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Organic Research Centre

Bulletin

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News in brief

Under 35s “love organic”

Shoppers aged under 35 are twice as likely to want organic food as those over 35. They are also more likely to cook from scratch, aspire to shop ethically and waste less food according to the latest IGD ShopperTrack research (www.shoppertrack.igd.com), which reveals that:

- 26% of shoppers under 35 expect to buy more organic food over the next 12 months, compared to 13% of over-35s;
- 30% are prepared to pay extra for premium quality food (compared to 16% of over-35s);
- 19% of the under-35s aspire to use specialist stores (like butchers, bakers and fishmongers) more over the coming 12 months (compared to just 8% of over-35s).

Monsanto GM Maize attacked by US Environmental Protection Agency

A review by the US Environmental Protection Agency describes Monsanto's insect resistance monitoring strategy for Bt maize in the US Midwest as “*inadequate and likely to miss early resistance events*”. It also highlights how the crop itself may be causing the problem and how a failure to enforce mitigation measures, like refuges and rotations, is making it worse. The review confirms that in Iowa and Illinois a major pest of maize, the western corn rootworm, has developed resistance to the toxic Cry3Bb1 protein present in Monsanto's MON863 and MON88017 Bt maizes. It goes on to report “*severe efficacy issues for Monsanto's Cry3Bb1 trait*” in Minnesota and Nebraska.

According to GM Freeze (www.gmfreeze.org) these findings are not a surprise. Laboratory breeding experiments with western corn root worm have demonstrated that, “*Resistance evolved after just three generations of selection on Cry3B maize.*”

Monsanto's approach to monitoring the problem comes in for severe US EPA criticism because of:

- sampling insects too far from damaged crops;
- adopting too high a damage threshold before further action is taken;
- failure to sample for resistant adults from problem fields;
- failure to take follow up samples in the next season if adults were not sampled.

New guide to farm homoeopathy

Homoeopathy at Wellie Level (HAWL, www.hawl.co.uk) has published a new guide ‘This is Farm Homoeopathy’ which describes the experiences of many farmers, organic and non-organic, using homoeopathy for treating farm livestock. The guide focuses on the practicalities, benefits and evidence for using homoeopathy on the farm. It also gives information on the 3-day practical homoeopathy courses that HAWL runs at Duchy Home Farm, Tetbury, twice a year in Spring and Autumn. The guide and course information can be obtained by phoning 01666 841213 or writing to: HAWL, Church Cottage, Alderton, Nr Chippenham, Wiltshire, SN14 6NL.

First SOLIBAM newsletter launched

The newsletter introduces the work programme and partners involved in this international, multi-site project that is looking at breeding and management strategies for cereals, tomatoes and broccoli. This is the first newsletter in a series that will be produced during the project, which runs from 2010 to 2014. Within the project, ORC leads work focusing on the exploitation of diversity in breeding. More information about SOLIBAM can be found, and the newsletter accessed, at www.organicresearchcentre.com.

IFOAM EU conference on resource efficiency and food security

ORC's Susanne Padel presented a paper at the IFOAM EU Group's conference in Brussels on 9th November 2011. The conference theme was resource efficiency and food security and considered the implications of increasing resource scarcity, the threats this posed to food security and the potential of organic farming as a solution and an alternative to ‘sustainable intensification’ models currently being promoted. Susanne's paper was on the role of organic partnerships as a means to develop improved organic systems and innovative solutions to some of the challenges we face. A summary report of the conference outcomes and proceedings can be found on the IFOAM EU group website: www.ifoam-eu.org.

Results of Potato Virus Y study published

One of the most serious diseases of potato is caused by Potato Virus Y (PVY). As seed tubers infected with this virus yield substantially less than uninfected ones, it is essential for potato production that seed lots have low virus levels. ORC's Thomas Döring has been involved in a study published this month in the journal *Annals of Applied Biology*, which points to non-chemical control options for PVY in Northern Europe.

In the study, not a single aphid was found colonizing the potato plants, despite substantial variations in virus levels. This suggests that the practice to spray insecticides frequently fails to act against PVY and its vectors.

Kirchner SM, Döring TF, Hiltunen LH, Virtanen E, Valkonen JPT. 2011. Information theory-based model selection for determining the main vector and period of transmission of Potato virus Y. *Annals of Applied Biology* 159:414-427

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Lawrence Woodward OBE

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Editorial: Sympathy for the Devil?

"Please allow me to introduce myself; I'm a man of wealth and taste"

Recently, I attended a dinner at a prestigious location followed by a speech from Professor Chris Leaver, formerly Head of the Department of Plant Science at the University of Oxford and now Emeritus Professor. His talk was about how we need GM food to deal with the problems of feeding the dramatically increasing global population. You can probably guess the gist.

I found the audience remarkable; full of professors, doctors and generally learned people. This was not a collection of hired hacks or sycophants. Some of them might draw on industry funding but this was largely an audience – not engaged in agriculture or food – whose accomplishments are based on intellect and independent thinking. And they were overwhelming in favour of GM.

"But what's puzzling you: Is the nature of my game"

After the talk I was the only person to express any opposing view. There may have been others holding contrary opinions – but judging by the reaction when I had to forcibly challenge one of Prof. Leaver's more outrageous claims – there weren't many.

Leaver did a good job. He played the rational scientist and the audience was predisposed towards what they think is rational, scientific and technologically progressive; and against anything that could be labelled emotive, political, campaign driven, anti-science and backward.

Afterwards, some people, admitting they knew nothing about the subject, said I had made good points but they would still "take Leaver's side". GM, they sense, represents science, progress and rationality and anti GM the opposite.

Here was some of the country's intellectual elite being unthinking and unintelligent. Yet they wield enormous influence – on politicians, the media and ultimately the general public – and currently they are on the side of GM.

Listening to Prof. Leaver was bizarre; phrases I have used poured forth without hesitation. "Business as usual is not an option"; there are urgent problems with climate change, with soil erosion, with water scarcity, fundamental change is necessary and urgent and – believe it or not – there is no technological fix or magic bullet. But then he seamlessly flowed into the case for GM being the only credible approach to solving these problems.

The sole hiccup was when I pointed out that he had failed to mention IAASTD, the one truly independent assessment of technologies that might feed the world, which concluded that GM had little to offer and that only one country – the US – did not endorse its report. He simply denied one point and ignored the other and the audience, which did not want to hear about any conflicting science, shuffled. Hiccup over.

After all Prof Leaver and his ilk have such impeccable credentials no polite member of the professional elite questions their rationale or drivers or asks whether we are indeed in a world where "heads is tails".

This kind of scenario is being played out repeatedly as the GM lobby steps up its efforts to sweep away the restraints society has placed on it. We too have to gear up.

We have excellent organisations doing excellent work: their research, science and arguments are a match for GM protagonists. But we are losing in some influential sectors and, I fear, in the all important "middle" of society. We are not cohesive enough; too often we come across as those "who would say that wouldn't they". We have to galvanise people "in the middle" who oppose or are worried by this technology; field like against like; and work more effectively together.

According its co-writer, Rolling Stones' Keith Richards; "Sympathy For The Devil is a song that says: Don't forget him. If you confront him, then he's out of a job".

Devil, genie or just folly – it doesn't matter, GM needs to be confronted with renewed vigour and new tactics in 2012.

Lawrence Woodward

Battling with bunt

For two years in a row, weather conditions – cold winters and dry springs – have been conducive to the development of common bunt, one of the most serious seed-borne diseases in organic wheat. Farmers and researchers in the UK, France and Germany have reported high levels this year including on our trials at Wakelyns in Suffolk. Sally Howlett, Helen Pearce, Louisa Winkler and Thomas Döring report on the current situation and ways to fight the disease.

Using a part of the wheat harvest as seed for the next growing season is important from various perspectives: it is crucial for conserving rare crop varieties; it makes economic sense to save on input costs; it gives farmers some independence when seed prices are volatile; and it provides the basis for adaptation of genetically diverse crops to the environmental conditions prevailing on the farm [1, 2]. However, seed saving can be risky, because what is multiplied from one generation to the next includes not only the seed, but also, potentially, seed pathogens.

Bunt alarm at Wakelyns

Common bunt symptoms were first observed in the field at Wakelyns on 18th July 2011 in three plots of the variety 'Tanker' in the Wheat Breeding Link trial. Whilst no other plots were as badly affected as the Tanker, at least one infected ear per plot could be found in most places. Bunt was also observed in non-organic trials next door to Wakelyns at Metfield.

After harvest, we sent six grain samples for disease analysis. The results were horrifying: the threshold for bunt contamination for certified seed is one spore per grain, but contamination levels at Wakelyns were above 36,000 spores per grain. Even a sample which showed no visible signs of infection or the characteristic fishy smell had a spore count of 56 per grain.



Bunt-infected wheat ears showing gapping glumes and signs of black exudates from spore-filled grains. Photo: L Winkler

Options for bunt control

In conventional agriculture seed is routinely treated with synthetic fungicides which reduce the level of seed borne diseases. This is not an option for organic farmers but there are alternative ways of controlling bunt.

The basis for an organic approach to integrated bunt control is crop rotation. By avoiding continuous wheat or short gaps between wheat crops, bunt can be held at low levels for long periods [3, 4].



Grains from a bunt-infected ear, broken open to show how the endosperm is completely replaced by a mass of black fungal spores. Photo: S Howlett

The use of certified seed provides an insurance against high bunt levels - grain samples with more bunt spores than one per grain will fail seed certification. Where the intention is to use on-farm saved seed, field inspections for symptoms and spores are helpful to gauge whether keeping seed for the next generation is sensible.

Laboratory tests are particularly important because infection at low levels is not generally observable in the field. At Wakelyns, there were no visible symptoms of bunt prior to 2011, but lab analyses from previous years did show the presence of bunt spores, with counts gradually rising to 3 per grain in some 2010 samples.

This should have prompted us to take remedial action but because bunt had never previously been a problem and given the long rotation, with cereals grown in only one year in six in any of the trial areas, we did not anticipate the implications of this apparently low level of infection.

There are products and methods organic farmers can utilise for seed treatment (dressing). One is the use of a plant-derived product such as Tillecur (mustard-based) which is marketed in Germany and is reputed to be highly effective [3]. Other options of direct control, such as hot water, steam treatments or simply brushing the seed, will reduce the spore load significantly but often fail to disinfect as thoroughly as required for certified seed.

There is also the simple but important measure of ensuring that the combine is cleaned thoroughly between fields in order to avoid carry-over.

Breeding for bunt resistance

A potentially powerful control approach is to grow bunt resistant wheat cultivars. Fifteen different genes are known to convey resistance. However, as with many other plant pathogens, there is no gene in wheat that provides resistance against all bunt races. It is necessary to know



which bunt races are prevalent in a specific region in order to determine which resistance genes to deploy.

Unfortunately, knowledge is limited on the geographic occurrence of different bunt races [4]. In addition, for most currently traded wheat varieties, it is unknown which bunt resistance genes they possess and against which bunt races they are resistant.

A recent review on bunt pointed out that “breeding programmes for common bunt resistance no longer exist in most wheat-growing countries” [4]. With the introduction of hexachlorobenzene as a chemical seed treatment, interest and investment in breeding for bunt resistance dropped to almost zero, leading to virtual dependence on a single strategy to control bunt: chemical seed dressing.

The lack of breeding programmes for bunt resistance has constrained knowledge on the bunt pathogen and also means that resistant varieties are currently not available. The vast majority of widely grown wheat cultivars in Europe are susceptible to common bunt. In recent screenings only about 1% of lines tested were found to have some bunt resistance [4]. In addition, the genetic base of existing resistance is narrow, making it vulnerable to the emergence of new races. Moreover, resistance has mostly been found in agronomically inferior lines and it has proved difficult to select lines with both bunt resistance and high agronomic performance.

Currently, organic farmers have little choice but to rely on varieties that provide no protection against bunt, and breeding programmes are needed to address this. However, there are encouraging research projects and breeding activities in Switzerland, Germany, Austria and Denmark aiming to develop varieties for the organic market. Varieties that have shown good bunt resistance in Switzerland include the winter wheats Levis and Titlis and the spring wheat Toronit, while winter wheats Batis and Renan showed high infection levels. The only tested variety originating in the UK (Reaper) showed bunt levels in the middle range [5]. In another study, good bunt resistance was found in the German variety Tambor and the Swedish variety Stava [4]. Nonetheless, it is clear that breeding efforts for bunt resistance need to be increased and broadened throughout Europe.

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What is bunt? – Life cycle and symptoms

Common bunt, or stinking smut as it is also known due to its strong and unpleasant fishy smell, is caused by the fungi *Tilletia caries* or *Tilletia foetida*. It is a plant disease with the potential to cause considerable yield loss in cereals, predominantly wheat, and even complete crop failure in the most severe cases. The pathogen produces spores which germinate on the seed surface, infecting the growing seedling. Although plants are infected at an early stage in their life cycle, visible symptoms are difficult to spot prior to heading. This is because the fungus develops inside young seedlings following the growing point of the plant (i.e. they develop systemically).

Whilst the flag leaves may exhibit yellow streaks and plants might be slightly reduced in height compared to non-infected neighbours, there is generally little external evidence of the disease until ‘bunt balls’ appear at around the soft dough stage. These look much like darkened grains in size and form but are completely filled with black spores which resemble soot in dry conditions and viscous ink in wet weather. All grain is lost from the infected ears and even low levels of infection can contaminate healthy grain via the combine harvester or during post-harvest processing. As intact bunt balls can survive in the soil over winter, even freshly sourced seed can become infected if a second cereal is drilled on the same site. Dry conditions in spring tend to favour the survival of spores and it can be more of a risk when emergence is slow or untreated seed is re-sown year on year.



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The Heritage Loaf

Mark Abel and his family took over the running of Denver Windmill in 2008, and restored it to the commercial production of flour for the first time in 60 years. As well producing stone-ground flours, the family run an on-site bakery producing around 20,000 loaves per year, all twice-proven and hand-shaped. Louisa Winkler found that ORC's composite cross wheat populations has attracted their attention.

During his time as a miller, Mark has become increasingly interested in older heritage wheats such as Shepherd and Buzzer, finding that they often have a superior flavour. Shepherd, a biscuit wheat, is rarely seen nowadays, but has become a firm favourite with many Denver Windmill customers (even a Paris pastry chef has a standing order).

"I was frustrated by the obsession with Hagberg Falling Number and protein content of the grain in modern breeding," says Mark, who feels it comes at the cost of flavour. "Because we use an artisanal baking process with two provings, these numbers don't reflect the loaf quality."



Mark and Lindsay Abel, operators of Denver Windmill (right, one sail was recently damaged and is under repair)

Photos: L Winkler and E Woodcock

The evolutionary breeding approach applied in developing composite cross populations (CCP) is completely different from the breeding which has produced most modern wheat varieties on the market. It was Andrew Charlton, a participatory farmer in ORC's Wheat Breeding Link project, who introduced Mark to the CCP. Andrew guessed that Mark would be interested in the concept and brought him to see the population in the field. Mark agreed to purchase 100kg of the 2011 harvest. He milled, baked, christened the result "The Heritage Loaf" and then watched with delight as they flew off the shelf.

"This flour has a very satisfying flavour," says Mark, "almost like a collage of different flavours. They come through well in the finished loaf, which toasts nicely, too."

Demand for the Heritage Loaf is high, although it is still only in its experimental phase, with the fourth batch having just been baked and the flour not yet on sale. Mark intends to continue developing it as a speciality bread, and has asked Andrew Charlton to grow more CCP for him in 2012.



The Wheat Breeding Link project, the main vehicle for ORC's work with CCPs, draws to a close this year. Work will continue through the SOLIBAM project on our understanding of the genetic dynamics of the CCPs and their optimisation for various end uses and for resilience in the field. It is encouraging that CCPs are already finding success in real-world applications, and it is hoped that the legislative changes necessary for growing and trading it can be promptly accomplished so that it can be launched onto the market in earnest.

Denver Windmill is publicly-owned by the Norfolk Historic Buildings Trust under Norfolk County Council and CPRE (Norfolk). It is capable of producing 250 t flour per year in its stone mills, which Mark and his family supplement with flour from electrically-operated stone mills. In addition, the site includes a café and runs baking courses.

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Hardy Vogtmann retires from ORC's Council of Management

*Prof. Dr Hartmut Vogtmann, one of the founding trustees of ORC, our primary scientific advisor since ORC's inception in 1980 and latterly ORC's President, has stepped down from the Trust's governing body. His perception, energy and application have played a pivotal role in the development of ORC and the international organic movement. **Lawrence Woodward**, who has worked with him and been a friend for all this period, provides an appreciation.*

Universally known as Hardy, his approach to the organic cause in general, and ORC in particular, can be seen in the synonyms of his name: bold, firm, intrepid, resolute, robust and vigorous. He himself likes "teutonic" but would concede that bubonic might sometimes more accurately describe how he can persistently plague people with memos and phone calls when he wants a thing done in a particular way.

We are all unique, but Hardy is remarkably so – his personality is large enough to both embrace and overwhelm people; his energy can invigorate and exhaust; he can inspire and unsettle; whilst his contribution to the organic cause is so manifest that it sometimes receives less attention than the ones of smaller, more comfortable people.

Giving existence to the non existent

There is an engaging passage in Douglas Adams' book "Dirk Gently's Holistic Detective Agency" in which two of the characters consider the achievements of Sir Isaac Newton. One of them is dismissive of the discovery of gravity: "It was there to be discovered.....they even keep it on at weekends. Someone was bound to notice sooner or later". But he praises Newton for inventing the catflap: "a device of utmost cunning, perspicuity and invention."

The other is unimpressed: "I would have thought it – the catflap – was quite obvious. Anyone could have thought of it." "Ah" responds the first character, "it is a rare mind indeed that can render the hitherto non-existent blindingly obvious. The cry 'I could have thought of that' is a very popular and misleading one, for the fact is that they didn't, and a very significant and revealing fact it is too."

The fact is that Hardy Vogtmann has been giving existence to the hitherto non-existent for the nearly 40 years of his professional organic life including:

- the development of the Swiss Research Institute of Organic Agriculture (FiBL) in 1974, the first of its kind, which has had enormous influence on organic agriculture worldwide;
- the creation of the DOK trial, the iconic and world's longest running comparison of organic and conventional systems;
- occupying and developing the world's first chair and university department in alternative/organic agriculture at the University of Kassel in Germany;
- the rescue successful structuring of the International Federation of Organic Agricultural Movements (IFOAM), the organic movement's global platform;
- the first European development in household separation of waste linked to municipal composting;
- introducing the concept and practice of growing organic food in schools and providing organic meals for children in Brazil;



Hardy Vogtmann greets HRH Prince Charles on his visit to ORC in May 2010. Prince Charles sent a personal message to Hardy on the occasion of his retirement recognising Hardy's contribution, not only to ORC, but also to the Prince's own involvement with organic farming.

- linking organic agriculture and regional development policy and practice for the first time on a large scale in Europe, in the state of Hesse, and following that in Georgia and regions of the Caucasus;
- placing organic agriculture in the centre of German federal policy for nature conservation;
- and providing succour, support and inspiration for countless projects and individuals around the world.

An unsurpassed record of achievement

Most of the things in which Hardy has played a critical role are now so well established and intrinsically part of the organic – and for that matter non organic world – that many people do not realise, or fail to remember, that there was once a time when they didn't exist at all. Consequently the skill, intelligence, effort and sheer energy that it took to bring them about tends to be under-appreciated if not forgotten. But Hardy's record of accomplishment in support of the principles and practice of organic agriculture and its role in bringing about a more sustainable and equitable food and farming system is second to none.

From the early 1970s, through organisations set up, steered and advised, published papers, book chapters, projects supported, organisations and companies helped and public interests promoted, the name Vogtmann has run through organic and associated areas leaving an indelible impact on an individual, local, national and international scale.



Simply, there has been no-one like him in the history of organic agriculture and few, if any, who have given and achieved more.

Setting the direction for ORC

Following a chance meeting in 1979, David Astor, Christopher Bielenberg, Alice Astor and I visited Hardy in Switzerland and saw the wide ranging R&D programme, the advisory service and the training courses that had been established at FIBL under his directorship and the influence this was having on Swiss agricultural policy.

We were inspired and resolved to establish an educational and research charity in the UK to do the same things. Fortunately, Hardy agreed to become one of the founding trustees and has remained an active and key part of Elm Farm/ORC from then until now.

His contribution over the years has been immense, but his impact in the first few years was critically important because he led the way in establishing the organisation's predominant and enduring characteristics. Firstly, his understanding of the true concept of holistic, biological

agriculture shaped our whole approach. Secondly, he was the key to establishing our credibility with the UK agricultural research and policy establishment through playing a prominent role in the meetings and workshops we held. Thirdly, his knowledge and can-do character were an inspiration to the UK organic farmers and growers who were working to re-establish the organic movement and through him Elm Farm (as we were then called) began to be viewed as a leading player. And fourthly, by promoting us within the international organic movement, we were quickly able to tap into a range of contacts, experience and knowledge that would have taken years to develop alone.

This is not an obituary. Hardy is and will continue to be very active; he is currently vice-President and will shortly become President of Germany's conservation NGO platform; he is continuing to lecture, adding to the vast number of students he has inspired to make a career in the organic world; he will continue to work for the genuine organic cause and against the GM genie and the other hobgoblins of industrial agriculture; and he will remain part of the ORC family. We wish him well.

Lifting the lid on organic certification

*CERTCOST, a European research project on the system of certification of organic food ran from 2008 until November 2011 with the aim of providing recommendations to improve the efficiency, transparency, and cost effectiveness of organic food certification systems in Europe. ORC became a project partner in 2009 when **Susanne Padel** joined us from Aberystwyth University. In this article she reviews some of the findings relating to certification and non compliance.*

With the growth of the organic sector and the spread of organic production across the EU, the field of organic certification has become a maze of competing labels and logos, involving different private and public standards in addition to European regulation. Organic businesses are also subject to a range of other schemes involving third party certification including mandatory and voluntary assurance schemes and legislation for geographical indications and typical products.

Baseline information on EU organic certification

Organic certification in Europe is organised in three different systems: private control bodies overseen by a competent authority (as in the UK); public control bodies (as in Denmark); or a combination of both (as in the Czech Republic). It is estimated that organic certification in the EU employs at least 1500 staff, with a total turnover of ca. €70-110 million, equivalent to about 0.5% of the retail sales value. Different ways to quote and calculate fees makes it difficult to compare prices across borders but the median inspection fee paid by farmers is €500/farm with UK farmers paying €647/farm and Danish farmers nothing as all costs are met by the state. Further information on this can be found on the database www.organicrules.org, which was developed as part of the project.

Variation in time spent for control is generally larger within than between countries. The average control duration varied for farms between 2.5 hours in Germany, about 3 hours in CH and CZ, and more than 4.5 hours in the UK, a difference that is partly explained by farm size.

Non compliances in the EU

The primary purpose of certification is to verify compliance with the EU organic regulation and where applicable private standards. How effective certification actually is in detecting and deterring non-compliance across the EU has been an open question. Certcost is the first ever attempt to look at certification data in order to analyse the risk of non-compliance and the probability of detecting a non-compliance with a set of risk factors, or variables known about the operator.

The main source of data is anonymised control body information from five countries over three years (2006 - 2009). The main challenge for this analysis was the fact that control bodies keep data about their operators for the purpose of client management and for some statistical reporting, but not for analysis of risk factors in relation to non-compliance. In most cases, we therefore analysed data on sanctions in 4-17 different categories depending on severity and used these data as proxy for non-compliance.

There is no common guideline at EU level as to what constitutes a minor, major or critical non-compliance or what levels of sanctions should be used and only the sample UK control body kept data on non-compliances in these three different categories. We therefore reclassified sanctions into weak and strong sanctions. An example of a weak sanction would be a warning issued when an operator did not update information following a change in operation; a strong non-compliance could be if synthetic nitrogen was deliberately used.



The share of farms receiving severe and extremely strong sanctions is at a similar low level in all countries analysed and ranges from 0 to 4% of the farms controlled. However, the share of farms receiving weak sanctions (or in the case the UK control body studied, minor non-compliances) varied considerably between the control bodies (see Table 1). It is likely that this is a reflection of the different ways in which the control systems function rather than different levels of regulatory breaches. The most important conclusion we are able to draw is the need for harmonisation in reporting procedures across the EU before any meaningful assessment of non-compliance can be made.

Table 1: Share of farms with weak and strong sanctions (non-compliances in the UK) per year in control body data from different countries

Control body/ authority in:	Year	Farms with weak sanctions	Farms with strong sanctions	Total number of farms in sample	
Switzerland	2007	1.6%	4.1%	4,661	
	2008	1.2%	3.2%	4,508	
	2009	1.8%	2.6%	4,388	
Czech Republic	2007	0.8%	0%	700	
	2008	1.6%	0%	740	
	2009	10.5%	0.8%	877	
Germany	2007	48.9%	2.2%	1,584	
	2008	47.4%	1.7%	1,686	
	2009	37.0%	0.7%	2,145	
Denmark	2007	6.0%	0.8%	2,589	
	2008	6.6%	1.2%	2,654	
	2009	2.0%	0.6%	2,505	
Italy	2007	8.1%	1.1%	9,398	
	2008	6.1%	2.1%	9,351	
	2009	5.0%	1.9%	10,732	
United Kingdom	Non-compliances			Total farms	
		minor	major		critical
	2007	34.7%	0.9%	0.9%	1,820
	2008	39.4%	7.8%	0.7%	2,151
2009	36.8%	9.0%	2.2%	2,155	

Analysing the risk of non-compliance with economic models

In total 46 hypotheses about factors increasing the risk of non-compliances were tested using different econometric models. These related to general risk, structure and management of the farmer, specific crops or livestock species and control related issues.

Few factors were found to be relevant for all countries: past behaviour, farm size and in most countries bovine livestock were significant. The strongest factor was past behaviour. Operators who are not compliant tend to stay so and those that commit minor irregularities are more likely to be found to have also committed major ones.

The presence of certain livestock species increases risk, in particular bovines (although these are present on many farms) and pigs entail higher risk. There was no overall risk pattern for crop types, but there did appear to be specific risk factors in a particular case. Non-organic land on the farm was a risk factor in Germany and Italy.

However, in the countries with a higher share of farms with minor non compliances/sanctions (DK, UK and CH) there might be a lower discrimination effect of explanatory variables. Other variables could be important to explain risk, such as personal characteristics or financial records, but we have very limited data on these. More detailed reports and publications analysing the risk factors will be developed over the coming months.



The project has looked at a number of different areas including consumer recognition and has conducted a comprehensive economic analysis of the variety of existing certification systems and their impact on the internal market for organic goods in seven countries (CZ, DK, DE, IT, CH, TR, and UK). The project partners are currently finalising recommendations from the research for different groups of stakeholders, who have been involved in several international workshops and at other events. A small workshop was held with UK control bodies and representation from Defra on 17th October 2011. Further reports from the project will be covered in future Bulletins. The project has an excellent website www.certcost.org where reports, papers and summaries can be accessed.

Disclaimer: This article was generated as part of the CERTCOST Project with financial support from the European Community under the 7th Framework Programme. The publication reflects the views of the author and not those of the European Community, who is not to be held liable for any use that may be made of the information contained.

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Organic livestock feed – an ORC perspective

The 1st of January 2012 was meant to be new feed regime day for organic livestock feed across the EU – a day long envisaged by the organic movement and set out in the EU organic regulation in 2008 when 100% organic diets were finally implemented for organic pigs and poultry. But, as feared, this particular new year has been cancelled. 100% organic diets might be introduced eventually but, judging by the EU's latest proposals, it won't be in 2012 or 13 or 14. This is what we think about the issue.

When the organic regulation EC 889/2008 confirmed the previously set date of 31st December 2011 as the expiry date for the derogation allowing 5% non-organic feed in the diet of monogastric animals, some people predicted it would be impossible to meet; others thought it would be difficult, but possible; a number smiled confidently at the timeless art of manipulating derogations and saw the opportunity for business as usual; and many shrugged and thought four years is a long way off.

We at ORC believed that it had to be met so as to maintain organic integrity and that it was possible, if there was a real effort by the organic sector, to develop alternative feeds and feeding systems and alter production expectations and if some countries and producers took, admittedly difficult, measures to restructure their operations.

In May 2011, the Commission reaffirmed its intention to stick to the expiry date and in addition they introduced proposals to amend the regulation to bring it more in line with the principles of organic production and the declared aspirations of the organic movement which were embodied in the preamble and text of EU organic regulations 834/2007 and 889/2008. These proposals were:

- In the case of herbivores, to require that at least 80% (currently 50%) of feed comes from the farm unit itself, or in case this is not feasible, be produced in co-operation with other organic farms primarily in the same region.
- In the case of monogastric animals, to require that at least 50% of the feed shall come from the farm unit itself or in case this is not feasible, be produced in cooperation with other organic farms in the same region.

Following objections from parts of the industry and the organic movement, as well as some national government representatives, the Commission has postponed the ending of the derogation and is working on amended proposals, which look certain to satisfy no-one, but hopefully will retain something of their honourable attempt to develop the organic regulation towards the level of principle, integrity and values that consumers think it already has.

Our vision

ORC has never wavered from the position that organic agriculture is a whole farming system – not just a collection of enterprises with some links between them, but a system where all production enterprises, conservation, biodiversity, landscape and environmental management are part and parcel of the same thing; each contributing to the other and the whole. We go further and believe that food quality, sustainable livelihoods, equitable supply chains and community development are also part of organic agriculture. It's called holistic and the idea of a system embraces livestock diets and their sourcing.

What are the latest Commission proposals?

As we go to press, the legal situation is that the derogation to use 5% non-organic ingredients still ends on 31st December 2011, but that a regulation is expected to be approved by February 2012, which will be retrospective and cover the period from 1st January 2012. However, the exact content is still uncertain, with a number of options are being postulated, including:

- retaining the 5% allowance of non-organic feed in monogastrics diets until 2014;
- reducing the allowance to 1% from 2015 for “minor inclusions” on an ongoing basis;
- altering the original proposals to reduce significantly the proportion feed to be produced on-farm or from regional linked farms to 20% for pigs and poultry and to 60% for herbivores, with regions to be defined by member states.

Variations on these themes are also under discussion – we can expect that an intensive round of discussions on these proposals will take place in the next few weeks.

However, we have never been as utopian and impractical as to believe this can be developed in one hit, at one speed or with one plan. We have always worked towards this vision in a developmental and incremental way, supported by our own research evidence and that of others. Accordingly for livestock feed, we consider that:

- All livestock diets should be near 100% organic with some limited allowance for inclusions or amendments on the basis of occasional or transitional need.
- For herbivores, the vast majority of the diet should be forage and this should come from the farm with the balance coming from other local or regional farms.
- For non-ruminant (monogastric) animals, the range should be designed to contribute to the diet and animals managed to utilise this effectively. Where agronomic and farm structure allows, the non-range part of the diet should be sourced primarily from the farm.
- In all cases, bought-in, supplementary feeds (including concentrates) should be sourced according to the proximity principle (i.e. as close as possible for each feed type), which can be applied variably according to regional circumstances. All off-farm feed sourcing should depend on ensuring that appropriate nutrient recycling and sourcing is in place.

Principled pragmatism

We recognise that this vision contains words and phrases which some people involved with regulation and certification would regard as unclear and not auditable. But this is not so. If certification is approached on the basis of a whole system evaluation – as opposed to the sum of



piecemeal monitoring – phrases such as “near”, “limited”, “vast majority” and “applied variably” can have valid application. The important thing is the organic legitimacy of the functioning system overall and not whether in some specific components – e.g. 100% organic feed – it is “right on the button” or “within spitting distance”. After all, the whole is greater than the sum of its parts.

Certifiers will argue that the regulation does not give scope for this kind of approach and that practices and allowances must be auditable consistently across the EU. Some may even believe that this currently happens.

In fact such a rigorous interpretation is unworkable across 27 countries with different ecosystems, farming systems and economic structures. The briefest look at almost any aspect of the regulation reveals that it is being “applied variably” in sometimes vastly different ways and interpretations by member states and certifying bodies and authorities. To pin down the feed regulation to the last gram or even tonne when the overall balance of the system is organically acceptable might be a bureaucratic auditor’s heaven, but it would be a terminal scale folly.

The term “regional circumstances” is auditable because the operation of the organic regulation is vested in the member states and therefore the region is, first and foremost, the country. This might not be the most ecologically sound definition, but it is where we are. Lower levels of detail, definition or description, e.g. local farms, therefore fall to the member state to set. This would vary in different member states, but it is all auditable.

The use of the “proximity principle” for individual feeds, rather than a one size fits all local or regional definition, allows a pragmatic, but principled approach to sourcing, which again we believe is auditable. The underlying requirement is that off-farm feed should be sourced as close to the farm as possible, but that the allowable distance will vary according to feed type and location. For example, the allowable distance for sourcing oats for feeding in Wales is likely to be much greater than that allowed in the south of England.

With the information gathered by certification bodies and the certifying authorities about production it would not be difficult to map out allowable distances. The proximity principle could also be applied to feed mills, both for sourcing and supplying products.

We recognise that creating a link between feed sourcing and nutrient cycles is problematic and needs further work. However, a step by step approach is feasible. As an immediate step, it is possible and necessary to avoid a large influx of nutrients through feedstuffs to those farms – such as small pig and or poultry units - that do not have sufficient land area to utilise them effectively. It could also be possible to encourage the linking of transfers of feeds and manures between the same holdings in both directions.

Achieving the vision

A number of problems have been highlighted as reasons why the organic regulation cannot move forward towards achieving this kind of vision. We acknowledge that there are difficulties, but there has been decades of procrastination and years of derogations with little effect. A continua-

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tion of this is simply not tenable. We believe that progress can be made, but that in some cases hard decisions have to be taken to preserve the integrity of the organic system and maintain the credibility of the organic movement’s aspirations.

We do not expect our vision to be completely incorporated into the regulation in the current circumstances. However, we applaud the Commission for its effort to move matters forward. We are aware of the objections raised to the proposals and have considered them as follows.

Feed sourcing

It is argued that many organic farms in the EU cannot individually produce enough feed (including forage) due to farm structures, economic conditions and undeveloped markets/national sectors. Furthermore, it is argued that recourse to local or regional organic supplies is difficult – even impossible – in some regions and countries.

In our view for **herbivores**, where 100% organic sourcing is already required, this should continue with the ongoing use of emergency provisions to deal with occasional weather-related or other problems. We consider that the Commission’s proposal that 60% of feed (dry matter) should come from the farm or regional linked farms is feasible, but it would be better, and the prospects of increasing that percentage easier, if the proximity principle (see above) was employed.

In the case of **monogastrics**, whilst we support the view that a significant proportion of the feed should be produced on the holding or come from local/regional sources, we consider the current 20% proposal to be only a start. We would like to move to a system which takes into account a requirement for range to contribute to the diet for at least some part of the production cycle and where nutrient cycling is directly linked to feed sourcing. Both these aspects will significantly contribute to on-farm and local sourcing but further R&D is needed and is ongoing. Moreover, the issue of feed mills needs to be addressed – again through the implementation of the proximity principle. We feel the Commission should allow some further time for these considerations, but believe that a viable proposal to increase beyond can be developed in 2 years.

100% organic feed for monogastrics

Currently monogastric animals are fed 95% organic diets and it is argued that moving to 100% is not possible at present because: a) 100% organic diets would increase costs to a commercially unacceptable degree for some businesses, b) there is not enough certified organic protein available, and c) there is an inadequate supply of amino-acids (particularly methionine for table birds, lysine for laying hens and to some extent pigs) given the regulatory prohibition on synthetic amino-acids and restrictions on the use of fishmeal in feed mills.

The consequences of pressing ahead with ending the derogation are said to involve adverse animal welfare impacts if livestock are denied adequate amounts of amino-acids; environmental problems, as feeding “low quality” proteins to ensure sufficient amino-acid levels could cause excess nitrogen excretion from the animals leading to pollution and to further welfare issues in poul-



try as poor bedding quality leads to increased levels of footpad dermatitis, hock and breast burn.

It should be noted that there are producers throughout the EU who are already feeding 100% organic diets and others who have taken the necessary steps to ensure that they can do so by 1st January 2012. This has been achieved without economic or animal welfare collapse. There are also feed manufacturers who have made the necessary investment in R&D and sourcing to ensure they will be able to produce 100% organic rations. A regulatory about turn at this stage will unjustly damage these businesses.

We see no justification for a blanket extension of the derogation. Research (including our own) and practice has shown that 100% organic diets for table birds are technically and economically feasible [1]. We also believe that it is possible to provide pigs with 100% organic diets at all stages of production, although good management is crucial (see “The organic feed dilemma, Bulletin 105) and there will be a cost implication.

The argument has been made that at some life stages the need for high levels of amino-acids are so critical (especially classes in the early weeks) that there is a justification to allow the use of synthetic amino-acids. This has been presented as an animal welfare issue but we believe it to be a production issue. Quite simply the livestock production levels aspired to by some certified organic operations are more in line with conventional production and are incompatible with the limits of the organic system. We need to challenge a semi-industrial, neo-conventional approach to livestock production, an issue which was also identified .

Production expectations need to be consistent with the quantity and quality of organic diets. There is no need to allow synthetic amino acids and we oppose that proposal, but there is a need to ensure that organic livestock farms are properly structured through conversion, have access to appropriate breeds, and that organic livestock keepers are better trained to feed more precisely to the animal’s life and production cycle.

However, we are where we are and given the current situation we believe that we should be moving to 100% organic feed requirement for table birds and pigs during 2012 and layers in 2013; but that an extension of the derogation for young birds for the first 4 weeks of life could be possible up to the end of 2014. We would support the proposal for permitting an allowance of less than 1% for “minor inclusions” on an ongoing basis provided that it is supported by a positive ingredients list as at present.

Going forward

The organic livestock sector has to move rapidly to a situation where all classes of livestock are fed with more or less 100% organic feed, if only because the consumer believes that is already the case. However, to make this restriction on feed viable, changes – in some places fundamental ones – have to be made in how organic livestock systems are managed. These changes will bring organic practice closer to organic principles which, in our view, will make it more sustainable and more likely to result in healthy animals and food quality. These changes include:

1. **Developing “organic” production parameters.** Too many organic farms are striving for conventional – or slightly modified – production parameters and systems which are not appropriate to the quality of organically grown food and management systems. This includes the use of animals bred for ‘high input, high output’ systems which are ill adapted to organic conditions [2].
2. **Developing the value of range as a feed source to monogastrics.** Currently the value of range is completely ignored in ration production. There is evidence from Denmark [3] that shows it can supply up to 70% of lysine and methionine requirements of laying birds. In addition the foraging activity on enhanced range increases the quality of table birds and improves overall animal wellbeing.
3. **Breeding of animals suited to organic production expectations and environment is of vital importance.** In the case of poultry there is evidence that traditional and local breeds are better adapted to free range, are capable of producing on a less protein-rich diet, and have satisfactory behaviour and reasonable productivity [4]. However, there is no reason why new breeds cannot be developed with the same attributes (see for example www.lowinputbreed.org). This is important for all types of livestock but is especially so for poultry where organic conditions are very different to those for which conventional strains have been bred.
4. **Alternative protein sources need to be developed.** Whether framed as the proximity principle or as local and regional indigenous and diverse protein sources need to be developed [5]. This is not just an agronomic task; processing and ration formulations appropriate to indigenous and organically grown proteins are also needed. This has infrastructure and economic implications [6]. Research, such as the new ICOPP project (see ORC website and Bulletin 106) is now being undertaken and will make a significant contribution.
5. **Technology transfer and training.** It is clear that many organic farmers are not managing their livestock feeding to optimum effect (see Bulletin 105). There is a tendency not to analyse feed or take into account the variability in feed quality; there also seems to be a lack of understanding or application of strategic feeding according to the animals life or production stage. Knowledge on these subjects already exists but there needs to be a push on dissemination and training on this and all other relevant research.

Livestock feed brings into sharp focus the different perceptions of what organic is. That governs the positions taken about what is acceptable and how fast and far the organic regulations have to change. Our view is that it should be fast and far. Consumers expect it and principles demand it: 100% organic feed, produced mainly on farm and in accordance with the proximity principle.

Feedback

Do you have views on our position? Send them to comment@organicresearchcentre.com. Your views may be published unless you ask us not to. We will shortly be developing a webpage for this issue – see ‘Organic Regulations’ under ‘Policy and Debates’ on our website.



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Home grown and local, mixed and fed the Danish farm way

*ICOPP stands for "Improved contribution of local feed to support 100% organic feed supply to pigs and poultry" and is a new EU collaborative project involving ORC. The inception meeting was held recently in Denmark, hosted by Aarhus University in Denmark. After finalising the project plans ORC researchers, **Jo Smith** and **Rebecca Nelder**, took a look at a Danish organic pig and chicken (layer) farm and found some interesting differences with the UK and a real commitment to organic, home grown and local feed .*

Brian and Ingeborg Holm have 7 children, 9,000 laying hens and 175 breeding sows. Brian says that the secret of their happy marriage is that he sticks to the pigs and she sticks to the hens. Ingeborg says that he is passionate about home mixing the animals' feed and that he'd rather spend a week with his mixing machinery than go on holiday. We didn't get a comment from the kids but the animals look healthy and thriving on a diet that is close to 100% organic and is largely grown and mixed on the farm.

Willow and alder trees have been planted in strips in the fields surrounding both the hen and pig houses, this was done for environmental reasons, the roots help to stop leaching of nitrates into the soil whilst the rest of the tree helps to reduce smells escaping across the flat landscape. Range enhancement by the trees for the animals is a serendipitous by-product of the environmental protection they provide, as is the wood that is harvested.

The hens are housed in three separate static houses with access to outdoors through a veranda to the paddocks where the willow is grown. It is an 'all in, all out' system with a three-week gap for wash down before repopulation. Birds are brought in at 16 weeks, split into three houses and depopulated a year later.

95% lay is achieved by the hens which are some of the last of their type left in Denmark. Ingeborg sticks with them because the man who hatches and grows them to 16 weeks does such a good job; the birds are friendly and bold – not afraid to range. They lay brown eggs, unusual in the Danish market, and are sold in supermarkets.

The birds are fed a home mixed feed on a conveyer in the morning and a scatter feed of corn in the afternoon. A girl is paid to walk past every bird and check them several times a day, as is required in the Danish organic standards. She takes a bucket of corn with her; it encourages 'friendly' birds and increases their natural foraging behaviour. In the veranda are what look like cone shaped hanging baskets, these are filled daily with silage; a simple but effective way to increase the birds' welfare and gut health.



Pregnant sows are moved into the fields with the trees a week or so before they are due to farrow. They are kept in individually electric fenced pens and remain there until the piglets are 6 weeks old. The pig system differs from its British organic counterpart; the sows have nose rings to stop them turning over the ground; the boars are castrated (with a dose of local anaesthetic); they are grown to a much heavier live weight, 110kg as opposed to our 75kg.

A major difference is that the pigs are finished indoors. At 6 weeks mothers and piglets are brought inside and put into groups of 25 sows. Three weeks later the sows are removed to go to the boar and the piglets stay together as a finishing group. The finishing pigs have access to an outdoor run via several 'pig flaps' where they are fed silage and are given footballs to play with. Half the floor is slatted, the other half is rubber matting. Indoors, the pigs have straw-bedded cubicles similar to dairy cows.

They are fed a home mixed feed of cereals, much of which is home grown with some additional soya. The young stock are on a nearly 100% organic diet but the finisher diet is closer to 95% organic due to the use of conventional rapeseed meal, which is locally sourced.

The pig meat is sold to 'Friland' (Free range or Free Land), a daughter company of the big bacon factory 'Danish Crown'. On average farmers are paid approximately 24 Dkr/kg (£1 = 9 Dkr), compared to 10 Dkr/kg for conventional. Despite this difference, it is very difficult to get farmers to convert. The pig finishing system will raise eyebrows in the UK, but the Holms' approach to feeding their animals contains valuable lessons.



Where is organic farming in the CAP reform proposals?

In October the EU Commission published its legislative proposals for the new CAP. They had a mixed reception, with a considerable amount of negotiation to come. As it stands at the moment the position of organic farming has changed significantly from the current CAP which is to be welcomed. However, there are some potential drawbacks. Nic Lampkin outlines where we are now.

As expected, organic farming is specifically addressed at two levels. Firstly, organic farmers will qualify automatically in Pillar 1 (direct payments) for the uncapped "Greening" proposals which will account for 30% of all direct payments. This is in contrast to non-organic producers, who will need to make specific commitments to crop rotation, maintenance of permanent grassland and dedicating 7% of land to have specific ecological focus.

Secondly, organic farming will also now be a stand-alone measure as part of the rural development programme (Pillar 2), rather than one of many agri-environmental schemes as it has been from the mid-1990s. There are also several provisions for prioritising organic activities with respect to producer organisations and promotion contained in the proposed Market Management regulation.

Article 30 of the proposed Rural Development Regulation specifies that support for organic farming under this measure shall be granted, per hectare of UAA, to farmers or groups of farmers who undertake, on a voluntary basis to convert to or maintain organic farming practices and methods. Commitments shall be undertaken for a period of five to seven years.

Where support is granted for the maintenance of organic farming, Member States may provide for annual extension after the termination of the initial period. Payments shall be granted annually and shall compensate beneficiaries for all or part of the additional costs and income foregone resulting from the commitments made. Where necessary they may also cover transaction costs to a value of up to 20% of the premium paid for the commitments. Where commitments are undertaken by groups of farmers, the maximum level {of compensation for transaction costs} shall be 30%. Support shall be limited to 600 €/ha per year for annual crops, 900 €/ha per year for specialised perennial crops and 450 €/ha per year for other land uses.

The conditions of Pillar 2 schemes are within the discretion of the member states and the legislation's introductory recitals encourage them to support organic farming as a way of answering society's increasing demand for the use of environmentally friendly farm practices and for high standards of animal welfare. However there are some potential drawbacks.

Firstly, Member States may use the automatic Greening payment for organic farmers as a basis for not implementing or reducing support under the Pillar 2 Rural Development regulations. Secondly, the separation of organic farming as an optional Rural Development measure from other agri-environment-climate measures that are mandatory for Member States to implement, could lead them to discontinue or reduce support, creating a situation where support levels vary even more widely than they do currently, with some countries, or regions within countries, providing no support at all.

The inclusion of organic farming within the 25% minimum funding requirement for land management and climate measures will help offset this risk, but we would like to see organic support as a compulsory measure under Pillar 2 or befitting a higher co-financing rate. The IFOAM EU Group has also called for organic farming to be prioritised in terms of higher co-financing rates and to be specifically recognised also in the context of knowledge transfer support measures.

We will be making the case within the EU and to UK governments that the new RDP organic measure should not be treated in isolation. Synergies between the various RDP and other policy measures should be exploited, in particular (but not exclusively) between the proposed organic farming measure and the measures addressing agri-environment-climate, Natura 2000/water framework directive, areas facing natural and specific constraints, animal welfare, quality schemes, investment in physical assets, farm and business development, establishment of agro-forestry systems, setting up of producer groups, co-operation, knowledge transfer and information actions, farm advisory services, LEADER and the EIP innovation measures, as well as to Pillar 1 Greening, research, public procurement, promotion and other non-RDP measures.

We will be arguing that regions state explicitly how these synergies will be exploited and for the inclusion of an organic farming chapter - linked to national or regional organic action plans - in RDP programming documents.

CAP Reform 2014-2020: What ORC is doing.

As regular readers of the Bulletin will have noticed, CAP Reform is a major part of our current policy work. As part of this, we have:

- Produced in 2010 a review for FAO of the European and other OECD experiences with agri-environment schemes in the context of developing schemes that pay producers for ecosystem services and public goods.
- Prepared a summary of the history of CAP and some of the key issues in the reform process from the perspective of the organic sector, which was presented at the IFOAM World Congress in Korea in Sept 2011.
- Engaged during 2011 with European partners in research on the current organic farming support policies in the EU for the European Commission's DG Agriculture, the results of which will feed into the implementation phase of the CAP Reform proposals. The final report has now been submitted to the Commission and will be published in due course.
- Worked with other UK and European organic and environmental groups on the assessment of the legislative proposals and the identification of issues that still need to be addressed.



- Raised key issues in meetings with government officials, including a UK organic policy forum hosted at Elm Farm in October with representatives of all four UK administrations and stakeholders.
- Submitted written and oral evidence to the House of Commons Environment, Food and Rural Affairs (EFRA) select committee inquiry into the impacts of the proposed Greening element.

There is much to be done and argued before the legislation is finalised, a process which is expected to continue well into 2012. ORC will be playing a full part in this – CAP reform will again be the focus of the opening plenary session of ORC's Organic Producer Conference in January 2012 – and we will be providing regular updates in the Bulletin and on our dedicated CAP reform webpage.

Book review: *State of the World 2011: Innovations that nourish the planet.* Worldwatch Institute

CAN WE FEED THE HUNGRY? By 2050 an estimated 9 billion people will live on Earth. In 2010 already one person in every six went hungry. With unstable food prices on global markets, the advance of industrial farming, the threats of climate change, ongoing environmental degradation that jeopardises the basis of our food system and the reluctance or inability of politicians to meet the first Millennium Development Goal (cut the number of people who suffer from hunger by half between 1990 and 2015), the future looks grim.

Worldwatch Institute, however, presents evidence of hope that we are able to feed the world's future population in a sustainable way, building on the understanding that eradicating hunger and production of food alone are not necessary the same thing. The examples show that it is not governments or a one-size-fits-all approach that will solve the problem but farmers who bring about innovation or maintain traditional, locally well-adapted practices.

To investigate the *Innovations that Nourish the Planet*, the team of authors visited 25 African countries, getting in touch with farmers and learning about their agricultural

inventions. What they found was a diverse array of promising technologies and community policies. This ranges from new cassava varieties in Zambia and solar cookers in Senegal to wastewater irrigation in West Africa.

The book covers the central issues society faces in the 21st century, including hunger, environmental degradation, climate change and urbanisation, and demonstrates that alternative solutions exist. It provides insight into case studies from the field illustrating particular agricultural novelties and the work of organisations that seek agricultural development.

Although the picture they paint is an optimistic one in terms of food security and environmental health, the question remains whether governments and researchers elsewhere will learn a lesson from these innovations, acknowledge the potential of bottom-up approaches and provide incentives as well as the structures necessary to encourage such development in other parts of the world.

Erika Lieder

(Potsdam University, Germany; former Intern at ORC)

Obituary: James Cornford 1935-2011

An outstanding man, significant social reformer and stalwart supporter of organic radicalism

James Cornford was a trustee of Elm Farm/ORC for nearly ten years during which time his good humour, intelligence and understanding of the radical nature of our vision and mission was invaluable.

His career in civil society was unswervingly for public good not private interest and despite a very busy schedule – which included a stint as a ministerial advisor in the heady, optimistic early days of the “New Labour” government before seeing the dawn of false promises – he always found time to attend trustee meetings and to be available to give advice or words of encouragement.

Like his friend David Astor he was less than riveted by the issues of cultivation techniques but firmly grasped the fundamental significance of the role of agriculture and the food system as either a force for radical change or monumental obstruction in pursuit of a genuinely sustainable and equitable civilisation.

Obituaries in the national media have covered his career and achievements in detail (e.g. Guardian of 5/10/11). It is enough here to acknowledge that his various roles – the

director of The Nuffield Foundation, the first director of the Institute for Public Policy Research, his work with the Social Science Research Council, the School for Social Entrepreneurs and for the Campaign for Freedom of Information and other civil society involvements – make him one of the significant figures in social and political reform in this country in the last forty years.

What those obituaries have not covered was how as a trustee of Elm Farm/ORC he had come to recognise that growing and distributing food is a political act and for it not to be equitable, sustainable, transparent, healthy and operating primarily in the public interest but instead to be rapacious, corporate, inequitable and private interest focused is just as damaging to civilisation as those things are in banking, industry, trade and government.

He saw organic agriculture as a force for changing the world and he supported and nurtured Elm Farm/ORC's radicalism. He was also a good and immensely likeable man.

Lawrence Woodward

Events



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Or, contact Laura Andrews, events co-ordinator, on 0117 987 4586 or landrews@soilassociation.org

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