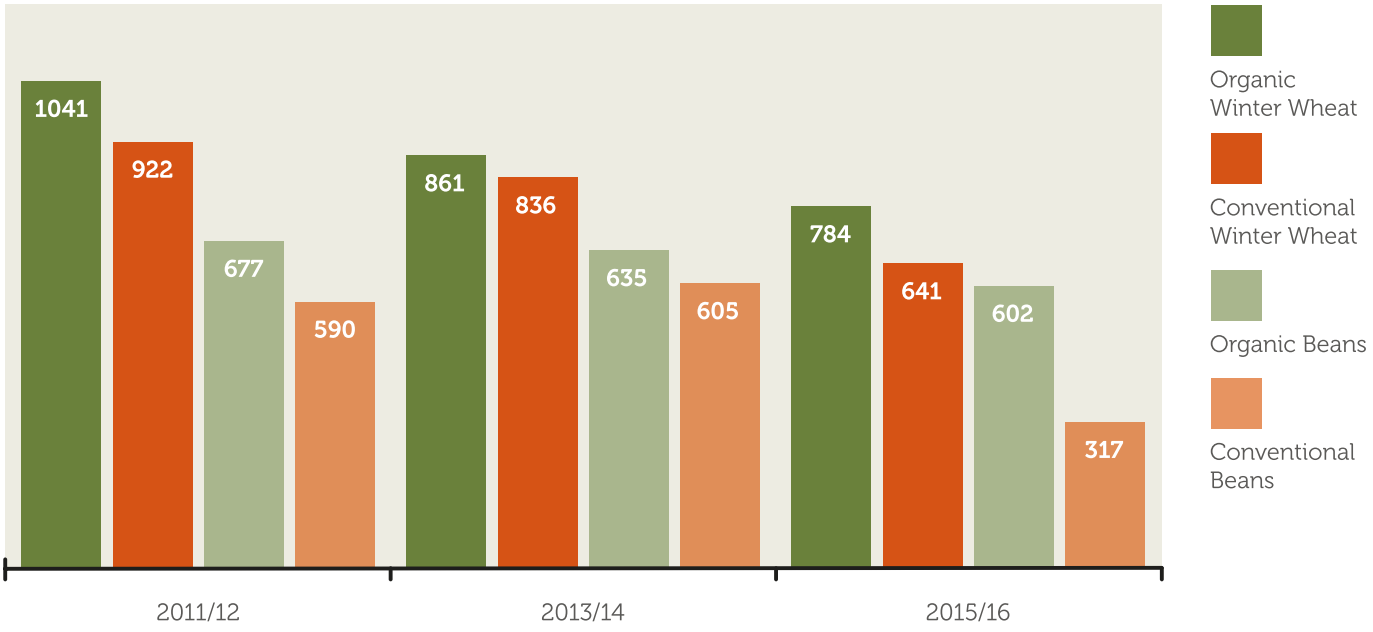
Organic egg sales grew by 7.6% in 2017, leading to increased demand for feed

Does Organic Arable Stack Up?

Comparing financial performance of organic and non-organic arable farming

The easiest way to compare organic and non-organic performance is to look at gross margins based on a single year's crop costs and yields. The assumption is usually made that non-organic will easily out-perform organic because there are more inputs available to maximise yield, and therefore profitability. But figures from the Rural Business Network do not support this assumption.

Gross margin analysis of organic and non-organic crops (£/hectare)



Source Rural Business Survey 2015/16 Organic Farming in England

This simple analysis is misleading because on organic farms it is the importance of rotations, fertility breaks and interactions between enterprises that generates profitability, not one individual crop.

Organic farms are often mixed, or have a high value niche crop as part of their rotation, with that crop or the livestock enterprise adding to whole farm profitability.

In a stockless system, a fertility building crop is a cost; but on a mixed farm it is a feed source, with livestock contributing to overall farm gross margin.

Another difference between organic and non-organic farms is the replacement of crop management tools such as chemicals and fertiliser with mechanical weeders, in other words replacing variable with fixed costs. Fixed costs can also be reduced under organic with less machinery and crop storage needed. In addition, more spring cropping and longer rotations reduce the size and cost of the machinery needed on organic farms, as well as significantly reducing total working capital requirements.

As a benchmarking tool, Net Farm Income (NFI), is a measure which allows individual farms of different tenure, business organisation and indebtedness to be compared directly with one another on a consistent basis. Using this methodology, which includes imputed rent but excludes ownership costs and interest payments, the table below compares organic and non-organic farm types in the year ending March 2016.

Comparative income figures (£/hectare) for organic and non-organic farm types

NFI/HA (£) 2015/16	ORGANIC MEAN	NON-ORGANIC MEAN	DIFFERENCE
Cropping	211	96	115
Horticulture	1052	1171	-119
Dairy	366	168	198
LFA grazing	130	80	50
Lowland grazing	122	0	122
Mixed	187	122	65

Source: Rural Business Survey 2015/16 Organic Farming in England

These benchmarking figures show that organic farms generate 90% of the total output per hectare of a non-organic farm. Agricultural output accounts for 79% of this, the difference being due to environmental payments which are higher on average for organic farms. Overall costs are 16% less due to no fertiliser and crop protection costs, although overheads are slightly higher. Overall the Net Farm Income of £211/ha is significantly higher than the non-organic figure of £96/ha.

Organic cropping Net Farm Income is **£211/ha**

compared to the non-organic figure of £96/ha

Organic farms tend to have significantly lower working capital requirements

Selling Organic

Opportunities and developments in the organic supply chain

The organic cereals market is coming of age with local provenance and supply chain agreements becoming more common. From very small beginnings when organic grains were first traded the market for organic cereals in the UK is growing fast with over 200,000 tonnes now required each year.

The organic market is characterised by a high level of entrepreneurship, essential for developing markets. However as the market matures, more sophisticated trading mechanisms are starting to be developed which provide greater security for growers.

Organic farmers often grow a wider range of crops than many of their non-organic counterparts, including spelt, triticale, quinoa, peas and beans and staring to look now at lentils. Markets are small at the moment, but as our tastes change the ability to grow organic pulses in the UK could facilitate new markets to be developed.

Provenance is a key driver for the organic market for products for human consumption and for animal feed. This is becoming even more important as the market grows pulling in product from all over the world with consequent concerns over integrity. To combat this supply chains are increasingly starting to demand that organic farmers include UK produced feedstuffs in livestock diets.

Retailer taking the lead

A retailer with a major stake in the organic sector in the UK is working to support organic arable farmers with stabilised pricing contracts for all crops produced in a typical organic rotation (peas/beans; wheat and barley/oats). They are doing this in order to reduce the risk in supply chains from:

- Currency fluctuations associated with importing organic feedstuffs
- Feed supply integrity concerns associated with feedstuffs from some countries
- Uncertainty over future trading arrangements post Brexit
- Meeting consumer expectations of UK organic foods

The bottom line: price data for organic cereals

Despite the high level of imports, organic farmers are enjoying sustained prices significantly above those for non-organic cereals with premiums over conventional prices during 2018 for some organic crops being more than 150%.

More normally, premiums of 50–100% over conventional ex-farmgate prices can be expected.

Prices for organic cereals in 2018

CROP	£/TONNE
Wheat, feed	280
Wheat, milling	315
Barley, feed	285
Barley, malting	320
Oats, feed	245
Oats, milling	328
Beans, feed	385

Source: Saxon Agriculture, March 2018

Premiums of 50-100%
over conventional prices can be expected

Organic Perspective

Sophie Alexander,
Hemsworth Farm ,
410 ha, Dorset

"First and foremost, my decision to convert the whole farm to organic was financial. It made good business sense. Part of the farm had already converted to organic when I joined in 2011 but 100 hectares was still being farmed non-organically.

This gave me the valuable opportunity to benchmark the two systems side by side. **Over the three years of comparison I found that the organic crop margins were consistently higher.**

Not always the highest net return, but the bigger margins were very attractive in mitigating risk. Also, I would have needed to find three times the sum of working capital to revert the whole farm back to conventional methods. Instead I was able to allocate funds for diversification and asset enhancement, rather than buying inputs in order to grow non-organic commodities and sell into the vagaries of global markets.

When I first started marketing organic grain I explored as many trading options as possible.

Now I sell almost exclusively through Organic Arable. I value the fact they are run by farmers with the express purpose of maximising price and developing markets for their members. They charge a fixed, transparent commission and have the interest of the organic sector at heart.

Over the three years of benchmarking I realised how much I was enjoying the learning curve of managing an organic system. It was interesting, challenging and very rewarding. I agonised over the decision, but I was very pleased and relieved that in the end the financial arguments correlated with my own preferences and instincts."

Growing Organic

Answering some common questions about organic arable production

Rotations: Do you need livestock to farm organically?

Unlike non-organic farms, organic arable farming is dependent on nutrients in the soil. As a result, legumes, green manures, cover crops and fertility building periods are essential to the success of organic cereal growing. The simplest rotations are two to three years of grass/clover followed by a cereal, a legume and an under-sown spring cereal with green manures grown in the overwinter gaps. Longer rotations are possible, with hungry crops like vegetables following a legume and competitive crops like oats following a weedy crop.

It is most common for organic arable farmers to introduce livestock to graze the grass/clover leys and to produce farmyard manure to support soil fertility but there are organic farmers running "stockless arable" systems. This is becoming more feasible with increasing availability of anaerobic digestate alongside more traditional methods of building fertility such as fertility building leys, green manures and in some cases composted green waste materials. Organic farm gross margins tend to be higher from mixed farms than from stockless arable farms, but once labour costs and capital costs associated with livestock production are included especially where new infrastructure is required, stockless systems can outperform mixed farms.

Cultivation: Do all organic farmers rely on the plough?

Most organic farmers use ploughs as the main cultivation tool, although discs and non-inversion techniques do have a role. Stale seedbeds are a technique used to create a weed free seedbed and this can be done using shallow cultivations without ploughing. The simple rotation mentioned above would involve ploughing at most three times in six years. Innovative Farmers are running trials on terminating cover-crops with crimper rollers. These would provide a mulch and soil improver, without disturbing the soil, prior to spring drilling.

Weeds: Are all organic crops full of weeds?

Weed control is the biggest challenge for organic farming. There are now increasingly sophisticated mechanical options such as interrow cultivators, weed harrows, weed surfers and comb cutters. It is common to use higher seed rates to produce a more competitive crop to suppress weeds early in the growing season, and generally to select varieties on growth characteristics as much as yield data. Another weed control technique is drilling later in the autumn than on non-organic farms, meaning the crop is more competitive in the spring when weeds start germinating. The weed spectrum is different in organic cereals, weeds like cleavers and wild oats are less competitive because there are no fertiliser applications. Crop rotations, spring cropping and ploughing all reduce the influence of blackgrass but it can still be found on organic farms.

Chameleon weeder, Shimpling Park Farm, Suffolk

Pests and diseases: How can you tackle pests and diseases without sprays?

Diseases are less of an issue with organic crops, often considered to be due to lower nitrate levels in the plant making it less susceptible. Selecting more resistant varieties is a good strategy. The diverse nature of organic farms and the lack of insecticidal treatments leads to an increase in the number of beneficial insects reducing the problems associated with pests, although ferric sulphate is approved for slug control. No seed treatments are allowed in organic systems, but later drilling reduces the risks. Variety mixes are more common in organic systems, giving some possible extra protection against disease.

Crop varieties: What varieties are available organically, can I use any seed?

The AHDB's 'Recommended Lists' can give some guidance on a variety's potential, but the 'untreated' figures relate to a crop where every input other than pesticides have been used. However, many researchers state that such trials are unhelpful for organic farmers giving false rankings. Innovative Farmers are currently running a variety trial on an organic farm to test the most suitable cereal varieties for organic systems. Where organic seed is not available, cleaned non-organic seeds can be used but permission must be obtained first to get a derogation. A online database—**www.organicxseeds.co.uk**—shows what organic seeds and varieties are available.

Crop nutrition: How do you get decent yields without artificial fertilisers?

No artificial fertilisers are allowed in organic systems, only ones from a natural source. Where there is a deficiency found, control bodies will give permission to use lime, phosphorus and potassium fertilisers from a list of approved products. Livestock manures can be used, but must be composted for 12 months if from a non-organic source. Anaerobic digestate from some sources is approved, but this must be checked first. The use of deep rooting crops like sainfoin, chicory and fodder radish has been found to bring nutrients up from lower soil strata and there is some evidence that the absence of artificial fertiliser can improve the supply from the soils reserves, perhaps by triggering improved soil bacterial function.

Supporting Organic

Securing organic opportunities post Brexit

We are seeing major changes in government thinking on agriculture and the environment, with the recent publication of the UK Agriculture Bill. Moving away from simple area-based payments, the Bill focuses on supporting farmers for the delivery of public goods, such as healthy soils, improved water quality, climate mitigation and increased biodiversity.

The Soil Association welcomes the information coming from Defra ministers that future Environmental Land Management schemes will include more flexible, multi-annual agreements with payments no longer based on income foregone/additional costs, but rather the value of the public goods delivered—with an element of incentive.

Government is working together with farmers to design, develop and trial the new approach. Under the new system, farmers and land managers who provide the greatest environmental benefits will secure the largest rewards, laying the foundations for a 'green Brexit'. The following are the new areas where government has committed support:

- Environmental outcomes, such as clean air, clean and plentiful water and thriving plants and wildlife by carrying out environmentally beneficial land and water management activities
- Supporting public access to and enjoyment of the countryside, farmland and woodland
- Managing land or water in ways that maintain, restore or enhance natural or cultural heritage
- Activities undertaken to mitigate or adapt to climate change
- Activities undertaken to prevent, reduce or protect from hazards to, or caused by, the environment (flood prevention, soil health and so on)
- Supporting action by farmers, vets and other organisations to improve animal health and welfare, reduce endemic disease and keep livestock well maintained and healthy
- Measures that protect or improve the health of plants, including wild plants, agricultural and horticultural crops, trees and bushes
- Starting, or improving the productivity of, agricultural, horticultural or forestry activities

New payments levels may not be linked to income foregone-type models, but rather could be linked to payments based on the value of the outcome being delivered.

"Most of all, seeing the long-term improvement in our soil is what keeps us organic"

Charles Hunter-Smart

Public money for public goods

The Soil Association is proposing that support for organic farming be at the centre of England's new Environmental Land Management (ELM) scheme to reflect the high level of public goods delivered by organic farming systems.

To ensure that this can happen, we propose that England's new ELM includes a bespoke scheme for organic farming that reflects the high level of public goods delivered by organic farming systems.

This scheme should include an ambitious target for the growth of domestic organic production in recognition of the sector's ability to deliver a high level of public goods and respond better than any other certified farming system to the challenges of climate change. A sensible and achievable target for expansion in England would be moving to 10% organic land area over the next 10 years from current levels of around 3%.

Keep up to date

Under the 2018 Countryside Stewardship (CS) scheme, rotational land in conversion to organic is eligible at the moment for payments of £175/ha/year for up to two years. Better still, the only CS options that were non-competitive were the organic options. For up-to-date information on funding opportunities for organic farmers, visit the Soil Association's Market Information page at **www.soilassociation.org/farmers-growers/market-information**

Rotational land in organic conversion is eligible for

£175/ha

for up to two years

Organic Perspective

Charles Hunter-Smart
Bradwell Grove Estate
1,214 ha, Oxfordshire

"We started converting the farm in 2005. Back then the single farm payment and entry level stewardship were just starting. Corn prices had been at rock bottom, £80.00 per tonne, for a few years and were showing little sign of improvement. Primarily, **we saw going organic as a way to reduce risk**. We had low yielding soil that was susceptible to drought, and with organic we could significantly cut our input costs. But I was also concerned about blackgrass resistance and the growing trend and encouragement to use pre-harvest glyphosate on food-grade crops. We saw going organic as an opportunity to build a better ecosystem. I didn't really have any reservations, we just knew we had to do something to improve our diminishing bottom line.

I'd recommend that anyone interested in conversion reads Sir Albert Howard's *An Agricultural Testament*. Written in 1932, it really changed my thinking. I have a firm belief that what we are doing here is right. I've seen an increase in moths, butterflies and insects, and we've had bird species returning that hadn't been seen here for years. Most of all, seeing the long-term improvement in our soils is what keeps us organic. I wish I'd known more about the soil food web when we started, about the microbes and fungi and their requirements—there's lots of information available now, but not even the Soil Association was talking about it in 2005! Farming organically is a challenge. It means looking at the whole picture all of the time, but I've been surprised by how fun and worthwhile it is. Financially, it has certainly been the right move, although the lower prices recently have been a challenge. With Brexit on the horizon, we won't be altering the way we farm."

Going Organic

What is involved in conversion and certification

Standards and inspections

Organic farming is governed by European law (the EU organic Regulation). In the UK, Defra oversee organic certification bodies to provide organic certification and inspection services to organic farms. The Soil Association maintains its own organic standards, which incorporate the EU regulation rules.

Organic certification is required for crops to be sold with reference to having organic status and to claim organic grant funding under government land management schemes.

Organic certification includes a physical inspection of the farm business at least every year to look at land, livestock, crops and records to verify that all organic production rules have been met. Samples of soil, crops and organic produce may be taken for testing.

Each Soil Association licensee is assigned an experienced Certification Officer who is responsible for managing their organic certification and signposting to business support.

Land and crop conversion

The standard conversion period for land is two years, this can potentially be reduced if land has been managed to organic standards before going into conversion. To qualify for a reduced conversion period, farm records and a field assessment must demonstrate that no prohibited inputs, such as prohibited fertilisers, herbicides or pesticides, have been applied to the land for at least four months prior to the start of conversion. During the two-year conversion period the land must be managed to the organic standards.

To produce an organic annual crop, seed must be sown into and harvested from land that has completed its conversion period and has organic status. Annual crops harvested during the second year of conversion can be sold as 'in conversion'. It therefore makes sense to start converting your land before the farm's typical drilling date in autumn or spring to ensure there will be an organic crop to sell as quickly as possible at the end of the conversion period.

When should I arrange for my conversion meeting with my certification body?

It is important to plan the start of your organic conversion to ensure it is in line with your cropping and stocking plans. We recommend you discuss your plans with your chosen certification body or a qualified consultant or advisor as early as possible.

Find out more

For more information please call us on **0117 914 2412**, or email our producer certification team at **cert@soilassociation.org**

Useful contacts

Soil Association Certification

T: 0117 914 2412 E: cert@soilassociation.org

Soil Association Charity

T: 0117 314 5100 E: producersupport@soilassociation.org

Defra Organic Team

E: organic.standards@defra.gsi.gov.uk

Innovative Farmers

T: 0117 987 4572 E: info@innovativefarmers.org

Natural England

T: 0300 060 3900 E: enquiries@naturalengland.org.uk

Organic Research Centre

T: 01488 658298 E: elmfarm@organicresearchcentre.com

Organic Trade Board

E: info@organictradeboard.co.uk

Useful information

Visit **www.soilassociation.org/arable-report** for links to the following:

Defra guidance on organic farming support
Organic agriculture statistics
UK Organic Market Report
Worldwide organic agriculture and food statistics
Technical information on organic arable farming

References:

1 Based on data from the Agriculture Industries Confederation

2 *FiBL – AMI survey 2017*

3 *Defra Organic Statistics 2016*

4 Defra, 2018. Countryside Stewardship: Mid-Tier and New CS Offers for Wildlife Manual.

Get in touch

Producer Certification Team
T: 0117 914 2412
E: cert@soilassociation.org

Soil Association Charity number: 0300 330 0100