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Organic Research Centre

Bulletin

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News in brief

Online organic arable course

A free online self-learning course is available on the OK-Net Arable platform. The objective of this course is to enable users to familiarise themselves with the latest insights, context and concepts of organic arable farming. Particular attention is given to tools and practices, collected within the project, in order to tackle current difficulties related to production and crop protection. This course is structured into six modules. Each module is explained through a PowerPoint presentation supported by different tools (practice abstracts, leaflets, guidelines, data calculation, videos, books, reports, web pages etc.). The material is provided in English and covers five thematic areas which are: soil fertility management, nutrient management, pest and disease control, weed management and crop specific issues.
<http://farmknowledge.org/index.php/courses>

Addressing the crisis for new entrants to farming

The Ecological Land Cooperative (ELC) has launched a campaign to ask landowners for donations of small parcels of land to create clusters of affordable smallholdings for new entrants to ecological agriculture. The ELC aims to help new entrants to farming to overcome the hurdles of high land costs and inflated house prices, and get their farm businesses up and running. By providing affordable and secure smallholdings the ELC is addressing the crisis in rural employment, seeking to bring young people and fresh ideas into farming.

Organic sector booming worldwide

The 2018 edition of the study *The World of Organic Agriculture* (data per end of 2016) published by FiBL and IFOAM – Organics International shows that the positive trend seen in the past years continues. Consumer demand for organic products is increasing, more farmers cultivate organically, more land is certified organic, and 178 countries report organic farming activities. There are now 57.8 million hectares of organic agricultural land worldwide and the organic market has grown to almost 90 billion US dollars. (see also *Organic Market in Europe* p15)

UK Agroforestry Network workshops

It's been a busy couple of months for the ORC agroforestry team and our Abacus colleagues. The second round of UK agroforestry network group meetings took place during January and February. In the UK we have chosen to develop three sub-groups focusing on livestock, arable (combinable crops) and vegetable cropping systems with network members choosing to join as many of these events as they wish depending on their preference and the subjects addressed. The 'Trees and Vegetable' group were the first to meet on 11th January, at Duchy Home Farm, Tetbury, Gloucestershire; next up were the 'Trees and Livestock' group on 25th January at The Farm, Longnor, Shropshire, and finally, the 'Trees and Arable' group on 15th February, hosted by AFINET partner Stephen Briggs on his farm just outside Peterborough in Cambridgeshire. In total 92 people attended the events, an excellent turnout despite the chilly weather! Each workshop followed a similar format – after

brief introductions setting the aim of the day, the groups headed out onto the farms to visit the agroforestry systems. Back in the meeting rooms, other agroforestry practitioners shared their journeys and experiences with the group. Afternoon discussion groups compared each other's journey towards agroforestry, identified obstacles and innovations, and decided upon the content for our next meetings so we can deliver to member specific requirements.

The future for food, farming and the environment

Defra are seeking views on their proposals for future agricultural policy in England. 'Health and Harmony: the future for food, farming and the environment in a Green Brexit' sets out the government's ambitions for farming in England and seeks the views of all readers on its proposals. The proposals in this paper set out a range of possible paths to a brighter future for farming. Defra states that 'They are the beginning of a conversation, not a conclusion and we want everyone who cares about the food we eat and the environment around us to contribute.' Many consultation meetings are planned by different organisations including NFU, CLA and environmental groups. For the organic sector, we are organising meetings of the English Organic Forum (EOF) on Friday 13th April at Elm Farm, which will lead to a formal consultation meeting of the Defra/EOF Organic Roundtable on 3rd May. The Soil Association and Defra are organising a consultation event at Sheepdrove on 23rd April. Responses can be submitted online or by email. The consultation closes at 11:45pm on 8 May 2018.

[https://consult.defra.gov.uk/farming/future-of-farming/Health and Harmony: the future for food, farming and the environment in a Green Brexit. CM9577](https://consult.defra.gov.uk/farming/future-of-farming/Health%20and%20Harmony%3A%20the%20future%20for%20food%2C%20farming%20and%20the%20environment%20in%20a%20Green%20Brexit.%20CM9577). Defra, London. February 2018.

Defra collaboration fund

Defra has announced a range of measures including compulsory milk contracts and £10m collaboration fund to provide greater security for farmers. The fund will be designed in consultation with the farming industry and will bring together those interested in co-operation. These groups will be supported by the funding to formally establish, develop or expand, so that farmers and growers can take advantage of new market opportunities to help their businesses thrive. Collaboration between farmers can bring substantial economic benefits, enabling farmers to benefit from economies of scale, share knowledge and jointly market their produce.

Dean Organic Fund

We have had a tremendous response to the launch of the Dean Organic Fund providing interest free loans to organic producers and food businesses. The first round closed at the beginning of March and we aim to complete evaluation of the applications received by April. At that time, a decision will be taken about the timing of the second round and we will publicise details on our website and in the next ORC Bulletin.

For more details on items on this page, including links to the publications, visit the News link at www.organicresearchcentre.com or, to receive more frequent updates, register for our E-bulletin service and follow us on Facebook, Twitter and Flickr.



About us

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Phil Sumption

The Organic Research Centre is a leading, independent, research charity working for better farming, food and health, promoting environmental sustainability, quality food and health and wellbeing for all. We work in the UK and internationally to: research and develop practical, sustainable land management and food production systems based on organic and agro-ecological principles; foster knowledge exchange with and between current and future producers, food businesses and related professionals; and influence policy and public debates on the future of food and farming based on sound evidence.

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Editorial:

Health and Harmony – will a Green Brexit deliver?

With great fanfare, the consultation on the Secretary of State for the Environment, Michael Gove's, Agriculture Bill for life after Brexit has been launched. Meetings of all types are being held around the country – or at least in England, as the Bill will not apply to Scotland, Wales or Northern Ireland – even though no agreement has yet been reached about the repatriation of powers returned from Brussels.

As the title suggests, Michael Gove is keen to promote a new agenda for food and farming in England, one which 'promotes environmental enhancement, supports profitable food production and contributes to a healthier society'.

The plan promises to 'incentivise methods of farming that create new habitats for wildlife, increase biodiversity, reduce flood risk, better mitigate climate change and improve air quality by reducing agricultural emissions.' This will be achieved 'by ensuring that public money is spent on public goods' supporting both the environment and animal welfare.

These goals coincide directly with what the organic movement has been calling for over decades, so in theory we should be pleased. But aside from a case study of OMSCO, organic food and farming only merits part of a sentence in the document: 'We will also continue to recognise the benefits of organic production ...', and agroecology is not mentioned at all. The evidence compendium and the review of 'good' Countryside Stewardship options (which include the organic conversion and maintenance support) don't mention organic.

By contrast, precision agriculture and advanced technological solutions are promoted as the big opportunity. Where is the sense that a genuine focus on the environment requires ecological innovation and knowledge exchange so that farmers can use their own creativity and expertise to drive positive change?

The English Organic Forum, representing all the organic organisations, has written to Michael Gove setting out its concerns that the real potential of organic food and farming to deliver both public goods and economic benefits has not been recognised in the Command paper.

At a time when the organic market in the UK has been growing for several years, the land area under organic management has been falling – by 30% between 2007 and 2016 – when across Europe there has been 73% growth. The EU average is now 6.7% of all agricultural land, whilst the UK has fallen to 2.85%. Italy has reached almost 15%, Austria and Sweden over 20%. In France, President Macron is calling for 22% by 2022, while the new German coalition government agreement sets a target of 20% by 2030.

What's more, evidence from Italy, Austria and other countries indicates that the rapid growth of the organic sector is being driven by the higher profitability of organic farming. According to the Farm Business Survey, organic farming performed better than non-organic across all farm types in England in 2015/16. It may well be that as Direct Payments are withdrawn from farmers, with potentially serious impacts on the profitability of many, the financial opportunities presented by the growing global organic market will stimulate increased interest in conversion in the UK.

We therefore need much more recognition that an ambitious programme for the development of organic farming in the UK can deliver on the environmental, animal welfare and economic goals set out in the consultation. We should be thinking about growing organic to 10% or more of UK food and farming, as our competitors are doing, not just maintain the status quo.

The closing date for the consultation is 8th May. Make sure you get out there and make your voice heard. See details in news item opposite.

Nic Lampkin

Farmers' viewpoints on transitions to agroecological systems

ORC was contracted in 2017 to work jointly with the Game and Wildlife Conservation Trust (GWCT) to undertake a study for Scottish Natural Heritage (SNH) on behalf of the Land Use Policy Group (LUPG). The chair of LUPG, Rob Cook, wrote in his forward that it is more important than ever that we understand the motivations, attitudes and experiences of those who have successfully adopted more sustainable agricultural practices and systems. Here **Susanne Padel** reports back on the results and conclusions of the study.

LUPG commissions research and advises on rural land use matters such as agriculture and woodlands. We were asked to look at the question of how farmers decide to enter into transition to a more agroecological approach to farming and how they experience the process. We chose a case study approach, centred around face-to-face, semi-structured interviews, involving the principal farmer and, if possible, other members of the farm household. The report highlights the importance of social and behavioural factors in land management, particularly the need to encourage and support farmers to redesign their businesses according to agroecological principles.

The case study farms and approach

Fourteen farmers in England, Scotland and Wales were recruited through contacts with organisations engaged with agroecological practices, such as organic farming, agroforestry, pasture-fed livestock systems and conservation/integrated agriculture (mainly in the form of direct drilling). The fourteen farmers were socially distinctive: most farmers had sought out opportunities for travel, research and personal development and all are members of networks associated with sustainable agriculture and have engaged in a process of transition. Interviews were conducted by Oliver Rubinstein of ORC and Amelia Woolford from the Allerton project of GWCT between January and March 2017. All the farmers were very willing to share their experiences. We asked the farmers to tell us their story of how their farm had changed under their management and prompted them to talk about their motivations, opportunities and key challenges. We analysed the answers to look for common trends and observations and we also compared them

Farm types

- 5 mixed farms
- 4 mainly arable farms
- 3 dairy farms
- 2 farms with horticulture
- 1 upland beef & sheep

- Small (<10ha) and large farms (>300h); 3 female farmers
- Earlier and more advanced stages of transition
- Recruited through organisations that support agroecological practices

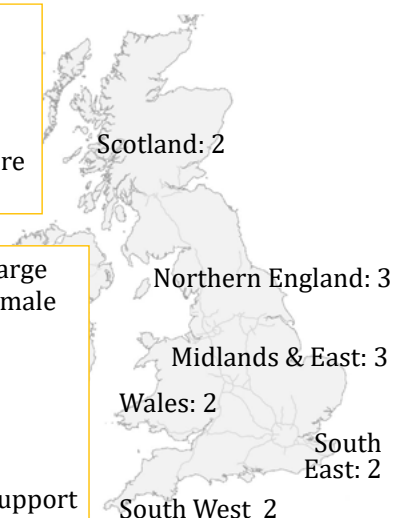


Figure 1: The case study farms

Table 1: What triggered the change?

Taking over the business (11 farms)
Succession (6) and new business (5)
Securing the long-term viability of the business (5)
Contact with other inspirational farmers/ professionals (8 farms)
Through farm visits or study tours (5)
Attending a course (3)
Concerns about soil health (7 farms)
Low yields and weed problems
Structural farm changes (9 farms)
Integrating livestock (6)
Taking on more land (3)

with two theoretical models of farmers' decision-making: the Triggering Change Cycle, which was developed based on organic conversion experiences¹, and the Efficiency Substitution Redesign (ESR) model², which has been widely used in the context of agroecology (e.g. ^{3,4}).

Sometimes a lengthy period of time elapsed before people experienced their personal 'click' moment, that made them change. This could either be a change in the way they 'saw' issues (for example weeds) – or it could be a change in circumstances (e.g. a new collaboration, additional land or livestock). The farmers reported as key triggers or motives for change: taking over the business; contact with other inspirational farmers or professionals (6 of the 14 farmers had been Nuffield scholars); concerns about soil health; and structural farm changes. Some were also attracted by the premium prices from quality labels (e.g. organic) or agri-environment grants, but this appeared to be a secondary motive. For example, two farms that started with direct drilling and one that started with pasture-fed farming also took up organic farming. Overall, half of the farms we spoke to took up another approach, once the first steps had been taken. One farm added agroforestry to direct drilling etc., another to organic farming. And along with practical changes on the farm can go a change in the farming identity, which is helped by meeting other like-minded people.

Key conclusions

The importance of inspiration and social capital. The farmers' experiences highlight the crucial importance of social networks. The majority of the farmers we interviewed were motivated to engage with agroecological approaches through seeing practical examples and meeting inspirational people, in the UK and abroad. Such peer-to-peer contact opportunities with experienced practitioners of agriculture are valued but scarce. In developing support for agroecological transitions, it is important to pay attention not only to the agronomic challenges but also to social processes⁵. More could be done to support UK farmers who have made a



transition to share their experiences (for example by making short videos) and by supporting study tours to countries where agroecology is more widespread (e.g. France).

Improved access to practical information about agroecology. There is currently a lack of trusted practical and financial information regarding the transition to agroecology. This makes it more difficult for farmers to evaluate the likely risk of redesign. Information provided can come through established channels (e.g. through offering training to farmers and consultants) but also digital media, such as the Agricolgy Programme that ORC and GWCT are engaged with. There is also a need to introduce teaching of agroecology in agricultural education at colleges and universities, as well as to offer relevant training courses for farming professionals in continuous professional education.

Move towards supporting active and social learning rather than knowledge transfer. Agroecological transition is an active learning process, not a simple 'switch' from one way of farming to another. Each transition and evolving farming system we encountered is unique and several farmers are engaged with separate transitions. At ORC we aim to support this through our engagement with participatory research and our engagement in knowledge exchange through events, workshops and through Agricolgy. Trust in groups develops through mutual support, so that both positive and negative experiences from trial and error can be explored, and learning emerges from a shared interest in a problem or challenge⁶.

New rules and indicators for the long term. For most farmers, economic profitability is part of long-term sustainability. A common theme emerging during the interviews is farmers seeking a long-term economic perspective on future-proofing their farm, e.g. through investment in the natural capital of soil and soil fertility. Soil improvements are relatively slow and require long-term commitment. The results illustrate that the case study farms use a variety of ways to judge their successes. Although they abandon some old rules and established norms, they are uncertain about what indicators would be more important to measure. They are looking for more long-term financial indicators, alongside indicators of soil fertility, diversity and/or animal health. In some areas such indicators do exist, for example soil quality indicators are quite well established, but these are not necessarily widely known and used. It is argued that farmers need accepted definitions, measurements and indicators of the state of resources and sustainability so that they can judge for themselves how well they are performing and how they can manage the risks to their farming business⁸. Indicators also facilitate benchmarking between businesses – which in turn builds trust and the sharing of information between farmers. ORC engages with the development of sustainability indicators, where the farmer's perspective must be considered.

Access to grants. Farmers engaging in agroecological transitions should have access to grant schemes that support the public goods delivered, both in the initial start-up phase but also in the longer term. Lampkin et al. (2015)³ examined the public benefits that agroecological approaches contribute. These include reducing non-renewable energy consumption, maintaining or increasing biodiversity and ecosystem services, maintaining natural capital (soil and water resources) through careful management (e.g. reduced

or zero tillage) and reduced use of potentially polluting inputs. This can contribute to maintaining or increasing the farm's profitability through more efficient input use, reducing costs, diversifying the range of outputs and by developing specialist markets and shorter supply chains.

- UK Governments can encourage the transition to agroecology by clearly identifying the redesign of farming following agroecological principles and practices as an important part of the future of farming, which is worthy of public support.
- Tiered agri-environment support systems can include whole-farm options, that encourage system-level change (for example organic farming) as part of mid-tier options.
- Any grant scheme criteria need to work for farmers who 'think outside the box' towards an agroecological transition.
- Support should be directed not only at agronomic changes but also at the social side of transition to agroecology as well as training and education (see above).

Acknowledgements

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New projects at ORC

Organic Techniques

This 6-month Defra-funded project will see how some of the well-proven farming techniques developed by the organic sector can provide the impetus for mainstream farmers to become more sustainable. Although organic farming accounts for a relatively small proportion of UK food production the sector has emerged as hugely innovative, employing novel solutions to reduce reliance on inputs while maintaining production but with limited resources. As well as considering what can be learnt from organic systems, the project will also assess opportunities, practicalities and barriers for translating best practice management techniques from organic to conventional farms, including examining potential impacts on farm incomes, productivity and risks. The research will review what is already adopted within conventional systems or is actively promoted through bespoke initiatives such as Agricolgy, Integrated Farm Management and LEAF Marque. The project is led by ORC in conjunction with Game and Wildlife Conservation Trust (GWCT), OF&G, Soil Association, Scotland's Rural College (SRUC) and LEAF - Linking Environment and Farming.

UK Regulation

The full title of this second 6-month Defra-funded project, led by ORC, is 'Reviewing of international approaches to organic regulations and labelling - production, economic and market access implications for UK'. The project partners are: Organic Services, an international consultancy based in Germany, EcoS Consultancy and FiBL. With our imminent exit from the EU, this project will provide information from which to review the national organic regulations for England and Wales following EU exit. The project will review regulatory approaches controlling organic production and provisions for trade in other countries, and summarise their strengths and opportunities. In addition, the project is tasked with exploring the organic labelling used by other countries such as those in USA and Norway.

SystemHealth

This 2-year project 'Farm system health in practice' follows on from the HealthNetworks project (ORC Bulletin No.122) and is also funded by the Ekxhaga Foundation in Sweden. The project will work with the established network of good practice example farms in different European countries to develop a set of criteria (a) for farm health measurement and (b) for practical knowledge multiplication. The group will develop the farmer principles further and conceptualise tools for health assessment and measurement of best practice outcomes on farms. Such a set of 'criteria' or 'properties' of a healthy farming system will be tested and validated on three organic farms in Europe. Future 'beacon farms', in different countries and environments, will be identified. In a second step, the project will assist farmer-to-farmer learning by developing a variety of stable-schools, workshops or other training events by the example farms. Through these events with a wide range of farmers in different countries, the health criteria and health measurement concept/tool will be under continuous adaptation and refinement. Criteria will also be identified for the successful transfer of the complex knowledge of farm health management.

Staff news at ORC

Rob Chappell

Rob joined us in March as our Fundraising Manager. Rob brings with him a wealth of fundraising experience. As Managing Director of the SMASH Youth Project in Swindon Rob has been their principal fundraising officer since 2009 raising funds from a wide range of sources, including Trusts and Foundations, corporate sponsorship and direct community giving. He has also been involved in fundraising for a number of smaller community groups, both directly and in an advisory capacity. Rob is also Managing Director of MiRo Psychometrics and is a consultant, trainer and facilitator working with businesses and other organisations on workplace psychology, group decision making, consultation and communication.

Kevin Waldie

Kevin Waldie, our agroforestry research communicator, left us at the end of February. Kevin made a great contribution to building up the

presence of our agroforestry work on social media as well as condensing four years of research from the Agforward project into a suite of innovation leaflets. He leaves us with a great legacy of videos ranging from capturing participants' perceptions at agroforestry workshops, to getting a cow's perspective of eating tree fodder. We wish him well and hope we can collaborate with him in the future.



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Practical soil assessment methods for different horticultural systems

The GREATsoils project ran for three years and came to an end in March 2018; it was a collaboration between the Organic Research Centre, the Soil Association and Earthcare Technical, and was funded by AHDB Horticulture. **Anja Vieweger** and **Dominic Amos** report from their work with horticultural growers across the UK, who have selected, tested, and rated different practical soil assessment tools for their specific growing systems.

GREATSOILS



During a two-year field study as part of the GREATsoils project, UK growers from different horticultural systems such as field vegetables, top fruit and protected cropping systems have selected, tested and directly compared a number of promising (to them) soil assessment tools in their own fields. The methods were relatively new to the growers in that they have seldom used them before, but they were seen as interesting new approaches, practical and relatively easy to use, cheap and most importantly seemed to deliver useful results to inform sustainable soil management.

The aim of the field comparison of soil assessment tools was on one hand to (re-)connect growers with their soils, increase their confidence to personally assess and measure the health of their soils, and to evaluate which indicators might be most useful and relevant to monitor in their specific circumstances and horticultural systems. On the other hand, this work aimed to identify if certain horticultural systems, such as field veg, top fruit or protected cropping systems, might require their own specific soil assessment methods, combinations of methods or individual interpretation of results.

The outcomes of this study are a set of recommendations for specific horticultural systems, based on the practical experience of growers who have tested and compared different soil assessment methods in their fields. The recommendations reflect their feedback on each individual tool, as well as the feedback from a larger group of growers and consultants, who have followed the project and participated in field days and system specific workshops over the past two years.

The outcomes clearly show that simple and practical soil assessment tools can be highly useful to growers who:

1. Aim to evaluate the health of their soils themselves,
2. Wish to monitor changes in their soils over time (e.g. structure, fertility etc.), or

3. Aim to assess the effects of certain soil management strategies and activities that they perform.

The study confirmed that different horticultural systems need different soil assessment methods. They also showed that growers can benefit greatly from (continuously) trying out different and new approaches of soil assessment themselves, and over time develop, combine or adapt practical tools that suit their own specific system the best. The three documents of recommendation developed from this work are focused on top fruit, field veg and protected crops as examples of the main horticultural systems in the UK. The documents are also available for free download on the ORC and the AHDB GREATsoils websites, and their content is summarised in the following sections of this article. For more information on different practical soil assessment tools and links to where they are available, please refer to the AHDB Information Sheet 05 - Soil Assessment Methods.

Soil assessment tests evaluated and rated by growers

1 = low; 5 = high rated by growers	Skill required	Time input	Cost input	Suitable for	Not suitable for	Comments from growers
Spade diagnosis (depth 30cm)	1	1	1	Easy, quick, good indication of soil health, test general impression of the soil status	Subsoil assessment, quantitative nutrient levels	Most common method used, very easy and informative, 'spade is always with me'
Plant health monitoring (current and previous crops, weeds)	1	1	1	Early signs of nutrient deficiencies or compaction	Specific or qualitative information	Seasonal, need some experience and additional tests for details
Total soil organic matter (SOM) (usually in %)	1	1	1	Total SOM (stable and inert fractions of SOM)	Monitoring labile SOM (providing/ releasing energy and nutrient)	No need to do annually, need specific sampling technique
Visual soil assessment tools (eg AI/DO Healthy Grassland Soil methods)	1	2	1	Good overview of a wide range of soil health indicators (roots, worms, soil structure, colour)	Quantitative assessment of nutrients	Assessment speed comes with experience, easy to learn, need the tool only at first
Standard lab test (macronutrients and pH)	1	2	2	Soil nutrient content (N, K, Mg and pH)	eg soil life, structure, compacted layers, root development	Regularly done, directly informs fertilizer strategy
Visual evaluation of soil structure (eg STIUC VESS tool)	2	2	1	Soil structure and compaction detection	Quantitative assessment of nutrients	Some specific knowledge required
Earthworm counts	2	3	1	Good indicator for soil structure and health, soil life and activity, soil biodiversity	Quantitative assessment of nutrients, subsoil assessment	Seasonal fluctuations, some skill required for species identification
Micronutrient test	2	2	3	Trace elements/ micronutrient levels in the soil	eg soil life, structure, evaluation of compacted layers	Done only if deficiencies suspected in plants
Soil pit/profile (depth range 30-150cm)	3	3	1	Visual assessment, horizons and exact location/depth of compacted layers	No quick results, is a rather destructive method, location of sampling important	Very useful results if done properly, good for structure assessment
Soil health test	3	2	3	Measure pH, available P, K, Mg, texture, total SOM and respiration rate	In-depth evaluation and meaningful results/conclusions	Soil required for interpretation of overall results, eg respiration rate
SOM balance modelling tool	5	5	2	Input/output estimation of SOM levels on field or farm level	Beginners in SOM assessment, basic day-to-day assessment	Not commonly used in UK yet, but might be a promising planning tool
Soil life suites (eg food web tests, enzymatic activity, basal respiration etc.)	5	2	5	Bacteria and fungi number, species and diversity (no readers yet)	eg soil structure, compaction evaluation	Skill required for adequate sampling and high skills for interpretation

INFORMATION SHEET 04 Soil assessment methods

Figure 1: AHDB Information Sheet 05 - Soil Assessment Methods. Soil assessment tests evaluated and rated by growers



Method	Field vegetables	Top fruit systems	Protected crops
Visual Soil Assessment (VSA)			
Earthworm Counts			
Soil Health Laboratory Test			
Simple Infiltration Rates			
Simple Compaction Test			

Table 1: Growers of different horticultural systems rated the following methods according to how useful.

Visual Soil Assessment (VSA)

As there is no VSA tool specifically designed for horticulture available yet, the selected method for this study was the ‘Healthy Grassland Tool’ developed by Eblex/DairyCo. This tool consists of a two-page glossy soil scoring sheet, with colour pictures to compare the own sampled soil to, as well as a small pocketbook for further detail and information. It provides practical instructions as to how to sample a soil block with a spade and how to assess and compare it with the provided pictures and their scores.

The growers saw this tool as highly useful for more extensive horticultural systems such as top fruit systems. They stated that if the test is used regularly and on several locations in the field, it gives great insights into the general soil health in an orchard. They highlighted that it assesses soil structure, but also root development — pattern and vigour — as well as soil smell and colour; and provides the opportunity to count earthworms etc.; all providing a practical and quick way of getting an impression of the health of the soil and the cash crop. However, many growers in the field vegetable and protected crops sectors were more sceptical about its usefulness in very intensive horticulture systems. Especially when growing on beds (e.g. carrots or lettuce) or in highly intensive rotations for protected crops where the soil is worked very regularly and heavily, and soil structure assessment in the top 30cm is not possible or useful for most of the year. In such situations, timing of assessment is very important: e.g. in early spring, just before the field is ploughed and prepared for planting/sowing, when an assessment of structure is possible after the soil has had a short rest.



Earthworm counts

Earthworms are some of the more common and easily assessable soil organisms and are widely accepted as an indicator for soil fertility, health and organic matter. First, it is crucial to perform the counts in spring and/or autumn, when the worms are most active in the top layers of the soil. And secondly, when heavy tillage machinery and tools are used, earthworm populations can decrease very quickly. Ploughing, for example, will smear or close vertical worm tunnels and might cut some apart, but generally it might do less damage to earthworm populations and their habitat than for example rotating tillage machinery. The OPAL earthworm surveys guide used in this study offers a brief introduction to earthworms and explains its technique for sampling in a short and practical manner.



Many growers were very interested in earthworm counts, but none had any previous experience with this tool. After trying it out, field veg growers stated that the method can be very useful if a good base population of worms is already present in a field, and if an assessment ‘routine’ can be adopted for long-term monitoring. They also highlighted that expertise needs to be built up over time and the relatively substantial time investment needs to be taken into account. As for many soil assessment methods, earthworm counts are most useful when repeated regularly, maybe twice a year over a couple of years, to get used to the method and get a feel for the ‘normal’ number of worms and natural fluctuations of populations in the specific field or soil. Finding ten worms in a spade sample can be a lot in some soils, whereas in others it might be a very low result.



Simple infiltration rates

For this test we used a piece of 5cm diameter drain pipe, tightly fixed on the bare soil surface, then 100ml of water are added and the time is measured that it takes for the water to completely infiltrate into the soil. This is repeated at several locations throughout each field or plot. We found that for most soils this is a very efficient method, and growers were excited about this simple test and keen to try it out themselves.





This test was seen by the growers as a very useful tool for assessing soil structure and compaction as it is very easy to use and generates self-explanatory results that are easy to translate into soil management strategies. However, the method requires measuring the time it takes for 100ml of water to infiltrate into soil, and depending on the soil type, structure or moisture content, this can take rather a long time. So, while this tool was seen as highly useful and informative in lighter soils, and for a closer assessment of areas where compaction was previously suspected, in heavier soils it may take over 10 minutes per sample, which tends to stretch a grower's patience and therefore hampers the practical use of this tool in such conditions.

Simple compaction test

For this test, a blunt knife, soil probe or corer is pressed straight into the soil to get an impression of how much force or pressure is needed to get to a certain depth of the soil. This action is repeated in several locations across the field in an 'M' shape for example, or in different lines leading into a suspected compacted area of a field, or through tramlines into the bed etc., to get a feel for the differences.



This simple test also received very positive feedback from the growers. It was seen as a useful tool for assessing soil structure and compaction, although it is one of the most subjective of the methods compared by the growers. The level of resistance felt when pushing a blunt knife or soil corer into the ground is subject to personal interpretation and cannot be numerically 'measured'. Nevertheless, the growers can calibrate themselves by practising the method and testing it in different fields and soils etc. The test was seen as a very fast, cheap and easy to use method to locate areas of compaction in a field; and with some experience, even the depth of the compacted layer can be estimated.

Laboratory soil health tests, soil health index including respiration rates

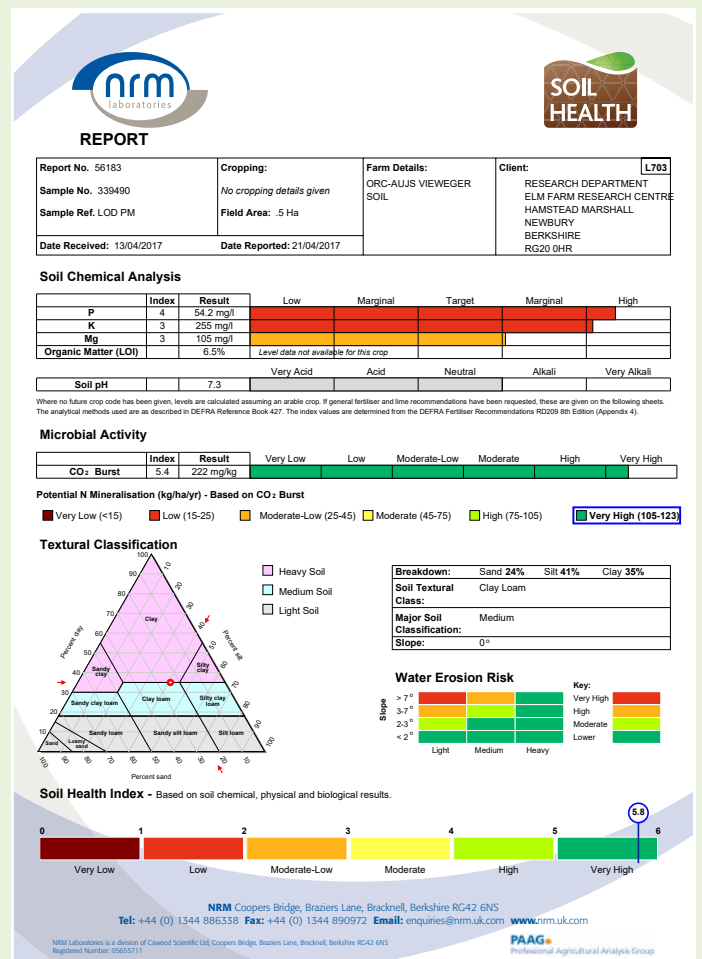
These are relatively newly developed laboratory tests, often providing an overall soil health index or soil health score based on chemical soil health indicators (P, K, Mg, pH, total soil organic matter), physical indicators (texture) and biological indicators (respiration), with certain soil management recommendations derived from the results.

This test was included in the study as many growers were very keen on increasing soil organic matter in their soils and are looking for a method to monitor organic matter over time. Total soil organic matter is very difficult to increase in the short term, e.g. during 3-5 years expected changes often do not exceed 0.5%. Total soil organic matter is often analysed by loss on ignition (LOI) or other laboratory methods that measure all fractions of organic matter in the soil, from the highly fixed 'inert fraction' over the easier decomposable 'stable fraction' to the highly reactive and manageable 'active/



Dominic Amos taking soil samples at Valefresco

labile fraction'. It is the latter that farmers and growers are most interested in, as they can potentially see effects of changes in soil management strategies relatively quickly. The active/labile fraction covers all soil biology (fungi, bacteria, etc.) and there are several lab tests currently available to measure this fraction (e.g. food web tests, enzymatic activity, microbial biomass C or basal respiration rates, etc.). These tests are often relatively expensive (e.g. up to £150-200 per sample for food web tests), and interpretation of their results, as well as correct sampling requires great skills and caution. Microbial communities in the soil often vary significantly during different seasons, weather conditions, moisture levels, temperatures and even times of day! So while these tests have great potential to provide useful information for soil management, it is crucial to be aware of the issues above when using them in practice. From a practical point of view, both microbial biomass and respiration rates could 'equally'





be used to assess labile soil organic matter fractions. As the NRM soil health test includes a measurement of respiration rates, amongst other highly relevant soil health parameters (P, K, Mg, pH, total %SOM, etc.), and for a relatively affordable price per sample (around £45), this test was chosen in our trials to evaluate its value for growers and to assess its potential to reliably inform soil management strategies to improve soil health and fertility.

Such laboratory tests were seen by the growers as potentially very useful in the future, once more information is available about soil biology indicators, and once useful testing procedures/protocols are developed for routine soil biology testing and monitoring over time. Particularly for intensive horticultural systems such as protected cropping systems it was seen as a very promising soil assessment method.

GREATsoils field labs

Green manures to increase nitrogen availability

This field lab, run in conjunction with Innovative Farmers (IF), aims to compare how different green manures affect the availability of nitrogen and key nutrients to a following spring green crop. A field trial has been set up in Lancashire with Chris Molyneux of Molyneux Kales who was keen to learn more about what different combinations of green manures could bring to his system in terms of nitrogen availability. Chris's motivation was wanting to save money by reducing his nitrogen bills but he has also seen improvements in drainage and the workability of the land. After discussions and planning with the farmer over trial design and set-up, the green manures were drilled in March and terminated in July 2017. A field lab open day took place in July prior to the termination of the green manure, with data on the green manure biomass and nitrogen content collected on the same day. Sampling has continued through the season with most of the results now available and shared with the group. An open day took place in March 2018, with results disseminated and discussions around whether to take the field lab forward with other growers in the area.

Improving soil health across a shared rotation

This field lab, also run with IF aims to improve soil health and organic matter in an arable/horticulture system where different businesses use/rent the same field at some point in their rotations. The collaborating growers and farmers assess the effects of each introducing more cover crops in their rotations on cash crop yield and quality as well as soil health and long-term sustainability. Growers often rent or share land that they may only use for one year of a rotation, meaning that any investments in soil health may not directly benefit them in the short term, especially if others in the rotation don't make similar efforts. Taking a longer-term view and working cooperatively should lead to benefits for all as well as helping to protect and enhance soil health.

The two arable farmers and the horticulture holding are each using a specific field, to conduct this experiment of bringing in more cover crops or adding organic matter to the soil. The cash crops on the three sites are potatoes (using PCN mustard ahead of the cash crop), sugar beet



(using a split field approach with radish cover crop, compost applications and chicken litter applications ahead of the cash crop), and lettuce (using oats as overwintering green manure ahead of the cash crop)

The group met for an update meeting in March 2017 to exchange first results and discussed their experiences during a field day on 17 July 2017 with a wide range of growers and farmers in the region. During autumn and harvest, the participants have collected data on yield and quality of their cash crops (e.g. sugar content of beets, skin finish of potatoes etc.) and these results are now being written up for a report, available soon on the Innovative Farmers website.

Amendments for soil health in fruit

Many growers are already using green waste compost or composted woodchip to add fertility and organic matter to their soils. However, there are also a range of products being promoted to boost the health and fertility of soils. Working out not only which of these will have a positive impact in specific farm systems and environments, but also which give the best value for money, is often difficult. To address this challenge, a group of growers has decided to undertake a field lab to carry out some practical comparison experiments of currently available soil amendments, with a focus on top-fruit systems.

Six growers have started to set up small field experiments to assess the effectiveness of different soil amendments, including enriched biochar, ramial (uncomposted) woodchip, composted woodchip, green waste compost and mycorrhizae inoculant. Each grower chose the amendments or combinations thereof according to their interest and suitability for the system. Individual monitoring programmes have been devised for each site to monitor the effects of the amendments and collect data on soil health and fertility parameters, as well as potential effects on tree/plat health, fruit quality and yield.

The group has just successfully applied for an IF research grant to support the trials and enable growers to carry out more in-depth on-farm monitoring of their trials to confirm the effects of the soil amendments; and fund the involvement of a researcher on each of the six sites to support them in this process, ensuring sound and reliable results.



Innovative Farmers round-up

*It's been quite a year for the Innovative Farmers network, with both membership and the number of active field labs increasing and the appetite amongst farmers and researchers for this type of participatory research growing. The network is now three years old and is really starting to support on-farm innovation amongst its members. ORC continues to work as a research partner and is now involved actively in 12 separate field labs with more in the pipeline. ORC Crops Researcher **Dominic Amos** rounds up our activity.*



Buckwheat at Purton House, just before mowing 17/9/17

Buckwheat for couch control

This group and topic have developed over the last year and is one of two groups we're running for members of the Organic Growers Alliance (OGA) and the Land Workers Alliance (LWA). This field lab is investigating the potential for buckwheat to reduce couch grass infestations in horticultural rotations, as an alternative to the energy intensive and soil structure damaging practice of bastard fallowing. The first meeting was held at Abbey Home Farm, near Cirencester, in February 2017 to develop and plan field trials, with participants, methods and trial design decided. Five growers took part in the trials, with buckwheat grown either as a pure stand or as part of a mixture (e.g. instead of mustard in Cotswold's Summer Quick Fix) and compared to a bastard fallow control.

A follow-up meeting was held in October 2017 to discuss the first year of trials and to plan year two. Each grower reviewed their trial and shared experiences with the group. The dry early summer conditions turned out to be perfect for bastard fallowing but a challenge for establishing buckwheat! It was decided to continue in 2018, having used the 2017 pilot trial to practise, gain experience of growing buckwheat and assessing couch.

An early season meeting is being planned for April 2018 to check progress and maintain momentum.



Green potato haulm in foreground has just had mesh cover removed, brown haulm in background (with artichokes) was uncovered. From trials at BHU, New Zealand

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Reducing potato blight with mesh covers

The second of our OGA/LWA groups, with trials due to kick off this spring. A meeting was held in December 2017 at Duchy Home Farm to develop and plan the 2018 field trials. The group looked at a range of novel approaches to managing potato blight on small holdings including mulching with grass, agroforestry and soil immunisation. The group decided on mesh covers as the simplest to do trials on. Work by Charles Merfield and the BHU Future Farming Center in NZ has found that mesh crop covers used to keep out the tomato potato psyllid pest also reduced foliar blight, with a correlation between foliar blight symptoms and the amount of UV light transmitted. Following on from the meeting a document has been produced that outlines trial design and assessment methods and will be shared with those taking part in the trial.

Cover crops for organic grass leys

This field lab, in conjunction with the Carswell Group, aims to investigate which spring legume mixes work best for their organic dairy farms. Farmers will monitor milk yield and milk quality as well as the cows' preferences for eating different mixes. After a preliminary year of trials with farmers collecting data on cover crop effects on weeds, discussions are taking place to shape year two of the field lab. Lindsay Whistance will continue to work with coordinator Matt Senior and agronomist Neil Mclean to plan year two of the trials. Farmers are due to drill crops and start trials in April 2018.

Compost tea

This field lab (reported on in ORC Bulletin No.121) has been looking at the use of compost teas, made by brewing compost in water to produce a dilute solution of microbes and nutrients, in arable cropping. The third year of trials at Hemsforth Farm in Dorset aimed to scrutinise evidence gathered from the previous two years. A fully replicated trial was run in two fields on a crop of spring oats investigating effects of compost tea application on the soil microbial community and on the crop yield. Cranfield University were brought in to help look at soil microbiology, in addition to SoilBioLab.

After a first year of largely positive results, that it should be stressed weren't gathered with particular rigour, and a second year of data that was more reliable if distinctly underwhelming, work took place in year three to establish a rigorous trial designed to help scrutinise evidence gathered from the previous two years. Results from year three were thus eagerly awaited.

Unfortunately, data indicated no effect on the microbial community, no effect on crop yield and no effect on ear



Sophie Alexander taking samples of compost tea during spraying at Hemsworth Farm.

disease, having had samples tested for *Fusarium*. However, an analysis of the tea during the field trial suggested that the tea making process was ineffective, failing to extract particularly high quantities of bacteria or fungi from the compost being used. Results were shared in a meeting in July 2017. Although the focus has been on Hemsworth for the past three years it is hoped to broaden out the trial with more farmers willing to make and test compost tea.

Producing efficient high-quality humified compost

This field lab is investigating the controlled aerobic composting method of producing compost. It is claimed that it can produce a fully nutrient and crumb stabilised compost, in the form of clay-humus-complexes and long-chain humic acids, as well as other high quality humus substances, within 6 - 8 weeks. ORC are working as researchers with the Land Gardeners on this trial. This year the group is looking into the effects on crop growth of different composts. Following a meeting at Wardington Manor in January 2018, a pilot trial was set up. The field lab will also look at effective in-situ compost testing methods, as well as some relatively cheap and accessible lab analysis of compost pile chemistry and physics.

One of the main research questions centres around identifying the microbial community of the controlled aerobic compost and this has presented a significant challenge to moving the field lab forward as sophisticated molecular analysis is needed to answer effectively questions of microbial diversity. Approaches have been made to various soil microbiology experts to participate in this lab and help investigate microbial communities. It is hoped that compost biology will be addressed by a Cranfield MSc student who will investigate the effects on soil microbial community at Wardington and test the compost in the lab.

Anaerobic digestate in organic arable systems

This AHDB-sponsored field lab is investigating anaerobic digestate as a bio-fertiliser to potentially enhance fertility and microbiology of the soil, and ultimately increase productivity and quality of organic cereal crops. It had developed from a farmer group of OK-NET Arable, an EU Horizon 2020 funded organic knowledge network. A field lab has been set up on two farms to look at the effects of digestate application at different rates on a following cereal crop.

Riverford field labs

Riverford Organic are backing farmer-led research by investing in three field labs. The trials will be coordinated from their HQ in Devon and led by Assistant Farm Manager, Ed Scott, but they're open to everyone. Growers can either join the group and replicate the trials on their own farms, or learn from what happens at Riverford.

A kick-off meeting took place at Riverford HQ in November with the topics for research presented and discussed. A more focused follow-up took place in January with the triallists from each topic to plan the 2018 experiments and further explore trial design and methodology. The topics under investigation are:

Comfrey teas for improved crop yields

Comfrey tea is reported to be a very useful biofertilizer, with a particularly high potassium content. Growing it and making home-grown comfrey tea can be considered more sustainable than using products such as seaweed extract and may allow less productive parts of the farm to be used to cultivate the plant. As well as the trial at Riverford, with a commercial product being applied to a tomato crop, an additional trial at Organic Blooms will explore the efficacy of homemade comfrey tea compared to the commercial product.

Zone tillage for lower inputs and healthy soil

A machine is being developed to till strips in a pre-existing green manure leaving 2/3 of the land untilled. Three small pilot trials are being set up to test this system and record effects on crop yield compared to their standard farm practice of ploughing. It is hoped that the energy input of the strip tillage will be reduced compared to ploughing, with the system also offering advantages in terms of soil structure, protection against erosion and improved carbon sequestration. The question is can it work in a horticultural system without reducing crop yield? Trials will begin this Spring.

Hot water treatment to reduce leaf spot

This topic stems from interest in investigating how effective hot water seed treatment on leaf beet is in the field. Seeds are tested pre- and post-treatment for various diseases to determine efficacy but there appears to be a disconnect between the success of the seed treatment and any tangible benefits in the field. A trial is being developed to help determine if benefits from treating the seed can be determined in comparison to an untreated control.

The group were interested in improving nitrogen supply to their rotations and wanted to learn more about the potential of digestate to achieve this. As well as understanding the benefits for the following crop and potential side effects such as an increased weed burden, they also have to consider application methods and the cost of the product, including haulage.

After several planning meetings with the two participating farms in August and September 2017, field trials have been set up and digestate has been applied. The first data collection will take place in March with a meeting of the group due to be held shortly after.



Organic wheat varieties

This lab emerged from an AHDB organic benchmarking group. An initial face to face meeting took place at Bradwell Grove Farm in Oxfordshire to plan the trial and discuss which wheat varieties to include, with ORC's Ambrogio Costanzo the researcher assisting in planning the trial. A parallel trial is being run by Pearce Seeds in Dorset.

The plan is to turn the field lab into a participatory variety trial, using farmers' experiences and needs to help assess and rank varieties. It is hoped to build a network of farmers who might eventually form a core group involved in decentralised, participatory variety testing and potentially pre-breeding, with the inclusion of one pre-breeding line from work at the John Innes Centre.

Intercropping in arable systems

Interest in intercropping has been growing amongst conventional and organic farmers for some time. This field lab will look at how farmers can use intercropping to make their arable systems more sustainable and productive. It has been developed by ORC researchers Charlotte Bickler and Katie Bliss since summer 2017, through the EU H2020-funded DIVERSify project: Designing InnoVative plant teams for Ecosystem Resilience and agricultural Sustainability. Initial meetings have been held at John Pawsey's Shimpling Park Farm, ORC's Winter Organic Cereals event and partner events organised by LEAF and Stockbridge Technology Centre (who are hoping to establish an intercropping group for the north of England).

The field lab kicked off properly with a meeting at ORC in January 2018 to plan the trials. Group members will be growing various cereal-legume intercrops, along with novel combinations such as Spring Oil Seed Rape and Faba Bean, and Carlin Peas and Spring Triticale. On-farm trials will be corroborated by on-station trials in our research plots at Sonning in collaboration with the team there who also have an interest in this subject. The next field lab will be held in May, NOCC18, and Open Farm Sunday offer chances to see some of these crop combinations in the field.



Andy Howard, host of the next meeting speaking at Shimpling Park Farm

In the pipeline

Other topics being explored as potential field labs are: Testing an original diagnostic and feed adjustment method based on the observation of livestock; Soil health with an OGA/LWA group; Horticultural costings with an OGA/LWA group; Bioeffectors with a group of arable farmers keen to look at microbial inoculation.

Join ORC's Farmer and Business Supporters' Group

ORC is at the forefront of UK research on organic and other agroecological approaches to sustainable and healthy food production, including knowledge exchange and policy advocacy on behalf of organic farmers and businesses.

While much of this work is supported through project funds from the EU, governments and foundations, we rely heavily on donations from individual supporters to provide vital underpinning for our activities.

Regular monthly or annual donations help us to plan ahead with greater confidence about our ability to undertake new initiatives on behalf of organic farmers and food businesses.

Will you join the growing band of farmers and businesses willing to support us like this?

We're not just asking for your support – we're offering something in return to say thank you!

FAB supporters have:

- The opportunity to attend FABS annual events to hear about our current activities, with space to discuss your priorities for research, information and policy initiatives
- Opportunities to participate in bids and funded projects
- Networking opportunities and events
- Pre-publication access to research reports, technical guides, bulletin articles, conference papers and other publications, with an invitation to feedback comments where appropriate
- Access to the research team and a quarterly update on progress and staff news, with links to on-line resources, for each of the main areas of ORC activity
- Links to and (optional) membership of relevant on-line discussion forums
- Discounted access to ORC conferences and events, including our annual conference
- Free subscriptions to ORC's printed bulletin, monthly e-bulletins and the Organic Farm Management Handbook every two years or so.

Please give us your support and sign up today!

To join the ORC FABS group, please pledge a regular annual donation (or monthly equivalent) of at least:

£100 (Supporter)

£250 (Bronze)

£500 (Silver)

£1000 (Gold)

£5000 (Platinum/Organic Ambassador)

We are keen to recognise the different levels of support, but all supporters will receive the same benefits.

To register, please contact Gillian Woodward at ORC: 01488 658298 ext. 554
gillian.w@organicresearchcentre.com

Regional organic action plans across Europe

In the UK, we currently have an organic action plan in place in Scotland and one is under development in England. However, many other European regions are developing their own, including some as part of an Interreg Europe funded project SME Organics. The focus is on helping food businesses develop products and the market for organic food. Nic Lampkin has been advising the eight regions on behalf of the IFOAM EU Group and reports on progress to date.

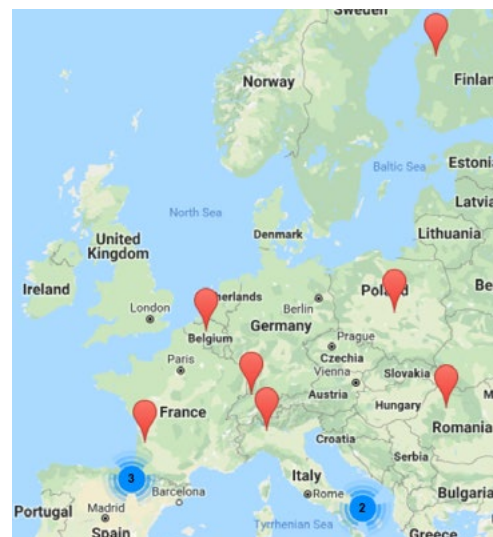
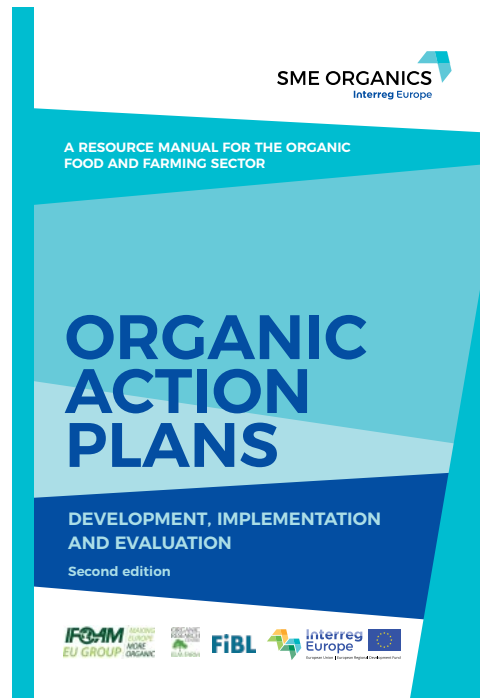
While EU policies, in particular conversion and maintenance support, have played an important part in the development of the EU organic sector, regional authorities have huge potential to prioritise other forms of support for organic approaches, such as market development. The EU's 2014 Action Plan for Organic Food and Farming encourages regions to find the most adequate policy and funding mix to support the development of the regional organic sectors.

SME Organics brings together regional governments, development agencies, organic food and farming groups, enterprise bodies, universities and research institutes from eight regions across Europe over a 4-year period 2016-2020. The regions are Lombardy and Apulia in Italy, Nouvelle Aquitaine in France, Navarra in Spain, Northwest Romania, Aargau in Switzerland, South Ostrobothnia in Finland and Lodzkie Region in Poland.

The overall objective of SME-Organics is to improve policies and programmes under the Investment for Growth and Jobs goal in order to enhance the competitiveness and sustainability of small and medium-sized enterprises (SMEs) in the organic sector. The aim is to support SMEs and enhance the growth capacity of the entire organic regional sector in regional, national and international markets.

As part of a participatory learning process, partners and stakeholders exchange and share experiences of best practices for devising Organic Action Plans. The development of these action plans covers a number of areas such as production and processing, commercialisation and marketing, training and advice, and organic value chain efficiency and governance.

The main outputs of the project include: a Method Guide, Diagnosis reports of the regional organic sectors, a Good Practice Guide, a Policy Road Map, Regional Policy



Location of SME partners

Briefs and Regional Action Plans, with recommendations for integration into RIS3. Stakeholders benefiting from the project include all actors in the organic value chains at the regional, national and EU level: cooperatives, agri-food industries, retailers and distributors of organic products, advisory services, chambers of commerce and agriculture, experts on regulatory issues of the organic sector, policy makers, EU's DGs and other initiatives in the organic sector.

The first phase from 2016 to March 2018, focused on the development of organic action plans in the eight regions, which were presented at a meeting in Brussels on 23rd March. The meeting also provided the opportunity to launch the new method guide or manual on Organic Action Plans: Development, Implementation and Evaluation.

Edited by Stephen Meredith (IFOAM EU), Nic Lampkin (ORC) and Otto Schmid (FIBL), with research input from Max Hubbard (ORC), the manual provides a guide to the key issues that need to be considered during the different stages of the organic action plan process. The manual builds on a first edition published ten years ago as part of the Organic Action Plan project (www.orgap.org), which also saw the development of a toolbox for the evaluation of organic action plans.

The final versions of the action plans will be published on the SME Organics website in the near future. The next phase of the SME Organic project will see the eight action plans implemented over the next two years, with a monitoring programme in place to record their achievements.

Further information:

The SME Organics project: <https://www.interregeurope.eu/smeorganics/>
The new Organic Action Plan manual: http://www.ifoam-eu.org/sites/default/files/sme_organic_action_plans_manual_second_edition_2018.pdf
The Organic Action Plan Evaluation toolbox: www.orgapet.orgap.org



Keeping up with the neighbours — The organic market in Europe 2016/17

Are our European neighbours getting ahead of us? **Susanne Padel** attended a workshop session at Biofach in February 2018, which included an overview of the European market in 2016 and key trends from the four largest European markets in Germany, France, Italy and the UK. This suggested that they are.

The European market grew by 11.4% (12 % in the EU) from 2015 to 2016, and was estimated at €33.5 bn. Among the countries with the strongest market growth is our close neighbour Ireland, where the organic market grew by 21.8%. Denmark is the market with the highest estimated market share at 9.7% organic and Swiss consumers spend about €274/head (followed by Denmark €227/person and Sweden €197/person, compared to the UK with €38/person) on organic food. When I first started comparing market trends in the EU a few years ago, the UK, Italy and France were competing for second place; this indicates that the UK is now clearly falling behind the other larger European markets. A similar trend is visible in organically cultivated land area, which is growing in Germany, France and Italy (Figure 1). It is also interesting to look at the share of different sales outlets. In the UK multiple retailers account for less than 70% of the market for the first time, with slower than average market growth. In Germany supermarkets experienced stronger growth, and account for less than 60%, and in France and Italy the share is even lower with about 40%. Discounters were one of the drivers of growth in Germany, whereas growth in the UK was stronger in the independent and home-delivery sector (including box schemes).

Germany

Germany (presented by Diana Schaak from AMI) remains the country with the largest organic market in Europe, in 2016 it was estimated to be worth €9.5 bn. Germany experienced slightly slower growth than in previous years, with about 5.9% growth between 2016 and 2017, partly driven by growth in the discount sector. The independent organic stores, historically one of the strong engines of the German market, are reporting slower growth. The growth in the organic market comes from increases in volume, e.g. more organic products on the shelves, whereas growth in the conventional sector is mainly price related. Alongside growth in the organic retail market, Germany also noted strong growths in the land area (+14% in 2016) with growth also expected to be confirmed for 2017.

France

The report from France (presented by Marc Arnaud from Agence Bio) also presented a very dynamic growth picture, with 22% growth between 2015 and 2016 and growth in land area of 15% in the first half of 2017, compared to the year before. Organic area now accounts for 6.5% of all Utilisable Agricultural Area (UAA) in France. France is now firmly the second largest market in Europe and the third largest in the world after the US and Germany, estimated at €6.7 bn in 2016. Market growth rates of above 15% were reported for the first half of 2017, mainly in the fruit and veg sector; and growth was particularly strong in the multiple retailers. In France, data about the organic market are collected by a government

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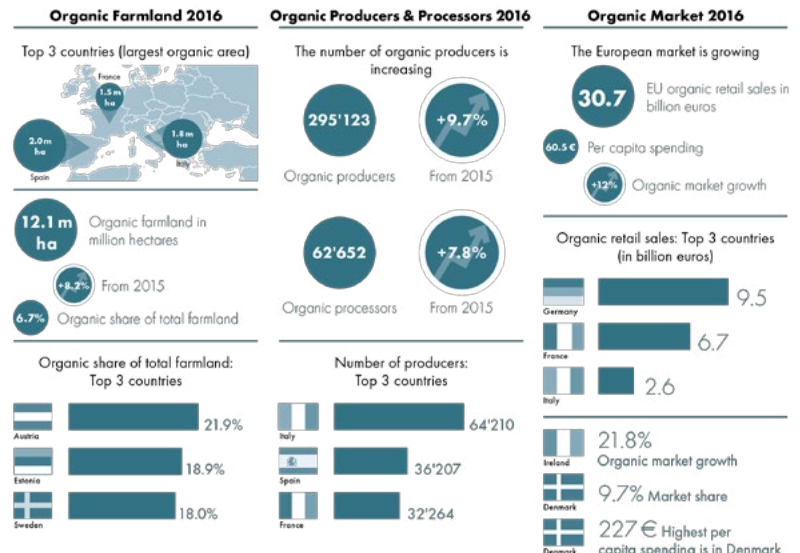


Figure 1: Organic agriculture in the European Union 2016

Agency (Agence Bio). According to the 2015 Agence Bio/CSA barometer, 98% of French people know the AB brand, which is shown alongside the Euro-leaf on French organic products.

Italy

In Italy (presented by Francesco Solfanelli from Ancona) the strong market growth (+17% in supermarkets between 2015 and 2016) also drove strong growth in the land area, but the use of labels is not so uniform as in France, with about 21 different private supermarket labels in use now.

United Kingdom

The UK position was presented by Lee Holstock from Soil Association Certification. He highlighted key trends including growth in organic sales through supermarkets of 4.2% in 2017, independent retailers 9.7%, and home delivery, including box schemes 9.5%. Sales in foodservice (which includes catering and restaurants) grew by 10.2%. Dairy accounts for nearly 29% and fresh produce, up 6.5%, had the highest value growth.

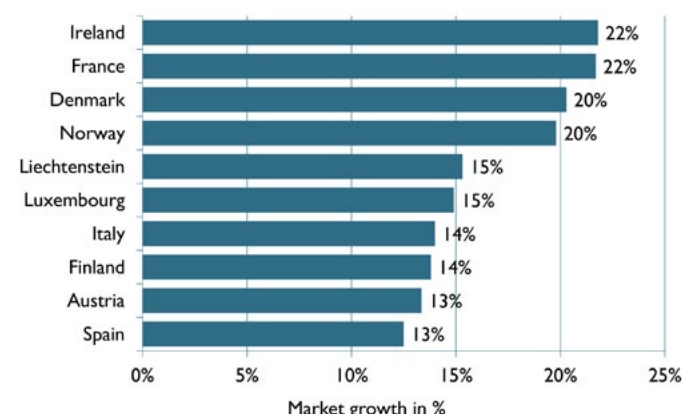


Figure 2: Europe: The countries with the highest growth of the organic market 2015-2016. Source FiBL-AMI Survey 2018

Source: FiBL



Events and announcements - details at www.organicresearchcentre.com

Events

11 April 2018: Cultivating diversity and food quality
DIVERSIFOOD forum with policy makers and stakeholders - Brussels.

25 April 2018: Practical biofertiliser and fermenting
One day course at Ragmans Farm.

2 May 2018: Intercropping in arable systems. Field lab meeting at Andy Howard's Bockhanger Farms in Kent.

9 May 2018: Innovative Farmers Network Day 2018
Field lab news and networking, Sheepdrove Farm, Berks.

10 June 2018: Open Farm Sunday at Sonning Farm.
We will be showcasing our trials at Reading University Crops Research Unit.

13 June 2018: Wheat Landraces for Healthy Food Systems. 1st International Conference, Bologna, Italy.

28 June 2018: Regenerative Agriculture and Chromatography. Six-day course at Ragmans Farm

3 July 2018: National Organic Combinable Crops 2018.
OF&G event hosted by Mark and Liz Lea, Green Acres Farm, Shifnal, Shropshire.

10-11 July 2018: Trees and livestock. Farm Woodland Forum Annual Meeting at GWCT Allerton Project, Leics.

ORC is recruiting

Principal Researcher and Livestock Team Leader

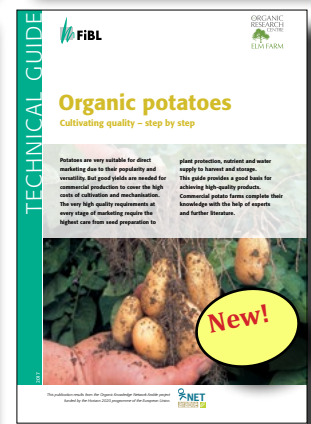
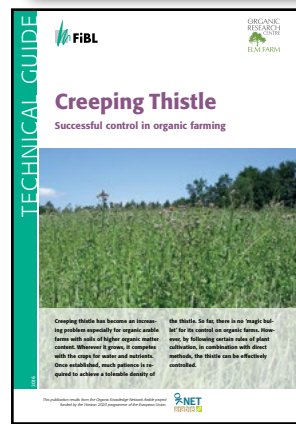
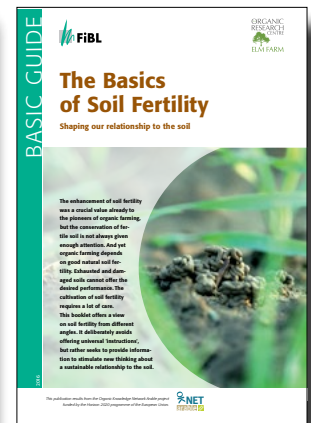
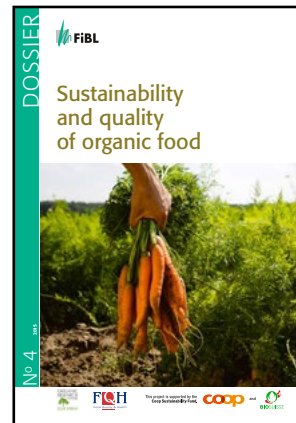
The post will be responsible for all areas of the programme including delivery, development and dissemination of the research as well as management and development of staff. Closing date for application: 10am Monday 16th April 2018

Business Development officer

We are looking to appoint an ambitious and enthusiastic Business Development Officer to grow our commercial activities and income. You will actively drive new business, including developing and marketing a portfolio of products and services, as well as managing the resultant contracts. The closing date for applications: 9am Monday 9th April 2018.

Facilities assistant to assist with the operation of our offices, including maintenance, general repairs, events and reception activities. Closing date: 9am Monday 9th April 2018.

ORC/FiBL technical guides



Download or order hard copies: <https://tinyurl.com/ORC-pubs>

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