



THE ORGANIC RESEARCH

CENTRE is an international research, advisory and educational organisation based in the UK.

The business of The Organic Research Centre is to develop and support sustainable land-use, agriculture and food systems, primarily within local economies, which build on organic principles to ensure the health and wellbeing of soil, plant, animal, man and the environment.

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Bulletin

*with Technical Updates from
The Organic Advisory Service*

On being organic and “anti-normal”

It's been a busy December. Last time in the Bulletin we quoted Iain Tolhurst, leading organic grower and organic thinker urging “it is time to get the movement back on course and end this selling out to the mass market, global economy idea.” It was time, Iain said, to get back to a proper, deep rooted organic philosophy.

To our great relief and delight, it seems that Iain is not alone in his wish to get the UK organic movement back on track. December 11th and 12th saw 170 organic producers gathered at the Royal Agricultural College, Cirencester for a conference created by them and facilitated by The Organic Research Centre, Elm Farm and a new body - Organic Inform. Organic Producers: In principle and In practice was in effect a rallying point for those who want “to do the job properly”. It posed the questions do we now have an organic movement at all? Is the organic honeymoon over? Are standards split between big business and family farms?

Out of the conference have come two new groupings in organic poultry producers and amongst growers. Both to give a voice and consumer connection in areas where, for example, the march of industrialisation and supposedly equivalent imports have been particularly corrosive to true principles. Out of it too has come a new sense of optimism that producers have the will to grab back control and as one delegate put it “become anti-normal again”.

At the same time Organic Inform has been launched. It is a new venture run by The Organic Research Centre- Elm Farm with Defra funding. Its mission is to deliver and exchange up to date, independent and reliable data and news to help producers make the most of organic markets. It is another element of “grabbing back control”.

And finally in this hectic period you may have noticed that we have a new name. The Organic Research Centre – Elm Farm. “This change of name is a reaffirmation of our commitment to the organic cause and principles. With it we are publicly underlining our core purpose and goal of building organic best practice out of principles as the best method of farming and land use in our fragile environment, says director Lawrence Woodward.

“We are very proud of our organic heritage and wish to reflect that clearly in our name.”

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Grabbing back control – The Cirencester Conference 2006

Cirencester in December, mid-week, surely someone else's conference? A time warp to a past weekend in January? But no, organic producers were back in force at the Royal Agricultural College, Cirencester for the first time since the turn of the Millennium.

Over two days, 170 delegates set about analysing the state of their movement and plotted a remedial course. In doing so a new mood of optimism was tangible. The strength of the conference lay in the "self help" nature of its organisation, put together by a network of groups and individuals to address technical and policy matters. The slide away from principles, uneven application of standards, incomes under pressure, business survival, poor and patchy representation were all on the agenda.

As one grower commented "the second age of the modern UK organic movement starts here."

Others agreed and were just as succinct in their soundbites – "Intensification is a dead end"... "Are we (in the organic sector) made to be mainstream"... "What has happened to our revolutionary, anti-normal stance"?

Amongst the delegates, Soil Association director Patrick Holden, accepted that in recent years there has been over centralisation and marginalisation of individual producers. "We, in Bristol, are not the organic movement – you are," he said.

And he made promises of reform to include the possible exemption of small growers from annual inspection and certification and pointed to a new SA apprentice scheme to help new, young blood into the organic sector.

Where better to illustrate the very point of the conference than in the poultry sector? Launched at the conference was a new organic poultry body – CROP, the campaign for real organic poultry, modelled to some degree on the real ale group CAMRA. The driving force behind CROP are Pam and Ritchie Riggs, who run a small "real" organic poultry enterprise in Devon. Driven by the over-industrialisation of their sector where mass produced birds and eggs with the same organic logs attached and at the same price sit alongside their prime poultry produce, Ritchie decided it was time to act.

CROP's aims are –

- To kick back at over industrialisation
- To equip consumers with knowledge to make informed organic choices
- To take control of the production process
- To encourage the addition of poultry to mixed organic farms as management tools
- To promote the very highest levels of poultry welfare and slaughter practice
- To influence and lead the rest of the organic poultry sector

Poultry delegates at Cirencester discussed the barriers to "doing the job properly" that CROP must overcome.

Central to these is feed. Until the end of 2007 producers can still feed up to 15% conventional foodstuffs to their birds and no move to 100% organic rations is planned until at least the end of 2011. In conversion grain can also be used. Whatever your ethical stance may be, this puts a committed producer on 100% organic rations at real economic disadvantage. Work done by The Organic Research Centre shows in winter an extra cost of up to 93 pence per kg dressed carcass weight when 100% organic feeds are used compared to an 80% organic ration.

Many "organic" poultry systems use chicks from conventional hatcheries. Organic chicks cost double the price at about 50 pence each compared to 24 pence for conventional birds. More organic chicks won't become available until the demand is generated by a ban on this derogation.

Flock size is another issue. Routinely, published Soil Association standards of 500 maximum flock size are exceeded, with 2000 something of a norm for layers and 1000 common for table birds. The bigger the flock the less management time, checking, cleaning and moving birds that has to be done. The extra costs of smaller flocks – and house sizes – are hard to quantify, but are appreciable.

The list goes on, use of artificial light, routine vaccination, access to pasture and range – all illustrating the gulf of difference between the likes of the Riggs' loved and cared for 12 acres in Devon and what has become the big business of much of the UK's organic poultry sector.

Most important of CROP's missions is the education and empowerment of consumers to enable them to become truly discriminating amongst the range of products which all carry the organic logo.

Horticultural growers too came together in the re-launch of the Organic Growers Alliance (OGA). Key goals of the new OGA are to give effective, independent grower representation, to provide information and services and to produce a new organic horticultural journal. Already 40 growers have signed up and the target is to reach 400 OGA members.

But the products of Cirencester far exceed the launch of CROP and the new OGA. A new coherence of thought has been achieved, new confidence instilled that individual producers can make a difference. The message is - don't be swept along in a tide of globalised industrialisation. Organic is different. It has to break the conventional mode, not let conventional break it.

Richard Sanders



The quest for more “home-produced” organic food

How to drive domestic organic product sourcing in the UK up to at least conventional product levels and how to displace organic imports against a backdrop of rapidly growing consumer demand? Those have been the questions driving a recently completed Defra-funded study analysing the barriers to achieving at least 70 per cent self-sufficiency across the board in temperate organic food.

Detailed case studies have examined organic beef production in Argentina, potatoes in Israel and pork in Holland.

The Organic Research Centre has been one of the project partners. Says director Lawrence Woodward, “This report presents Government and our whole sector with real challenges on such issues as enhanced organic conversion assistance and true retailer/consumer engagement with UK-first organic sourcing. It is an incredibly fluid problem set against the need to boost domestic production with the staggering pace of growth in consumption.”

These are the key conclusions of the organic import study, which Defra officials are currently digesting -

- The UK organic market will continue to expand, probably maintaining rapid growth for the next five to six years. Whilst other outlets are increasing their sales volume, supermarket sales will continue to be at the forefront of this expansion.
- Although UK sourced products are currently close to the Organic Action Plan target, we believe that they will not keep pace with the growth in demand and that the proportion of UK sourced organic products sold here will significantly decline unless action is taken.
- Any action will have a significant time lag between implementation and results; for our case study areas we estimate that this lag would be between one and three years under the best conditions.

All stakeholders (particularly retailers and consumers) must recognise the biological and ethical limits to organic systems and principles which will have implications for range, type and seasonality of the product; implications for carcass utilisation balance; the generation of rotational/cash cropping imbalance.

Rewarding risk

A key finding is that for organic producers the risk/cost to reward ratio must be made much more attractive. To achieve this re-balancing

- Producers need to exert influence on market requirements
- The supply chain should be re-calibrated to deliver higher returns
- Risks and costs should be better shared through the supply chain
- Issues of carcass utilisation and rotational cropping imbalance require

- New product development
- Consumer education
- Develop export opportunities

Generally, more widespread market focussed professionalism from producers is essential.

KEY RECOMMENDATIONS

For UK Government and organic organisations

- Work towards strengthened EU regulation, standards and certification
- Equivalence in regulation and certification both on paper and in practice must be urgently implemented to prevent the disadvantaging of UK organic producers
- Work with others to educate consumers about the biological (i.e. season, soil, water and cosmetic) limits of organic production.

For retailers

- Develop more realistic expectations - do not expect ‘same as conventional’ criteria to be achieved - it will not happen without undermining integrity
- Provide confidence to supplier/ processor/ packer (and thus to producers) through long term deals at realistic (cost+) farm gate prices
- Be honest in labelling on standards and certification - where there are differences don’t hide them
- Encourage product innovation (and consumer demand) to balance crop & carcass use

For suppliers/ processors / packers

- If not 100% organic business, develop best practice by using a dedicated team and time - not just at the margins
- Recognise lead times for conversion - act to secure supplies
- Focus on new product development to balance crop & carcass use
- Consider routes to export to achieve carcass balance

For producers & producer groups / co-ops

- Maximise available supply
 - All animals (e.g. beef from dairy)
 - Crops (e.g. contract production on existing farms)
- Work together better - through cooperative action
- Consider the potential for export - do not be passive
- Improve professionalism with regard to markets
- Deliver better systems - so that UK is the best



In a world where bread matters

Andrew Whitley argues for a joined-up approach to bread quality to be enshrined in organic standards.

‘Where should we draw the line?’ is a familiar refrain in debates about organic food. It embraces both the definition of quality and the broader remit of the whole organic project, as the recent controversy over Soil Association aquaculture standards illustrates. Could it be that the organic market can grow beyond its traditional niche only by a fatal dilution of its first principles?

The wheat-flour-bread chain is an example of how hard it is to superimpose organic standards on a sector whose development previously proceeded according to a purely industrial logic. Apparently small changes in the way we grow wheat, mill flour and bake bread may have combined to reduce the nutritional quality and digestibility of the modern loaf. If this is the case, organic farmers, millers and bakers must address the issue not by making organic standards accommodate practices that may be part of the problem, but by following the key organic principle of seeing things whole.

It starts with the growing

Modern wheat varieties were developed to suit intensive systems according to quality criteria that emphasised yield, dough strength (as defined by industrial bakers), and characteristics – such as short straw and the need for resistance to insect and fungal attack – that followed from the use of agrochemicals. Organic farmers have effectively been forced to grow varieties designed for different, and to a large extent incompatible, growing conditions. This matters. Organic food is about nourishing healthy people or it is nothing. Yet it is striking that in the National List of recommended cereal varieties, nutrition is mentioned only when it comes to feeding animals. The French National Institute for Agricultural Research (INRA) has shown that modern wheats have 30–40 per cent less minerals than varieties commonly grown as little as forty years ago. If organic bread is to be truly differentiated from its non-organic counterpart, it should be made with grain in which the vitality of a well-tended soil is fully expressed.

It is interesting that a European project called Healthgrain Integrated, coordinated by VTT in Finland, is working to ‘identify new sources of nutritionally enhanced grain’. This may indicate some recognition of the blind alley down which conventional plant breeding has travelled. But if the enhancements are specified by reductionist science and served up by GM technology, any nutritional gains may be undone by the kind of unexpected consequences that follow when the bigger picture is ignored. By contrast, the work being done on specifically organic plant breeding by Elm Farm and Gilchesters Farm is important because it offers to organic

cereal growers the prospect of grains that are attuned most completely to a growing system that has health at its heart.

Secrets of milling

The way we turn grains into flour is another example of how conventional practices conflict with organic principles. Roller milling enables a more complete separation of the grain into its parts than stone grinding. As a result, roller-milled white flour loses 50–80 per cent of a range of important minerals and micronutrients. Only four are replaced by law, in synthetic form. Nutrient losses that start with variety and are influenced by growing method are compounded by milling. A French trial (of three modern wheat varieties) showed that the organic replicates that were stone-ground had 46 per cent more zinc and 50 per cent more magnesium than their non-organic roller-milled counterparts.

Baking in a hurry

Modern baking systems are also careless of nutritional quality. The Chorleywood Baking Process, invented in 1961, uses high-energy mixing, chemical and enzyme additives and a lot of yeast to produce bread in a very short time. Modern research is showing the true cost of ‘no-time doughs’. Fermenting dough for six hours as opposed to 30 minutes removes around 80 per cent of a potentially carcinogenic substance called acrylamide that is found in bread crusts. Long fermentation allows naturally-occurring lactobacilli to enhance the nutritional quality of bread, as well as reducing the effect of certain protein fractions (e.g. some alpha- and omega- gliadins) that are toxic to people with wheat intolerance. The widespread use of industrial enzymes in modern bread is hidden from the public by a regulatory anomaly that classes them as ‘processing aids’ (which need not be declared), not additives. The recent discovery that one food enzyme (transglutaminase) can generate from wheat flour a toxic epitope of gliadin has been ignored by the industrial bakers, perhaps because it poses a threat to their supposedly ‘clean’ labels.

The uncomfortable truth is, however, that the roller-milling, the superfast baking without bulk fermentation and the use of added enzymes to puff bread up and preserve that uniquely claggy texture for week upon gut-bloating week – all these are allowed, and deployed, also in industrial organic baking.

As good as we can make it

More research is required to understand how we may have made our daily bread indigestible for some people and less nourishing than it might be for all of us. We should not be



deflected by 'chaff' emanating from the industrial millers' and bakers' PR machine which points to a solution in the shape of 'healthy-eating' ranges, fortified by this or that nutrient-of-the-day. Let us not forget that such 'added-value' products are neither aimed at nor consumed by those people in our society

who have least to spend on their diet and who therefore most depend on bread. It matters that all bread is as good as we can make it, starting from the ground up.

© Andrew Whitley 2006

Andrew Whitley's book **Bread Matters: the state of modern bread and a definitive guide to making your own** has ruffled a few feathers in the baking industry. Andrew founded the Village Bakery, Melmerby, and now teaches breadmaking. He is also Chair of the Soil Association's Processing Standards Committee

Bread Matters is published by Fourth Estate. It is available from www.breadmatters.com

Improving wheat with plenty of parents

Growing populations of wheat (a stand comprised of the collective progeny of a number of different parent lines) instead of pure line varieties can improve yield and buffer environmental variation (*Wheat Breeding project: AR 0914*). The Organic Research Centre ran a single season pilot trial comparing the performance of wheat populations bred in the UK to those bred by Geza Kovacs in Hungary, a country with a much harsher climate than the UK's.

Four populations were grown at Wakelyns Agroforestry, Suffolk in the 2005/06 season.

- A UK bred population, comprised of twenty parent lines, which had spent 2004/05 growing in Hungary. (a 'gap year');
- A Hungarian bred population, comprised of twelve parent lines, grown for the first year in the UK;
- A Hungarian bred population, comprised of six parent lines, grown for the first time in the UK; and
- The same population as above (Hungarian bred population comprised of six parent lines), now in its second year in the UK.

The subsequent yield data indicates the importance of using a wide genetic base to create populations, and the inherent ability of these populations to adapt to their environment.

The Hungarian population composed of six parents yielded almost three times higher when grown for the second year in the UK, compared to when grown for the first time in the UK (Figure 1). This result indicates that natural selection in the field has led to the second year population becoming more suited to its new environment, and outperforming the population that had just arrived in the UK (a very different climate from that in its native Hungary). The UK population grown in the UK out-yielded all the Hungarian populations, as expected, as this population was the best suited to its environment. The UK population's yield of 6.58t/ha was almost exactly equal to the mean of its component parent

varieties grown in the UK, that is to say it was 6-7% less than the equivalent population kept in the UK under consistent site adaptation.

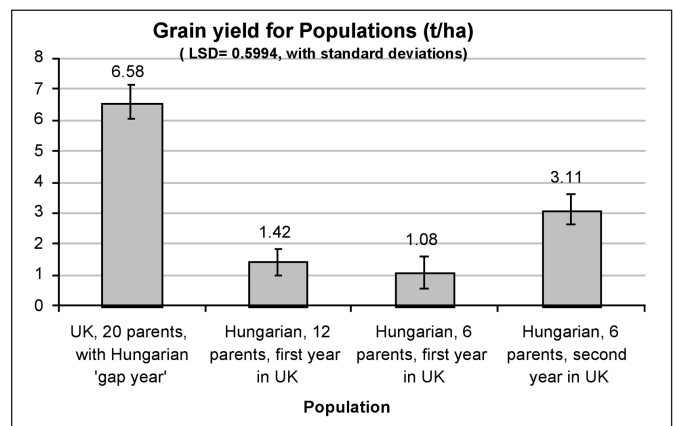


Figure 1. Grain yields (t/ha at 15% moisture content) of populations with either twenty, twelve or six parents. Populations are either from Hungary or have had a 'gap year' in Hungary and are now in their first or second year in Suffolk.

In theory, the broader the genetic base of a population, the higher the chance of diverse and useful traits being present, which could enable populations to perform better in a different environment. Of the two Hungarian populations grown for the first time in the UK, the one composed from twelve parents out-yielded the one composed from six parents (Figure 1), an indication that the wider genetic base helps to confer an advantage in optimising population performance in changing environments.

These results suggest that populations built from a larger parent base have an advantage compared with populations from fewer parents. The wider genetic make up of these populations provide them with more diverse traits suited to different environments, enabling them to adapt more quickly to changing soil type and climatic variability. It also indicates the ability of populations to evolve over time to suit their environment, becoming better adapted, and higher yielding.



Unlocking secrets of the ancients

Could an ancient cereal more commonly grown in Neolithic times help to stabilise yields in an increasingly unpredictable environment?

Einkorn (*Triticum monococcum*), an ancient relative of modern wheat, could be reconsidered for modern agriculture as it has been shown to perform well and have better adaptability in marginal areas in comparison with other crops, a trait particularly relevant now global warming has led to increasingly unstable climatic conditions.

Einkorn currently yields less than modern wheat, but with demand increasing for high quality, nutritionally rich, low input cereals, einkorn exhibits many favourable characteristics. It is particularly suited to organic farming due to its potential ability to compete with weeds, low nitrogen requirements, disease and drought resistance. Einkorn also has very high protein content and is easily digestible; recent studies have shown it may be less toxic to people suffering from coeliac disease.

Geza Kovacs at the Hungarian Academy of Sciences is carrying out an extensive einkorn breeding project and has produced several lines of einkorn with high yield and protein potential. Some of his early work has suggested that allelopathy is one factor in einkorn's adaptability and competitiveness against weeds. Allelopathy is the production of specific bio-molecules by one plant that can adversely (or beneficially) affect another plant. Geza supplied The Organic Research Centre with material to run a single season pilot trial to investigate this weed competitiveness in the UK.

Field trials assessed weed suppression by einkorn in the field compared with winter wheat (cv. Hereward) and oats (cv. Gerald). Measurements of crop and weed cover were taken on twelve assessment occasions approximately every two weeks during the 2005/06 season.

Results indicate an inverse relationship between crop cover and weed suppression. Mean crop cover increased with time, as expected, and began to stabilise and decline with senescence later in the season. Crop cover was significantly different for each species at each assessment occasion (Figure 1, $P < 0.001$). Oats had highest crop cover throughout the assessments, as expected. Einkorn tended to have the lowest crop cover.

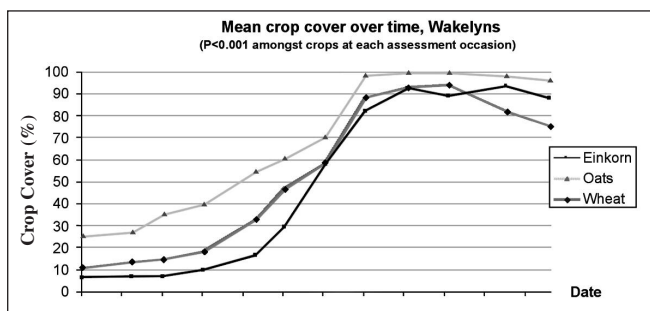


Figure 1. Crop cover for winter wheat (Hereward), oats (Gerald) and a population of Hungarian einkorn throughout the growing season 2005/06, Suffolk ($P < 0.001$ amongst crops at each assessment occasion)

Weed cover was assessed in relation to bare ground. Einkorn performed similarly to wheat and oats throughout the growing season despite having a significantly lower crop cover.

There were significant differences (Figure 2, $P < 0.001$) in the mean grain yield in the rank oats > wheat > einkorn, as expected.

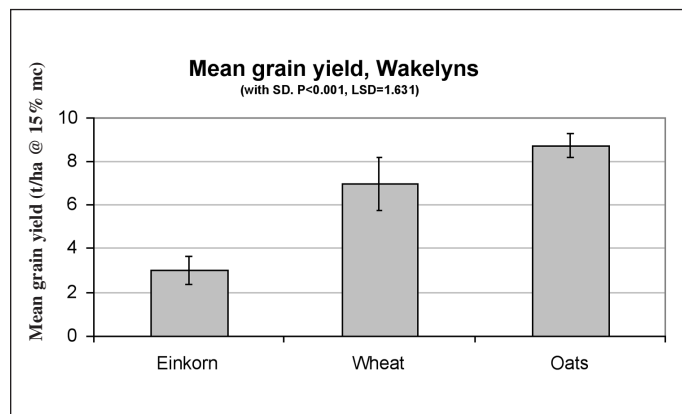


Figure 2. Mean grain yield (t/ha at 15% moisture content) for winter wheat (Hereward), oats (Gerald) and a population of Hungarian Einkorn, 2005/06, Suffolk ($P < 0.001$, l.s.d. = 1.631, error bars show standard deviation).

Dr Kovacs' breeding programme has significantly increased einkorn yields in Hungary from 1-11/2 t/ha to around 5t/ha for the best lines. It is encouraging that the einkorn grown in our pilot trial yielded 3t/ha despite being grown in the UK for the first time. We would expect this yield to increase if grown for a second season in the UK.

In this pilot trial einkorn was not seen to compete significantly more with weeds than either wheat or oats, however allelopathy is extremely difficult to assess in the field and further research is needed to elucidate these effects. Work by Dr. Kovacs in Hungary (since the establishment of this trial), has shown other populations of einkorn have a greater potential to suppress weeds than the one grown in this trial. While, at the moment, einkorn yields less than many modern crops, the potential exists for developing specialist flour markets.

Zoe Haigh

Watch on Wal-Mart

In the United States, Wal-Mart is being investigated for falsely advertising conventional products as "organic." The Cornucopia Institute has discovered that a number of Wal-Mart stores are defrauding consumers by labelling products as organic that were grown using pesticides and synthetic fertilisers. A formal legal complaint has been filed with the USDA asking the agency to investigate allegations of illegal "organic" food distribution by Wal-Mart Stores.



Brain food - a good read

Organic classics re-issued

The Soil Association has recently re-published Eve Balfour's influential book *The Living Soil*, in its original 1943 edition but with a new and detailed Introduction by director Lawrence Woodward. The Introduction gives a biographical sketch of Eve Balfour and her reasons for writing the book, setting it in its context of a popular desire for post-war reconstruction of British life. Lawrence examines the philosophical and scientific concepts on which *The Living Soil* is based and discusses their current status, arguing that they are supported by developments in nutritional research. He concludes that "*The Living Soil* contains profound insights into the nature of Man and the biological base of our existence". This new edition also contains a Foreword by Soil Association President Jonathan Dimbleby.

Two other "Organic Classics" have been re-issued along with *The Living Soil*, both by authors who inspired Eve Balfour. Sir Albert Howard's *Farming and Gardening for Health or Disease* (1945) gives the fullest account of the work and ideas of the agriculturalist who argued for organic cultivation against fierce opposition from the fertilizer industry. Philip Conford's Introduction looks at Howard's scientific background, work in India and commitment to the organic cause in his later years. HRH the Prince of Wales has provided a Foreword.

Howard's friend Lionel Picton, author of *Thoughts on Feeding* (1946) was responsible for the *Medical Testamento* of the Cheshire doctors, launched in 1939. This manifesto, included in full in the book, argued for research into the relationship between soil, food and health. Picton, a GP who used nutrition as preventive medicine, offers a wide survey of dietary issues in historical context. Philip Conford again provides a new Introduction, and there is a Foreword by nutritionist Patrick Holford.

All three books are priced at £8.95 and are available direct from the Soil Association (0117-314-5000).

Carbon trading - an absurd market

"Carbon Trading: A Critical Conversation on Climate Change, Privatisation and Power" is a new and stimulating book destined to fuel the growing debate about global warming. It is co-published by the Dag Hammarskjöld Foundation, the Durban Group for Climate Justice, and The Corner House.

Written in dialogue format, it illustrates how the dominant 'carbon trading' approach to climate change is both ineffective and unjust. Carbon trading is the centre piece of the Kyoto Protocol and other schemes for tackling climate change, but is prolonging the world's dependence on oil, coal and gas and therefore slowing down the social and technological changes needed to cope with the problem.

Carbon trading has two parts. First, governments hand out free tradable rights to emit carbon dioxide to big industrial polluters. Second, companies buy additional pollution credits

from projects in the South that claim to emit less greenhouse gas than they would have without the carbon market investment.

Carbon trading "dispossesses ordinary people in the South of their lands and futures without resulting in appreciable progress toward alternative energy systems," says the book's editor, Larry Lohmann.

"Tradable rights to pollute are handed out to Northern industry, allowing them to continue to profit from business as usual. At the same time, Northern polluters are encouraged to invest in supposedly carbon-saving projects in the South, very few of which are actually helping to halt dependence on fossil fuels."

In detailed case studies from ten Third World countries — Guatemala, Ecuador, Uganda, Tanzania, Costa Rica, India, Sri Lanka, Thailand, South Africa and Brazil — the book shows how 'carbon offset' projects, such as those promoted under both the Kyoto Protocol and private 'carbon-neutral' schemes, have had a detrimental impact on local communities while prolonging industrialized countries' excessive pollution of the atmosphere.

Says Indian activist Soumitra Ghosh - "This is the most absurd and impossible market human civilization has ever seen. Carbon trading is bad for the South, bad for the North, and bad for the climate."

The book can be downloaded at <http://www.thecornerhouse.org.uk> For printed paper copies, please contact The Corner House at - enquiries@thecornerhouse.org.uk

Growing green - Jenny Hall and Iain Tolhurst

"If you want to make a real difference producing decent food on your own small but significant portion of the world, this book will tell you most of what you need to know." So says fellow grower Tim Deane in his review of this new book from the such devoted and enthusiastic experts of Jenny and Iain.

In an age where dreams of self sufficiency seem so unattainable, *Growing Green* shows that making a living from growing organic vegetables can be achieved by anyone willing to rent land.

Says Paul Robertshaw of the Welsh College of Horticulture - "Not only does this book inform you how to grow commercially, it does it with compassion, sustainability and the planet in mind. Essential reading for all my students."

A central feature of the book's philosophy is stockfree organic. It sets out to show that when growers abandon the use of slaughterhouse by-products and manures they can be rewarded with healthier crops, less weeds, pests and diseases.

*Growing Green is published by The Vegan Organic Network www.veganorganic.net
Price: £18.99*



Not too late to protect the future – the organic role

The closing address to the Cirencester Conference 2006 by Lawrence Woodward and David Fleming

At the end of the year it is fitting to consider the future; which, lets face it, is not too rosy, although there might be some optimistic tones.

The world's food stocks have now again fallen close to the lowest level on record – around 50 days supply; total grain production is again in decline whilst consumption grows. A projection of world food supply and demand over the next 20 years suggests a deficit of around 600 million tons of grain, roughly the entire current grain consumption of the United States and China.

Water is becoming an increasingly scarce resource. Some of the main grain-producing regions have depended on underground reserves, which are close to depletion. The capacity of rivers to provide water for irrigation in many key production areas is at, or close to, its limit. Large areas of agricultural land are subject to erosion and salination. Around 30 per cent of productive land is estimated to suffer from moderate or serious erosion

And then there is climate change. The International Panel on Climate Change has repeatedly said that merely to prevent any further increase in atmospheric carbon dioxide would require an immediate 60% cut in emissions; which will not happen, because to do that will stop the global economy dead in its tracks. And so we have the Kyoto Agreement instead and we can't even make its woefully inadequate targets stick.

Although everyone is now talking about climate change and carbon emissions - offsets and footprints are the latest lifestyle fashion - not many people understand how few choices we actually have.

A sustainable retreat

The literature on climate change makes frightening reading. "The Revenge of Gaia" by James Lovelock brings together all the science and concludes that "the Earth system is fast approaching the critical state that puts all life on it in danger..... we suspect the existence of a threshold, set by the temperature or the level of carbon dioxide in the air; once this is passedthe Earth will move irreversibly to a new hot state. We are now approaching one of those tipping points.....that is why it is much too late for sustainable development; what we need is a sustainable retreat."

Lovelock talks in terms of wartime to discuss the actions that might have to be taken: "The prospects are grim...and even if we act successfully in amelioration, there will still be hard times, as in any war, that will stretch us to the limit. We are tough and it would take more than the predicted climate catastrophe to eliminate all breeding pairs of humans; what is at risk is civilisation."

However, it is clear that cheap hydro-carbon energy which has fuelled global warming is coming to an end and this will force us into change that might mitigate global warming to some extent.

We are now approaching, possibly may be at, the point at which production of conventional oil peaks. From here on it declines surprisingly rapidly because of the nature of extraction; from around 2010, supplies of all sources of oil peak; and sometime around 2015 to 2020 all hydro-carbon production peaks. There is no serious dispute about this, just some quibbles about dates. The decline in output may be uneven but it is inevitable and it will have a drastic effect on the world's economy including the food system.

The reality of "Peak Oil"

We have been writing and talking about this scenario for over 10 years but it's now called "peak oil", has become fashionable and is even permitted conversation in polite non-lunatic circles. Unfortunately, our conclusions are not.

We have left it too late to develop alternative energy sources that would allow a seamless transition to a new economy. Now business as usual is not an option; the world's economy is going to be volatile at best; it might collapse but it will certainly suffer significant dislocation and all economic activity will be profoundly affected, including how we produce food, what we produce, how we process it, how we distribute it and who gets it.

The limits of finite resources, the life threatening consequences of global warming, and the crisis of hydrocarbon depletion are visible to anyone who wants to look. Any one of them could affect the global economy not only by stopping economic growth but possibly reversing it, reducing the output of the market economies on a scale sufficient to provide conditions for the complete collapse of our civilisation.

The "Limits to growth research team" used to argue that we could avoid this if we take radical action before 2015. That is in less than ten years time but is at least a bit of cheer for Christmas.

Organic to the rescue

Taking action is another matter. We are sure that some readers think this is over the top rubbish, others will recognise the validity of at least some of it and want to do something about it; they may even think that being associated with organic agriculture is doing something about it.



But there is no serious player on the world's stage who believes that organic farming has anything to do with or anything to really contribute to solving these problems. James Lovelock makes a brief and scathing reference to it; that other prominent environmentalist, Jonathon Porritt in his recent book, does not even mention it.

Why is this? The organic sector has been successful over this period; there is a burgeoning organic market; there are more organic farmers throughout the world; so why have we not made the impact we should have on those fundamental, life and death issues?

First of all it is because politicians and government officials have not acknowledged the gravity of the situation our world is in. Those morons in Washington barely accept that global warming is happening or is caused by human activity. But the response from more enlightened governments is also woefully inadequate. Throughout Europe they are blighted by the notion that we can have something called sustainable development; in other words have our cake and eat it without making more than minor modifications to how we live. They would have us believe that we can have sustainability and be competitive in a free trade, global market and that economic growth must be pursued at all costs.

Clarity of purpose

Secondly, those of us who call ourselves the organic movement have not acted as a movement; we have lacked coherence; outside of conferences we have not behaved as a community; so much so that although there is a valuable organic market and many people are making money, organic farmers everywhere have been, and in many places still are, struggling financially. And we have lacked clarity.

Let us be clear now; we simply cannot carry on as we are.

We do believe that the principles and principal characteristics of organic farming - self-regulating metabolic cycles tending towards closed systems, the use of local resources, the reduction in the use of fossil fuel, the employment of appropriate technology, the use of decentralised systems for production, processing and distribution; - are the best way a food and farming system can respond to the environmental, economic and social collapse of which this planet is on the brink. Also that it is the responsibility of the organic movement - here and internationally - to initiate and carry through that response.

However, some things have to happen to enable that.

Firstly, organic farmers everywhere need help and - we make no apology for using a word which seems falsely to have become an obscenity - protection. What is wrong with protection? We all protect our children and the things that are dear to us. We have to protect our planet and government policies should protect those - like farmers - who are protecting our primary resources.

Our current economic framework does not do this and until it does all organic farming and localisation initiatives are vulnerable. So we have to work with others to persuade governments to introduce appropriate policies. One of which is Tradable Energy Quotas rather than carbon taxes which will unfairly burden small businesses and low income groups.

Secondly, we have to do some things for ourselves as a movement. Beggar my neighbour marketing is not appropriate. As our principles say we have to be fair, equitable, just and care for each other in this organic community. So let us stop using standards and certification to facilitate unsustainable global marketing and instead use them to differentiate, protect and reward those genuine organic producers who will provide the basis of local food security in the years to come. Let us use international networks of organic producers to facilitate equitable trade on the basis of mutual need not unsustainable trade.

Localising the economy

Thirdly, local and regional economies will be the best, most democratic way of providing the things that matter in the future. But the end of cheap oil which underpins globalisation does not automatically mean that democratic localisation will follow. Therefore, we need to work with other groups to create local networks that can build local economies. A good example is the county of South Berkshire in Massachusetts where the Chamber of Commerce and local banks have worked with businesses and people to create a local currency. This provides resilience and protection to local businesses and facilitates a local economy. Local energy generation, appropriate technologies and the application of the proximity principle are the natural conceptual partners of principled organic farming

Fourthly and critically we must work together as an organic movement to convert people from being organic consumers to being organic citizens. Our planet cannot afford consumers and we will not survive without citizens who understand the ecological limits of farming and food production.

However, the pre-requisite for all of it is the existence of a viable and energetic organic producer movement which speaks for itself, as far as possible takes its own fate in its hands and does not lose sight of its importance.

Hopefully, the producer conference, "Organic Producers: In Principle and In Practice" has helped in the regeneration of the organic producer movement: The formation of Organic Growers Alliance and the Campaign for Real Organic Poultry are important steps forward; as are the open discussions we held at the conference on some of the issues that have been hidden or unspoken for too long.



Bumper oat yields - Tardis trials top ten tonnes

Record yields of oats have been a feature of our arable trials programme this year. Tardis, a new husked oat variety from IGER, gave an average yield of 10.5 t/ha at Wakelyns Agroforestry, the OATLINK trial Site in Suffolk, with the trial giving an overall average yield of 9.8 t/ha. In last season's trials, Tardis came a very close second to the established variety Gerald, but this year Tardis outperformed Gerald significantly at both the Suffolk and Berkshire sites.

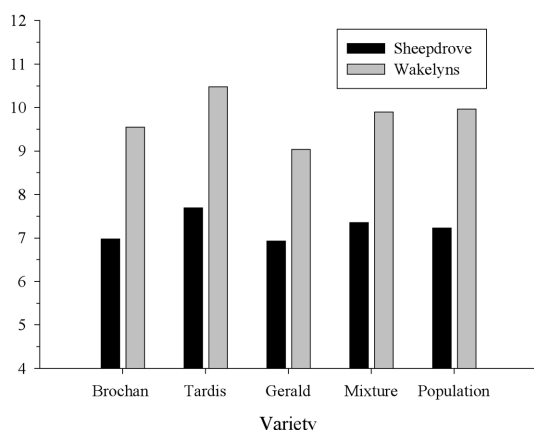
The Organic Research Centre is currently involved as the organic partner in the OATLINK project. This project, led by IGER, Aberystwyth, aims to incorporate important traits into the oat crop through combining 'conventional' phenotypic selection with molecular marker technologies. Key traits of oats for human consumption and poultry feed are being selected to meet the needs of millers and the poultry industry within sustainable agriculture including organic production.

In this, the second season of trials, two experiments, one containing 3 naked oat varieties (Expression, Grafton, Ragoon) and their three-way mixture, and the other, 3 husked oat varieties (Gerald, Tardis, Brochan), their three-way mixture and a bulk of IGER lines selected at F2 ('population'), were established at Wakelyns Agroforestry, Suffolk and Sheepdrove Organic Farm, Berkshire in October 2005. The oats were sown as the first cereal in the rotation. Varieties were sown at either a normal (200kg/ha) or low (150 kg/ha) seed rate and the low seed rates were either undersown with white clover or not undersown.

Husked Oat Experiments

As mentioned above, Tardis yielded the most at both Wakelyns and Sheepdrove, although yields were higher at Wakelyns (Figure 1). The second highest yielding variety at both sites was another new variety, Brochan. Brochan was significantly shorter than the other varieties and mixtures (Table 1) and had better standing power, suffering significantly less from lodging than the other varieties after heavy rainstorms at both sites just

Figure 1. Mean yields (t ha⁻¹ at 15% moisture content) of husked varieties grown at Sheepdrove, Berkshire (black bars; s.e.d. = 0.399) and Wakelyns, Suffolk (grey bars; s.e.d. = 0.307) in the 2005/06 season.



before harvest. The mixture of the three varieties yielded 2 % higher than would be expected from the average of the variety yields, and the 'population' had similar yields to the mixture (Figure 1).

The differences that were detected in the yields of the varieties could have been predicted from results much earlier in the season. Although there were no differences in plant establishment numbers at either site, at Wakelyns Tardis had the highest level of crop cover early in the season, followed by Brochan, with Gerald having a significantly lower level of early crop cover (Table 1). This trend was seen again, this time at both sites, later in the season when maximum Leaf Area Index (area of green leaf per unit area of ground) was determined (Table 1).

Tardis also performed the best in terms of disease; it had significantly lower disease levels than Gerald at Sheepdrove. Interestingly, the variety mixture had 25% less foliar disease than would have been expected from the average of the component varieties, showing the effectiveness of mixtures in controlling the spread of disease.

The specific weight results were the only ones that showed a different trend. In this case, Gerald had significantly higher specific weights than the other entries (Table 1).

Table 1. Mean early crop cover, Leaf Area Index, height and specific weight of husked varieties grown at Sheepdrove, Berkshire and Wakelyns, Suffolk in 2005/06.

Site	Variety	Early crop	Maximum		Specific
		cover (%)	Leaf Area Index	Height (cm)	
Wakelyns	Brochan	46.4	9.96	104	47.1
	Tardis	50.1	9.75	110	48.0
	Gerald	36.3	8.98	111	50.2
	Mixture	45.3	9.80	110	48.1
	Population	46.7	9.89	114	49.5
	l.s.d.		4.34	0.455	3.7
Sheepdrove	Brochan	16.0	6.60	96	45.4
	Tardis	17.8	6.31	99	45.2
	Gerald	17.3	5.97	105	48.1
	Mixture	17.8	6.95	113	46.5
	Population	18.8	6.48	101	47.7
	l.s.d.		4.74	0.632	4.1

In 2005/06 white clover was only drilled under oats at a lower seed rate due to the competitive nature of the crop. However, at Wakelyns, the clover again failed to establish because, even at the low seed rates, the oats were still too competitive. The undersown clover did establish at Sheepdrove, though, and significantly increased yields of oats at the lower seed rates. However, since the yield of the low seed rate was significantly lower than that of the high seed rate, the increase due to the



undersown clover only brought the yields back up to the same level as the high seed rate.

Naked Oat Experiment

As in 2004/05, the naked varieties did not establish as well as the husked varieties. As expected, due to the absence of the husk overall average naked oat yields were lower than the husked varieties (6.9 t/ha at Wakelyns; 5.7 t/ha at Sheepdrove).

Significant yield differences among the varieties were only detected at Wakelyns where Expression yielded the highest. However, Expression had the lowest specific weight at Sheepdrove, an effect that was also evident at Wakelyns.

Next years trials have been established at the two sites, but to make the trials as close to farm practice as possible the main experiment has been drilled as the second cereal in the rotation. The same varieties will be grown along with several seed production lines from IGER to see which have the potential to perform in organic systems.

Further information can be found at www.efrc.com or the OATLINK website, www.iger.bbsrc.ac.uk/OatLink/. This project is sponsored by Defra and SEERAD under the Sustainable Arable LINK programme.

Sarah Clarke

A planet destroyed by livestock?

A call for major reform of the world's livestock sector has come from the Food and Agriculture Organisation of the UN (FAO) following a new study which indicates that, overall, livestock production is more polluting than transport.

When emissions from land use and land use change are included, the livestock sector accounts for 9 percent of CO₂ deriving from human-related activities, but produces a much larger share of even more harmful greenhouse gases. It generates 65 percent of human-related nitrous oxide, which has 296 times the Global Warming Potential (GWP) of CO₂. Most of this comes from manure.

And it accounts for respectively 37 percent of all human-induced methane (23 times as warming as CO₂), which is largely produced by the digestive system of ruminants, and 64 percent of ammonia, which contributes significantly to acid rain.

To remedy this pollution the FAO is calling for an increase in the efficiency of livestock production and feed crop agriculture. It also wants an improvement in livestock diets to reduce enteric fermentation and consequent methane emissions, and far greater uptake of biogas plants to recycle manure.

Says Henning Steinfeld, chief of FAO's Livestock Information and Policy Branch and senior author of the report: "Livestock are one of the most significant contributors to today's most serious environmental problems. Urgent action is required to remedy the situation."

With increased prosperity, people are consuming more meat and dairy products every year. Global meat production is projected to more than double from 229 million tonnes in 1999/2001 to 465 million tonnes in 2050, while milk output is set to climb from 580 to 1043 million tonnes.

Expert panel applauds European Organic Agriculture

Francis Blake, president of the IFOAM EU Group has called upon the European Commission "to use organic farming to its maximum advantage" to deliver the targets of the Lisbon Strategy.

About thirty-five experts from the organic sector discussed for two days the role of organic agriculture in the framework of the Lisbon Strategy at a CAP seminar in Brussels. The Rural Development regulation, together with the Strategic Guidelines, is a central tool to implement the Lisbon Strategy in European agriculture. From the point of view of the targets "Growth, Jobs and Sustainability", the participants discussed, together with experts from the European Commission and researchers, the progress and experiences made with Rural Development programmes across Member States.

They all agreed that Rural Development programmes provide the most important tool to realize the Lisbon Strategy in the

field of agriculture. The participants also agreed that organic farming is an important factor to make the Lisbon Strategy successful and appreciated that the important role of organic farming is recognised in the Rural Development programme, as well as in the Strategic Guidelines.

Reports from the Member States about practical experiences and scientific evidence showed that, depending on the regional situation, organic farming can provide more employment - on the farm, in processing, tourism and marketing. The average age of organic farmers is lower in many countries; organic farmers are more engaged in on-farm-processing and direct sales and are highly innovative. This creates added value, consumer confidence, and viable rural regions. In this context, the experts criticized the fact that the implementation of organic farming measures throughout national Rural Development programmes is not obligatory.



Multi-age flocks - a viable solution to end weight variability?

A common problem when keeping organic table birds is variability in final bird weights within a batch of chickens. Most organic producers will find that - unlike their conventional counter-parts, which are grown for short periods in highly regulated and controlled environment - organic birds are subject to high levels of environmental variation during their growing life, which can have a real impact on final live weight. When compared to conventional birds the population distribution of these birds tends to be more of the classical bell shape, with a spread distribution of birds from small to large. This results in a variable income for the farmer from batch to batch. A suggestion for combating this problem is that beyond the minimum age limit, birds are only selected for slaughter if they are above a critical live weight. This system has inherent complication as farmers operating a routine of once a shed is cleared it is restocked, may give gaps where new birds cannot be laid down due to older birds still occupying the shed.

Multi-age flock behavioural benefits

One possible way to grow birds to weight is to grow them in a multi-age flock, this was a possible solution investigated at Sheepdrove Organic Farm. Does this make sense in terms of chicken behaviour? Modern domestic chickens are all descended from the red jungle fowl (*Gallus gallus*) which still occurs in wild flocks. These birds tend to live in small family groups of a cock and a few hens. It has been shown that feral domestic fowl show a high level of similarity in their behaviour to that of wild red jungle fowl (Dawkins, 1989). So it is feasible to suggest that modern chickens would cope in a multi-age flock, and that it may even be beneficial to younger birds within the flock, as once established younger chicks entering a flock would have some older con-specifics which they could learn from, through observation and imitation learning techniques.

Possible welfare concerns

An artificial multi-age growing flock will differ greatly from an established feral flock of chickens or a natural flock of red jungle fowl. The nature of growing birds for the table means they have short life spans, not ever reaching full maturity and therefore any multi-age flock would not have truly mature adult birds within it. In addition there could be a risk of the smaller/younger birds suffering from bullying by older/larger individuals. This could manifest as feather pecking, which is problematic due to its cumulative nature, once red skin on the bird is exposed this heightens pecking rates. Another bullying concern is ability to obtain resource access or 'gate keeping' by larger/more dominant birds. This could be for perch space, for pop-hole access or even more importantly for access to feed and water.

A pilot trial

Due to the potential problems and welfare concerns with having a multi-age flock, it was suggested that a small closely monitored pilot trial be undertaken as a starting point to assess any potential for reducing variability. A pilot would also help establish the relative impact of these variables, and test the feasibility of this production style.

The pilot consists of 1 shed, with the capacity to hold 100 birds. Added to this shed each week are 10 birds of 21 days of age. Birds of this age were used, as in the existing system, at the age when they move from brooding sheds to the field environment. Chickens were then added to the shed each week until the first batch reached normal slaughter age (77 days). In total 8 batches of birds were added to the shed. Each bird was leg ringed so they could be individually identified. Throughout the pilot, a variety of data was collected including weekly weight data, gait score and cleanliness prior to slaughter, and health and general welfare. The birds were also observed for short periods each week to ensure negative behavioural interaction was not taking place. The chickens were slaughtered once a week. Each week on the day prior to slaughter any chickens beyond the age of 77 days old were weighed. If these chickens were above the threshold weight of 2.7 kg they were lairaged for slaughter the following day.

Initial findings and limitations

Despite the potential problems and welfare concerns of running this pilot, the initial findings have been good. Very little negative interaction was identified and it has been noticed that younger/smaller birds defer to older/larger birds with regards to access to feed and perches etc. These younger birds occasionally got pecked as a warning but no physical damage resulted. In addition, all the birds grew well with most batches taking 3 weeks for all the birds within a batch to reach 2.7kgs live weight limit.

Although the pilot illustrated none of the possible welfare concerns and was able to achieve consistency in final live weight, it did demonstrate some practical limitations. One of the main limitations of the system was the time input required. The need to weigh the birds prior to slaughter each week, made the process very labour and time intensive. Also the birds had to be legged ringed so their batch and therefore age was easy to determine. This too was very time consuming, and added an extra step when catching the birds as they need to be removed. A large logistical problem with the trial was that in order not to have to starve all the birds each week the birds due to be slaughtered needed to be weighed and separated in a non-feed lairage area the night before they were slaughtered. This meant that a second lairage shed was required. Addressing such limitations will be the subject of a future trial.

Josie O'Brien



Progress of sorts at organic vegetable seed workshop

A workshop entitled “Organic Seed on the Move” was held in Warmenhuizen, Holland on 28th and 29th September with a focus on the progress made in the provision of organic vegetable seed across the EU. The workshop was organised by the European Consortium for Organic Plant Breeding (ECO-PB), the Danish Agricultural Advisory Service and the Organic Revision Project. Participants heard about seed supply, the working of the organic seed regulation, the progress made by different EU member states and the challenges of organic vegetable seed production. Feedback was given through a series of breakout sessions and there were tours of two Dutch seed companies active in this area, Bejo Zaden and Vitalis.

Many of the participants at the workshop were researchers, advisors, policy makers, etc. who were very keen to push forward the use of organic seed in vegetable production. This was in marked contrast to input from growers either as individual contributions on the day or from surveys and other forums. In general the view from growers is that it is important to promote the use of organic seed but not to the detriment of other arguably more important issues for organic farming. On a more practical level there has to be seed of the right quality of the right varieties at the right price, and there has to be more than one or two varieties to choose from in the database.

A full report and the presentations can be found on the ECO-PB website (www.eco-pb.org) so this summary will focus on some of the important points that arose. The first of these is the fact that there are considerable differences between Member States in the implementation and operation of the relevant EU Regulation (1452/2003). Countries are required to operate national databases that track the availability of all organic seed. Some, including the UK, use OrganicXseeds, the database model developed by FiBL while others have developed their own models. Some use a static Excel spreadsheet that cannot be updated in real time as the others can.

The Regulation has an Annex in which crop species are placed when it is deemed that there is sufficient range and supply of seed to satisfy market requirements. This is presently empty though some MS have introduced a similar arrangement on a national basis. Once a crop species has been selected for a national ‘Annex 1’ organic seed must be exclusively used. For species where availability is poor some MS have introduced general derogations which allow the use of non-organic seed without the need for the granting of a specific derogation. In both situations the governments and/or responsible authorities have appointed appropriately qualified expert groups. These include growers in most cases.

The UK has adopted neither approach with the result that all derogation requests have to be treated individually (the one exception is the 60% minimum applied to grass and fodder mixes). One consequence of this approach is that there is no specific expert group set up in the UK. All countries are

required to submit an annual report to the Commission and it was noted the quality, detail and content of the reports varied widely, and for some the reports were completely absent.

In terms of derogations granted there were some interesting statistics. In 2004, the UK issued nearly 27,000 individual derogations, a figure that had reduced in 2005 to just over 9,000. In the same time frame the numbers for Italy stayed constant (over 28,000), reduced slightly in France (~17,000) and increased from 6,800 to 8,400 in Germany. In those countries where it was possible to sort the data the proportion of vegetable seed derogations was in the order of 30-35% of the total number. It should be stressed that these are all bald numbers and do not give a clear picture of the actual quantity of seed used or the area planted.

A number of recommendations arose out of the FiBL review of national reporting. The reporting scheme should be standardised across all EU states in order to allow meaningful comparisons to be made and areas should be included to give a clearer picture. Vegetative material such as onion sets should be included on the official databases while general derogations should be phased out over the next five years. All reasons for the granting of derogations should be given and lists of equivalent varieties should be drawn up to guide growers in their choice.

There was general support at the workshop for the idea of dividing vegetable species into groups according to how easy it is to produce organic seeds from each species. There would thus be an expectation that a greater proportion of organic seed use in the easier groups. It was also suggested that the more important crop groups be identified and available funding focused on them. Cost is often cited as a major penalty when using organic seed and there was support for the idea that growers who receive derogations should pay the difference between what they pay for non-organic seed and the organic equivalent.

Roger Hitchings

Global domination for Chinese fruit and veg

China, producer of half the world's fruit and vegetables, is set to overtake the Netherlands in the next two to three years to become the world's third biggest fresh produce exporter in value terms, according to a new report from agriculture analysts at Rabobank.

“The proportion of added-value processed and prepared products, coming out of China, compared to fresh has been increasing,” said Patrick Vizzone, head of the bank's food and agricultural advisory and research unit for Asia.

Others fear that China is exploiting low labour costs to become the dominant grower of produce like persimmons, pears and asparagus. It exported fruit and vegetables worth US\$7.2 billion last year, according to data from Rabobank and the United Nations. This amounted to 7.2 per cent of the global trade, in a league table behind the Netherlands, the US and top exporter Spain.



Letters and comment

Sir - GM coexistence should be resisted

What is the hurry?

What is the need?

What are the long term effects on the environment?

What are the long term effects on homo sapiens?

How will it benefit the grower?

How will it benefit the consumer?

Have all these very important questions been thoroughly and conscientiously answered ?

I strongly suggest that coexistence is resisted until we have satisfied ourselves about this.

However, if coexistence is allowed, and the inevitable contamination occurs beyond the 0.9 % suggested, then the 'polluter pays' principle must be enforced. European courts of justice will undoubtedly find against GM growers and suppliers, so this should be borne in mind regarding a fund from which to compensate the aggrieved.

Imagine the outcry if organic growers are forced to cease organic production having been encouraged and subsidised by the taxpayer to start organic production. A political suicide mission is being planned.

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Sir - Organic salmon and standards

How refreshing to read your articles (Bulletin 85) on "organic" salmon and standards in general. We completely support your stand on salmon and the whole issue of the problems with the standards and what should be our underpinning basic philosophy.

It was interesting as recently I was at a Soil Association meeting, developing an action plan for the East Midlands where it was the unanimous view of all those present (producers, processors, retailers, consumers) that most of the problems currently besetting the organic movement would be at least partially solved if we went back to our core philosophy. It was also interesting that very few retailers and processors attending had not experienced a slump in sales in the last 6 months, with all those involved in farmers markets and farm shops experiencing a fall.

It is time we got back to these marketing basics, as all we have achieved is an ability to farm in a more sustainable way without having any enduring effect on the rest of the supply chain. We are especially at risk in the local food economies we

have so worked to establish from the supermarkets getting ever more deeply involved in the organic market. If we are not careful they will destroy what has been established over the last decade despite their efforts. In fact their new found organic enthusiasm and involvement are an admission of their failure. But never the less, their search for local organic products to put somewhere on their shelves via their vast distribution network does pose a significant risk to many local networks.

Thanks for your stimulating and inspiring Bulletin

Graeme and Vivienne Matravets

New Zealand - the organic jewel of the Pacific Ocean?

I well remember it all started in Copenhagen at the IFOAM Conference in 1996. There Lawrence Woodward presented a paper on the un-sustainability of sending New Zealand apples across the world to Europe. In the last few months there has been a concerted effort to expand these concepts riding on the back of the increasing evidence that planet Earth is indeed in grave environmental trouble.

Obviously as a long time supporter of a better and more sustainable world I agreed to an extent and have sympathy with the sentiments now, but for different reasons.

In a world so beset with environmental problems, New Zealand has always been seen as a jewel set in the vastness and purity of the South Pacific. Remote from the world it had the potential to be the perfect larder for those more polluted areas of the world, and indeed that is how the world perceives New Zealand as, clean and green.

It was because of this that along with a dedicated group of like minded people, New Zealand, like Britain established an early organic agricultural movement which by 1988 had established an organic certification scheme under the BIO-GRO label which was accredited by IFOAM as one of the best systems of Organic Certification in the World and one of the first six in the world to have passed IFOAM International scrutiny.

This was crucial to the Organic movement in NZ because it was deemed important that the only way to achieve a totally organic nation would be by successfully selling certified organic produce to the world and establishing a reputation for quality organic production with integrity.

However the dream has not been realised because outside NZ we are perceived as already producing clean green production in environmental harmony with the natural world. Within NZ many also believe this myth.

In 1988 probably no more than 0.1% of the agricultural area was Certified Organic. By 2006 NZ can boast probably no more than 0.2% Certified Organic. In the last 6 years or so as



Letters and comment

the NZ Commissioner for the environment, Morgan Williams outlined in a report in 2005, inputs into agriculture have exploded in some cases by hundreds of percent placing increasing strain onto our already strained environment.

My message therefore to all you good organic consumers in the UK and indeed Europe is not to throw out the baby with the bath water. Change your tack and demand Organic Certification with International Accreditation. Without such consumer pressures the NZ Government will continue to ignore the Organic Lobby in NZ and the farmers will continue to be justified in regarding NZ as the most efficient and environmentally sustainable producers in the world.

It is worth noting here that nearly all NZ primary produce and product would be sea freighted where energy per unit is constantly likely to be decreasing whereas our agricultural productivity is rapidly increasing due to massive inputs which are placing the environment in jeopardy with a very real risk that GM technology will be the next step.

Help us turn NZ around by demanding Internationally accredited Certified Organic Produce and Products, make your voice heard over here through your actions over there.

Bob Crowder - Visionary for a true clean green NZ

The fallacy of food miles

Food miles are becoming an increasingly important issue in the UK food sector, both organic and conventional. However, a recent report by Prof Saunders from Lincoln University in New Zealand has been highly critical of food miles calling it "a very simplistic concept" and suggests, "it is misleading as it does not consider total energy use, especially in the production of the product". I argue that even a complete energy analysis is short of the mark and in addition, linking the food miles or other production issue with buying British produce is not rational and even worse it is anti-ecological and smacks of xenophobia.

Looking first at food miles, I agree with Prof Saunders; food miles are a totally nebulous concept, which is based on media sound bites and easy to grasp concepts that have no foundation in a rigorous analysis of the environmental sustainability of food production. The main issue underlying food miles is the energy required to transport our food from field to plate most of which is from non-renewable, CO₂ releasing fossil fuels. However, the energy used in food transport is only part, often a small part, of the total energy required in the entire food production cycle, as shown by Prof Saunders. To use a somewhat extreme example, the production of out of season tomatoes in the UK using heated glasshouses and nutrient film irrigation uses large amounts of fuel for the manufacture of the glasshouse, heating / lighting the crop and production of fertilizers to name the key energy sinks. If the tomatoes were

produced outdoors, in soil, in the southern hemisphere and transported to the UK, the total energy consumed of the field-grown crop would be much lower than the homegrown one, even though the transport energy (food miles) is far higher.

As Prof Saunders' report points out, the total energy consumption of food production can be many times the amount used in transport. This also applies for much less energy intensive production than hothouse tomatoes. To quote the report: "the UK uses twice as much energy per tonne of milk solids produced than NZ... The energy used in producing lamb in the UK is four times higher than the energy used by NZ lamb producers... NZ is also more energy efficient in producing and delivering apples to the UK market than the UK is. NZ energy costs for production are a third of those in the UK".

All these calculations include transport energy (NB - these are figures for non-organic production systems).

However, energy is only one of many inputs into food production systems plus there are a range of outputs and outcomes apart than the food itself. For example, there are impacts on soils, water bodies, nutrient cycles, local and regional cultures and ecosystems to name a few. All of these, and many more, are often more important components of the environmental sustainability of both organic and non-organic production systems than the energy consumed by production and transport. What is the point of choosing food because it used the least amount of energy during production if its production has resulted in massive soil degradation, social displacement and loss of ecosystem function compared with a second product that protects all of these but at a higher energy cost? Not much in my view. Food that is produced in an environmentally sustainable way must be measured by the total impact on the environment, not just energy consumed in production or even worse food miles.

Unfortunately trying to measure the total environmental impact of food production is unbelievably difficult. However, just because such budgets are difficult is no reason to substitute them with a simple but fallacious concept of food miles.

Moving onto the 'Buy British' issue. The fact that food miles is an erroneous concept and it has been adopted by the UK organic movement is a major disappointment. That it has then been linked to a buy British argument is truly harrowing. Here's why: a consumer in the southeast is closer to producers in northern France than Herefordshire. If food miles / transport energy was a real concern then consumers in the southeast should boycott food from the northern UK and buy 'Northern France' instead. The earth only has one boundary that matters; space.

Charles 'Merf' Merfield is an independent organic horticultural scientist and consultant.



ORGANIC INFORM

Information and analysis for the organic economy

The UK organic market is an undoubted success. It is now a £1.6 billion a year business, growing year on year at 30%. But as the market grows, with more players and with longer and more complex supply chains, there is a danger that farmers and growers become isolated and cut off from crucial information flows. A well informed farmer is a successful farmer. The opposite is also true.

Practical help is on the way. Organic Inform is a new initiative funded by Defra and The Organic Research Centre, Elm Farm. As a one-stop-shop its mission is to analyse and add value to the flow of information about organic farming to producers and other interested bodies. It will build on and draw together the dissemination programmes of a range of organisations in the organic sector, especially those projects or initiatives receiving public funding. Organic Inform is hosted and run by The Organic Research Centre but works through a range of partners and collaborators.

“We want Organic Inform to become a community of shared thought and information, the definitive home of practical, useful data to boost the performance of organic producers and to inform their day to day business decisions,” says Organic Inform programme manager, Catherine Phillips.

At the heart of the new venture is a website - www.organicinform.com packed with news, market data and analysis. Producers will also receive a regular newsletter, likely to be paper based, interspersed with more regular e-mails to notify them of updates. Seminars and workshops in conjunction with partners and collaborators, telephone alerts, text messaging and podcasts are to be explored in the future.

“Overall, the strength of the service will lie in its independence and research reliability,” says Catherine Phillips. The focus of research will be on markets; research and development particularly aimed at improving the quality of the production system and the final product; the regulatory environment; policy; political and business structures.

Gift a "Friend" for Christmas

How YOU can help The Organic Research Centre - Elm Farm

Our work at TORC is unique and vital to the future of Organic Farming, but we need ongoing support that will enable us to continue our important research, training and policy work and to demonstrate solutions to seek permanence.

Become a **Friend** of The Organic Research Centre, or **make a friend a Friend!**

In addition to the regular Bulletin, you will also receive newsletters on our activities, free publications, discount on specified events from our Annual Events Programme and many more of our Special Invitation-Only events. Please contact us for a Friends Donation form.

You can make a **Donation** to The Organic Research Centre, or if you have done so in the past, please contact us for a **Gift Aid** form as we can claim back the basic rate tax on your donation, increasing its value by 28%! Please contact us for a gift aid form.

You can donate **Shares** to The Organic Research Centre and significantly reduce your income tax bill as there would be no capital gains tax due on such a donation. This applies to many listed shares and unit and investment trusts.

You could leave a **Legacy** to The Organic Research Centre. By including us in your Will, you are enabling us to continue to develop our work and activities.

As we are a charity, all legacies to us are free from inheritance tax, so your family has less to pay. Please ask us for a legacy leaflet.

For more information on any of the above, please contact Rosie Jordan on 01488 658298 or email rosie.j@efrc.com

Thank you for supporting us.

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