ELM FARM RESEARCH CENTRE

Bulletin

with Technical Updates from The Organic Advisory Service

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ORGANIC INTEGRITY BEING DESTROYED BY DEROGATION

By qualified majority voting, the EU Council of Ministers has extended the derogations to use conventional feed in organic livestock rations. The decision ends an unedifying and shambolic process characterised by the pursuit of national and sectional interests from member states and organic bodies; ignorance and spinelessness by Commission and member state officials; and, above all, an appalling lack of vision and concern for the integrity that consumers expect of organic produce, organic producers and the relationships therein.

Commission and government representatives have played a hesitant and unintelligent part, lacking conviction and commitment to previous agreements that derogations would end; a situation all parties - including accession countries - were aware of and had signed up to. In doing so, they have undermined their own authority and credibility. This will blight their future governance and hinder their effectiveness. Put simply, how can anyone trust them to stick to derogations or anything else? How can any part of the sector plan for the future on such a basis?

But it is the certification bodies and producers' sectional interest groups that are most at fault. EU and government officials looked to them for guidance and in all countries and in EU forums, with some notable exceptions, they have put short-term interests ahead of overall integrity and the wellbeing of organic principles. An incredibly stupid thing to do - as their own interests, and the strength of the market, are based on that wellbeing. In doing so they have shamelessly reneged on the commitments made to organic consumers that these derogations were temporary and that conventional feed would be urgently phased out.

Those few consumers who knew - most organic consumers are unaware that significant amounts of conventional feed is fed routinely and on an ongoing basis to organic livestock - would feel appalled and cheated to discover it.

There is a growing blasé-ness, bordering on arrogance, within parts of the organic sector about the relationship with the consumer. Inputs and techniques that no one would associate or expect to find in organic production are becoming commonplace; every one of them mining away the bedrock of integrity. cont. p2

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It seems to have been forgotten that the consumer's trust of organic produce is not ultimately based on regulation, certification and inspection but the perception that organic farming requires a commitment from organic producers; that organic farming is demanding and long-term; that a conversion period is gone through where the farm is restructured so that quick fix inputs can be avoided; that if a farmer goes through the difficulty of the conversion process he will not be prone to shortcuts, deviation and marketing deceit; that he can be trusted to be open and fair and true to the perception.

All derogations put that trust at risk but extending this one is worse because it cannot be justified. First of all, we have all known about it for a long time and have had ample opportunity to find solutions; secondly, many farmers and feed manufacturers in many countries have found solutions, often through investment in new structures and systems, and have now been badly let down; thirdly, current R&D has clearly demonstrated that there is no insurmountable technical obstacle to 100% organic rations in any livestock category - including the issue of amino acids in non-ruminants; and fourthly, it is clear from the experience of those farmers using full organic rations that supply issues are solved when demand starts.

The arguments for extending the derogations relate to structural issues at regional and, in some cases, at farm level and had some validity in the past but are now well past their ‘sell by’ date. One relates to the EU accession countries and says that these "new" countries have not had time to develop their organic production to meet the regulation. Tough! They joined the EU to have ready access to the market; well there is a membership fee, which is coming up to speed to regulatory requirements, not expecting the existing members to slow down development.

Another argument relates to production patterns in various countries; for example, it seems that Belgium and the Netherlands cannot produce enough home grown protein to feed their non-ruminants, Spain also has a home- grown feed deficit. But isn't that what the single market trade is in place to facilitate? They send us vegetables and we send them livestock or livestock feed; or they can restructure and grow less for export and more for home consumption. In any case, they have had plenty of time to sort this out.

The final argument relates to some farming systems, notably high volume output dairy farms and poultry producers. I have received some below-average-quality abuse from representatives of these types of systems since questioning the need for extending the derogations. I shall "abuse back" in due course but for now will point out that many of these farms are essentially neo-conventional, not fully converted and functioning organic farms, even though they have been certified. Part of the conversion process is, or should be, restructuring the farming operation to the constraints that are inherent in the organic systems. Everyone recognises the constraints set by the avoidance of agro-chemicals but the constraints set by an integrated organic feeding regime are often ignored.

High input and high volume output systems of any kind but particularly livestock are very problematic organically. In general they only work where derogations, poor inspection or lax certification policies allow the use of conventional inputs - feed, antibiotics, anthelmintics, or in vegetables copper sprays - routinely or at a level that would be unacceptable to the consumer if they knew about them. In recent years these types of farms have been certified in the hope that they will move towards a more balanced organic system. Yet this rarely happens and this neo-conventional approach and all the certified deceit that goes with it should be driven out of the organic sector, not used as a justification to extend derogations.

But they have been extended, so what next?

There are two points to note about the derogation. Firstly, how sloppy and irrational it is; for herbivores, 5% conventional feed is allowed until December 2007: For other species 15% to December 2007, 10% to December 2009, 5% to December 2011. Why? What is going to change to make the magic 5% of presumably protein become available by 2007? What magic wand works during that year but is incapable of stirring itself to action during 2006? What is this protein that is not available now anyway? If you can't get it in Spain this year why is it suddenly going to metamorphose in 2007? And why is the magic wand taking so long to deal with pigs and poultry rations? 6 years in total at 5% a time, what magic substance comes on line in such a regularly incremental way?

The second point is the most important and is that farmers have to show "that they are unable to obtain feed exclusively from organic production" in order to use conventional feed. How Defra implements this is now critically important to the credibility of organic production. 100% organic rations can be available today for all classes of livestock in the UK. Of course there are qualifications; it may be more costly but not always and in some circumstances will change production patterns.

Availability of volume will be problematic initially, especially if demand is patchy due to inconsistent application of the regulation.

Having been party to a sloppy and irrational derogation, it is incumbent on Defra to ensure that its implementation is transparent, honest and serves the interests of the consumer and the sector as a whole and not just the certification bodies and the neo-conventional loudmouths. In fact, Defra has to ensure that the organic sector fulfils its commitment to the consumer by driving the sector as fast as possible to full organic rations and that means before 2007 and 2011.

Lawrence Woodward

FAO leaves Organic Agriculture and Food Security to Biotech and a "Greek Goddess"!

The Executive Council, of the Food and Agriculture Organization of the United Nations (FAO) has been considering the FAO's Program of Work and Budget for 2006-2007. The "heart" of the FAO's mandate is "achieving food security for all."

Organic agriculture provides substantive, measurable and tangible benefits towards achieving this mandate, but is barely mentioned in the $850 million program budget. Agricultural biotechnology, on the other hand, whose claimed contribution to food security is highly controversial and subject to debate, has been allocated over $6 million in one budget line alone, as well as budgeted to receive FAO support under other programs.

The International Federation of Organic Agriculture Movements (IFOAM) has called on the FAO Council to rectify this situation by specifically allocating at least 2% of the program budget - roughly $17 million - to research and support for the development of organic agriculture, particularly in developing countries, thereby reflecting the percentage of organic agriculture as a portion of agricultural practices worldwide.

One glimmer of good news is that organic agriculture is included as a Priority Area for Interdisciplinary Action - whatever that means: hopefully not another forum for conventional academics and policy makers to pontificate on how organic farming would be a better option if some chemicals and a little bit of GM was allowed. Its acronym is PAIA which sounds like a Greek goddess. One hopes there is a sister called PAI-OUT, and that she'll turn up sometime.

Organic Farming Pays in Asia!

Some good news - but with a sting in the tail - we picked up from the World Watch organisation.

One reason that organic farming is expanding rapidly in Asia, according to a new study from the United Nations affiliated International Fund for Agricultural Development, (IFAD), is because organic farmers can make more money.

The study reports that the value of organic exports from China, which has more than 1000 certified organic farms and companies, grew from under $1m in the mid 1990s to $142m in 2003. In India, 2.5m hectares are under organic production.

The study's findings support those from one 2001 study of six Latin American countries.
This also showed that farming organically yields better earnings and higher standards of living. They also note farmers turning to organic methods because it eliminates the need for, and cost of, expensive pesticides, insecticides and synthetic fertilizers - and also reduces the health and environmental burdens imposed by these. Being more labour intensive, organic methods also offer higher employment.

The down side - those benefiting from the increase in organic production are those already producing for export and not those concerned with domestic consumption and food security.

Bulletin 78 Erratum

In the last issue of the *Bulletin* the letter from Hugh van Cutsem "Food Miles" page 3 contained an error on our part. The sentence in the penultimate paragraph should have read 'in excess of **1,000** miles' and not 10,000 miles as was stated. We apologise for this mistake.

Why are some organic foods imported to the UK in preference to UK sourcing?

New research study for Defra : Defra Research Project - OF0349

The Organic Action Plan for England has a key target to increase the proportion of UK sourced organic food. A significant proportion of organic food that could be produced in this country is imported, the most recent survey for the England Organic Action Plan by BRC shows that in 2004 organic products such as beef, pork, brassicas (broccoli, cabbage, cauliflower) and potatoes are all imported to a far greater extent (only half is UK origin) than is the case for the same products conventionally produced (where almost all is UK origin).

Christopher Stopes of EcoS Consultancy is leading a study commissioned by Defra working with Elm Farm Research Centre and Helen Browning of Eastbrook Farm.

This new study will build on earlier work on increasing the proportion of UK supply of key organic foods completed by EcoS Consultancy with the Organic Action Plan Retail Sub-group and the British Retail Consortium (BRC). This identified best practice amongst UK supermarkets to sourcing UK organic food; reviewed the opportunities and threats in supermarket organic supply chains; proposed key organic products where there appeared to be scope for increasing the proportion of UK supply; and proposed strategic objectives relevant to government, suppliers and supermarkets.

The aim of the new research is to analyse four organic products (pork, beef, potatoes and brassicas - all identified as priorities in the earlier report and highlighted in the BRC survey), where there are imports to the UK, and where UK production would be expected to be possible. Specific recommendations for policy (government and commercial) arising from the study will be proposed.

The research team will work with key stakeholders including the BRC, organic suppliers, retailers and producers and will draw upon study visits to countries producing the four organic products for import to the UK. It will also assess how and why imports can be an important part of the UK organic food supply chain.

The study objectives are: **1)** Define why and the conditions under which imported organic products (pork, beef, potatoes and brassicas) are selected instead of domestic product available in the UK; **2)** evaluate differences between countries (e.g. organic standards implementation, cost of organic production, supply chain and marketing routes); **3)** identify why key production and buying decisions are made; **4)** identify blocks in UK organic systems (e.g. investment, production, standards, certification); **5)** specify conditions necessary for more UK supply; **6)** make recommendations for government and other stakeholders.

It is expected that the research will contribute to increasing the supply of UK produced organic food through defining the opportunity for policy measures and other approaches to be considered by government and all other stakeholders to encourage more UK production of key organic primary products that are imported. We hope that retailers and their suppliers, as well as producers in the UK will be in a better position to overcome obstacles to UK production, hence contributing to the achievement of one of the key Organic Action Plan objectives - that of increasing the proportion of UK supply of key organic products.

For further information please contact
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AGRICULTURE'S PINBALL WIZARDS

Apparently, Chris Pollock, - the renowned Director of IGER (the Institute for Grassland and Environmental Research, pillar of the agricultural research establishment, future knight of the realm for services to pragmatic realism in all agricultural matters, oft -time critic of organic farming and latterly chairman of the committee overseeing the Farm Scale Evaluation (FSE) trials which compared the impact of GM and conventional crops on the environment - admitted at the launch of FSE Trials report;" If we knew before we introduced modern methods what it was going to do to our environment and countryside, we might have done things differently."

Of course many people did have a pretty good idea but they encountered deaf ears, they were ignored and their fears dismissed as unscientific. These two highly significant features of the FSE trials - how damaging conventional methods have actually been; and the failure of the "scientific" method, peer review process and policy review to foresee and prevent such damage - have been ignored in the months since. Not a word has been uttered on these matters.

There have however been statements about the need to carry on developing GM crops; an ominous or even cavalier silence on co-existence; ambivalent proposals about the use of vaccines in future FMD outbreaks; a determination to allow GM contamination of seeds. In fact, plenty of signs indicating that nothing has been learnt by agriculture's science and policy establishment.

Despite Chris Pollock's alarm call they still seem to be "deaf, dumb and blind" and they probably don't play pinball!

The Obesity Ecosystem

One important contribution of Eve Balfour to the philosophy behind organic agriculture was the concept that agriculture needs to be considered as the primary health care system. But she took this idea further than the currently popular, 'you are what you eat', to take in the whole of the agricultural ecosystem. In other words, if we are to produce healthy humans from the agricultural ecosystem, we have to care for the health of all of the elements that interact together within the system. Eve Balfour boiled this down into the handy mantra, 'healthy soil, healthy plants, healthy animals, healthy humans' (it could also have included healthy air and water). This has an attractive common-sense ring about it - if we fail to be 'healthy' at any one of these points, then we are unable to achieve a healthy output at the end.

However, the concept begs many questions, the most important of which is the meaning, and aim, of 'healthy' at each of the points in the system. At a common sense level, we know, for example, that if we establish an excellent organic rotation on a particular farm to protect the soil and increase its biological activity, this will help significantly to provide on the one hand first class forage and, on the other a prime basis for arable cropping.

Conversely, we are all familiar with practices that lead to poor health - for example, soil compaction and water-logging being negative in terms of soil function and leading to sick plants and animals. Nevertheless, we still do not know comprehensively what is needed to provide for healthy humans (who vary considerably from one to another) or indeed for healthy soil, plants or animals that are also highly variable.

Another fundamentally important point about the 'healthy soil….humans' mantra is that, because of the form of the words and their order, it is probably interpreted as a linear argument. In other words, to produce healthy humans we have to start with healthy soil and work our way upwards. However, we are discussing here an ecosystem and the essential point about ecosystems is that the different components interact and feed back on one another. It is clear, for example, that unhealthy animals will have a negative impact on both soil and humans - and so on. Following this argument, it is then difficult to see a starting-point for the ecosystem. This is not surprising since there isn't one - all of the components need to be maintained simultaneously in a healthy state.

This brings me to the point about obesity.

There is huge concern world-wide about the current obesity epidemic in humans, which apart from the distress caused, is going to be extremely expensive in terms of health services and global climate change (even the extra cost of flying the population of overweight people is significant). Most of the current discussion about dealing with the problem centres on the question of diet alone - avoidance of junk food, salt, sugary drinks etc.

Interestingly, however, Michael Crawford, the eminent evolutionary nutritionist, pointed out that farm animals in modern farming systems are also obese, though not necessarily recognised as such. They tend to be fed with high input rations from grain to worse, often with no access to their natural, outdoor, diet. As a consequence, the fat to protein ratio in modern farm animals is higher now than at any time previously, and the amounts of omega 3 fats and of particular vitamins, are at much lower ratios than before. So Crawford's base point is that obesity is not just a question of human diet, but that obese animals help to lead to obese humans.

But what about the rest of the ecosystem? Depending on the way in which we use the term obese (continuous luxurious uptake to protect against crises that never come?), we need to think of the whole system currently as being obese - obese soil, obese plants, obese animals, obese humans. However, compared with humans, it is more difficult to think of soil, plants and animals as being obese.

One way is to look at the current situation in evolutionary terms. Over the last two to three hundred thousand years, there has been steady evolutionary change among soil-borne organisms, plants, animals and humans in a range of ecosystems whose components were continuously interacting. In the last few decades, all of the components have been removed from those naturally evolving ecosystems. Now what we have are plants and animals that have been bred for totally different agricultural ecosystems, involving massive inputs designed to deliver massive yields.

So, in fact, we may say that the soil is obese because it is being continually fed with large amounts of nitrogen fertiliser and other nutrients, water and pesticides, which means that biological activity in the soil is often restricted, with potential negative consequences for the rest of the cycle.

The plants that grow on such soils receive too much soluble nitrogen so that pathogens and pests can run riot

while individual plants may have less essential minerals than they would previously have absorbed. Animals are then fed to a large extent on grain from such plants, with the consequences highlighted by Michael Crawford. Many of the negative effects are suppressed by the application of pesticides, medicines and other synthetic materials, which can have further consequences, often negative.

Certainly, diet does have a role in solving the human obesity epidemic. But if we want to find a comprehensive solution, including an effective diet, we need to consider the whole obesity ecosystem and the interactions among the many different components involved. And this should not exclude the point that the obesity ecosystem as a whole needs an immense amount of fossil energy to keep itself going.

I should stress that this view is not intended as yet another swipe at conventional agriculture. Current organic agriculture has no room for complacency, particularly while policy and the market-place press for increases in productivity. As ever, it seems, we are up against the twin increases in human population size and aspirations - and both of these need to be changed.

Prof. Martin Wolfe

Careful and Stress-Free Slaughter of our Agricultural Livestock

We thank Karl Ludwig Schweisfurth of Hermansdorfer Lanwerkstatten, Germany for this contribution.

Slaughter of cattle kept in herds of extensive grazing systems and not used to direct human contact, by shooting in the field, is incompatible with the EC regulations and the animal welfare laws. There appears to be some movement in public opinion on this matter with people starting to question where meat, which we consume daily, comes from. There is also more coverage now of species-appropriate husbandry and stress-free slaughtering of farm animals. The system of slaughtering animals in huge technical "killing machines " is no longer acceptable.

We inhabit our planet earth together with the animals. Worldwide, each and every person depends on three types of domestic animal for his or her own survival. Milk, eggs and especially meat are indispensable as well as skins, feathers, etc., etc. We eat our domestic animals, we kill them and spend little time thinking about what we do and how we do it.

Ethics dictate to us to ponder and search for solutions when it comes to making the final journey of our domestic livestock as free from panic, fear and stress as possible. This applies to the entire process starting with separating the animals from the herd in their familiar surroundings, loading upon a truck, the kind and direction of transport, unloading at the slaughterhouse, keeping in pens and finally everything leading up to the final shot as well as the way the shot is place.

German Animal Protection Law declares animals as fellow creatures who are to be kept from unnecessary pain or harm. A person attentively watching animals before slaughtering, notices and feels the panic and fear that befalls animals whenever they are taken from their familiar surroundings. We do not know if animals sense death approaching, but we do know that often they seem to be in the grip of fear, they act 'crazy', crack up, which gives us the impression that they are mean and aggressive.

Rationale dictates the need for a different, more caring approach and the search for better and more suitable solutions for animals, especially as we taste the animals' fear and stress in the form of adrenaline and other substances in the meat. A stressed and negligently stunned animal bleeds dry less well, leaving up to 15% of blood in the tissues which negatively impacts on shelf life, taste and enjoyment values. Nowadays, science has been able to confirm many of these influences.

In Judaism and Islam, much thought has been devoted to how to deal with "the tragedy of slaughter". The act of killing was placed into the hands of a "spiritual leader", a Rabbi or a Mullah who was bound by exact rules in order to make killing as bearable as possible for animals and humans.

In the countries of the Christian Occident, there were no rules or directions. Killing, devoid of any religious reference, was left to farmers and butchers. Nowadays, technicians and hygienists determine the proceedings and sequences. Bowing to pressure from Western competitive economies, the laws of economics rule supreme; efficient and quick, the work done on conveyor belts and preferably by robots, not human workers. In this system, sensitivity and a feeling for the animals' distress and fear are not taken into account.

Review of Birds and Moths at Sheepdrove Organic Farm during 2004

As part of the ongoing environmental monitoring programme undertaken by EFRC (Elm Farm Research Centre) at SOF (Sheepdrove Organic Farm) surveys of the species of birds and moths present at SOF were carried out in 2004.This article presents a summary of the findings from those surveys.

The aims of the surveys were to establish a benchmark record of species present at SOF for comparison with data from future years samplings and with other downland habitats.

The **moth survey** was undertaken using a Robinson Trap on three separate occasions, at three sites within SOF that represent a range of habitats. Summary of the findings:

- A total of 40 moths were identified to either genus or species level.
- A strong variation between the 3 different sites, both in terms of abundance and diversity of moths.
- Species number and diversity seems to be strongly influenced by nearby habitat, and nectar sources would be a very important part of that.
- Seasonal change was observed in the species composition of samples, such as with White Ermine was prominent in May-June, with the Flounced Rustic becoming prominent in August, and Beaded Chestnut in October.
- Beaded Chestnut had the largest numbers recorded (36), closely followed by Flounced Rustic (35).
- The highest diversity in any one sample was 34 moth species in June 2004.
- Numbers of moths caught ranged from as many as 237 in June down to 2 moths in October.

The **bird survey** was carried out by RSPB volunteers using the Common Bird Census (CBC) sampling method. The selected survey plot covered a total area of 94.10 hectares. (232.4 acres), sampling was undertaken on four occasions, April, May, June and July.

The survey recorded 46 species of birds, out of 97 known species at SOF. More than half these birds were listed as 'Birds of Conservation Concern'. There were 9 UK national Red List (threatened) species and 16 Amber List (vulnerable).

The following Red List species were recorded during all four sampling occasions, the:

- Corn Bunting (Red List) was observed singly, in pairs and in groups across a wide area of the study zone, most often at field edges.
- Linnet (Red List) was widespread over the survey area. It was observed both singly, in pairs and groups.
- Reed Bunting (Red List) was usually seen singly, but a group of 4 was recorded. This species was mainly seen in young broadleaf woodland plantation habitat with rough grass, but was also observed in a spring wheat field.
- Skylark (Red List) was wide spread over the study area and was frequently recorded singing, although birds on the ground were less likely to be seen.
- Yellow hammer (Red List) was usually seen near boundaries, and tree plantations. It was often heard singing, but where it was recorded was limited compared to other species.

Red List Species that were also recorded:

- Song Thrush (Red List) which was only recorded during the June survey, and only on grazed ley.
- Starling (Red List) was observed during 3 out of 4 survey sessions, singly and in groups. They were recorded towards the edge of fields, in both grazed ley and cereal fields.

Amber List Species observed included the:

- Lapwing (Amber List) was recorded on 3 out of the 4 survey visits.
- Grey Partridge (Red List) was recorded during the May and June visits.
- On 10th April a flock of 120 amber listed winter migrant Fieldfare was recorded.

These results are encouraging for SOF's approach to managing positively for biodiversity. Our samples include species that benefit from the range of habitats being conserved and created and show an excellent variety of species in both cropped and uncropped areas of the farm including areas of woodland and the compost site.

This demonstrates that SOF as a whole acts as a refuge for birds in a time where farmland bird numbers are declining. As farming practices change and develop at SOF it is important that these surveys are continued to ensure the continued positive relationship between SOF and the environment.

Claire Aspray
Researcher EFRC

Cereal Mycotoxins - Risks, Regulations and Resolutions

Head blight of wheat and barley is a disease complex caused by the pathogenic genus *Fusarium*. The disease is diagnosed by the discolouration and shrinkage of grains in large sections of the cereal ear. The disease can have a significant effect on yield, but it is the change in grain quality following *Fusarium* infection which is of paramount importance.

The relative severity of *Fusarium* infection in the ear is dictated by the production of a range of virulence factors by the fungus. The existence of these factors determines the severity of cereal disease. However, they also act as mycotoxins which have potentially serious health risks in mammalian systems. Concerns for human health for the level of mycotoxins in cereal were raised in the Netherlands in 1999 following an assessment of the level of the mycotoxins deoxynivalenol (DON) in baby food. The subsequent accumulation of Europe-wide data for the acceptable levels of mycotoxins in food (stated as the 'tolerable daily intake') has led to the EU Commission producing legislation for the legal maximum levels of mycotoxins in unprocessed and processed cereal based foods; the first set will take effect from July 2006 for DON and zealerone (ZEA).

In the UK the ear blight complex is caused by a mixture of *Fusarium avenaceum, F. culmorum, F. graminearum, F. poae, F. langstheciae*, and *Microdochium nivale*; all species are toxin producers with the exception of *M. nivale*. The range of mycotoxins that are produced in the disease complex include DON, and ZEA, nivalenol (T-2 and HT-2), and monilidormin, with DON being the predominant toxin. An extensive study, carried out by Harper Adams, of mycotoxin levels in grain sampled from more than 300 organic and conventional farms each year, from 2001 - 2003, revealed that an average of 2% of sites exceeded the recommended DON level (from the Food Standards Agency guidelines). There was no significant difference in the level of mycotoxins from organic or conventionally grown grain.

Research at Harper Adams has confirmed a range of agronomic conditions which affect the level of infection, including the method of cultivation, the previous crop, and cereal variety, in addition to climatic factors. The highest incidence of infection was found to result when the previous year's crop was maize (the greatest source of Fusarium inoculum) and drilling took place under minimum tillage. Nevertheless, the weather has been found to have the greatest effect on mycotoxins load; toxin levels were relatively high in 2004 as a result of the wet summer. A visual assessment of the incidence of *Fusarium* in the grain provided a reliable guide to mycotoxins level; 3 infected (shrivelled, 'chalky' or pink) grains per 1000 indicated the toxin limit for unprocessed cereals on the market for first stage processing. Alternatively, portable testing kits can be used for the same purpose.

A number of measures to manage Fusarium disease control have been specified by NABIM:

- Do not follow maize with cereal;
- Plough in crop residues;
- Optimise storage conditions;
- Avoid irrigation during anthesis and ripening;
- Dry grain immediately after harvest (15% moisture level); and
- Grow Fusarium resistant varieties.

Crop characteristics that are important for reduced risk of *Fusarium* infection include a long straw that reduces the incidence of ear contamination from rain splash, a lax-ear characteristic that provides a less suitable micro-climate for *Fusarium* growth, varieties with a good standing power, the existence of awns, and anther extrusion. *Fusarium* infection takes place principally at anthesis, hence varieties that flower into the boot can avoid the period at greatest risk from infection. Sources of *Fusarium* resistance have been identified in a range of spring wheat varieties from the Far East, in Brazilian spring wheat varieties, in Eastern European winter wheat varieties and in some land races and old varieties. Work carried out by the EU funded project Fucomyr, involving the isolation and classification of genes involved in fusarium ear blight (FHB) resistance has indicated that most UK wheat varieties are moderately or highly susceptible to FHB. Varieties that did have some resistance were Tambor, Nirvana, Petrus, Centrum, Piko, Soissons, Renan, Romanus and Spark. Nevertheless, there is a high level of interaction between genes and the environment, and the genetic basis of resistance in some varieties remains unknown.

Set-aside has been associated with an increased risk from *Fusarium* infection. In addition, there are concerns that contamination may increase from the greater area of field margins now in existence, as a result of changes to rotations and the use of minimum tillage from the introduction of single farm payments, and Environmental Stewardship Schemes. These potential risks are complementary to work being carried out on the Ergot LINK project (IGER-led Defra funded) where EFRC will be sampling grasses from field margins which will be assessed for the relative incidence of ergot, and

whether field margins significantly influence the level of infection.

Within the cereal supply chain it is recognised that most mycotoxins contamination of grain comes from the field, and from poor storage conditions in farm silos, that rely solely on the ambient air flow to effect drying. Rank Hovis have created a supply chain network in association with the Food Standards Agency to permit traceability within the system; grain imported from the US and Canada already guarantee grain is of the required standard (with regard to mycotoxins) and a similar system is likely to be introduced in the UK. Although the level of mycotoxins can be defined for unprocessed grain, their relative fate is unknown in the various methods of processing; guidelines need to be set ultimately for the equivalent permissible levels of toxin in the grain prior to, for example, cleaning, baking and malting.

In summary, mycotoxins can result in serious health risks, with perhaps aflatoxins in peanuts the most notorious. The management of Fusarium head blight in cereals and the concomitant concern for mycotoxin contamination require a multi-faceted approach through superior crop husbandry, management and cereal storage. Further research is required within the supply chain to connect the risk of mycotoxins in unprocessed cereals to toxin levels in animal and human foodstuffs, to result in legislation that is both realistic for the grower, while protecting the consumer.

Dr Hannah Jones
Senior Researcher - Crops Programme EFRC

Soil Association presses government on poultry standards - July 6, 2005

The Soil Association has called on the new minister for organic food and farming, Lord Bach, to support high welfare standards in organic poultry farming -- pointing out the soaring consumer demand in recent months for chicken and eggs produced to higher standards than the Government's organic 'baseline'.

At a meeting with the minister the Soil Association set out to contrast the welfare expectations of organic shoppers with the Government's decision last year to allow big egg and chicken producers to call their products organic even though they can be kept in flocks of as many as 9,000 birds. The Soil Association believes that no chicken or eggs are produced to higher standards than those with the Soil Association symbol.

The Soil Association also presented Lord Bach with hundreds of letters from organic consumers supporting high welfare standards and asked him to back consumers' commitment, which has driven a dramatic rise in sales of Soil Association certified eggs.

Shortages of Soil Association eggs have led one of the UK's leading egg producers, Stonegate, (suppliers to Waitrose) to call for more farmers to start producing eggs to Soil Association standards. Sales of Columbian Blacktail organic eggs at Waitrose stores are growing by almost 25% a year.

Sainsbury's Yorkshire stores have also seen an unprecedented rise in sales. The Yorkshire branches, which are the only stockists of Soil Association certified eggs within the chain, have seen sales jump by over 50% in the last six months.

The Soil Association has published its new poultry leaflet, which aims to inform organic consumers about animal welfare standards.

To download a copy visit
www.soilassociation.org/chickens

Abattoir Accreditation

An accreditation scheme has been launched to help medium-sized and small abattoirs and processors meet the growing demand for assured specialty products. Called the Abattoir and Processor Standard, the scheme has been developed by Assured British Meats in conjunction with the Association of Independent Meat Suppliers.

The new scheme will offer abattoirs and cutting plants a new route to exploit new business opportunities. It will also enable them to serve the increasing number of sectors that require UKAS accreditation. A £116,000 DEFRA grant over three years will help with the scheme's accreditation costs. Mr. Bagley estimated net costs for members to be £500-700 a year. (Source: Farmers Weekly Interactive 6/5/05)

Casting pearls before swine: Pig rations and the contribution of silage.

With much discussion within the organic farming community as to what the likely implications of the removal of the conventional allowance from organic livestock rations might mean. Many farmers are considering what might be grown on their own farm to be able to produce appropriate rations for pigs. So it is inevitable that questions are being raised about the value of feeding silage to pigs.

The organic system requires an integrated whole-farm approach to food production that considers economic and environmental sustainability as well as animal health and welfare issues. The objective of the organic pig system is to produce piglets from breeding animals and meat from those piglets. Currently between 70-80% of the cost of production is due to feed. Therefore it is of great importance that correct diets and raw materials are chosen for the pig enterprise to be successful. However there is currently little good data specifically collected on organic pig nutrition, the most comprehensive study was complied from the DEFRA funded study 'Optimising Organic Pig Production' and saw the production of a handbook of raw materials and recommendations for feeding organic pigs produced by University of Newcastle

Pigs are mono-gastric and lack the advantages of rumen fermentation enjoyed by cattle and sheep. However, as omnivores, pigs can deal with a wide range of feedstuffs. All pigs must have access to pasture or open air exercise areas. The final fattening stage for organic pigs may take place indoors provided that the period does not exceed one-fifth of their lifetime and the maximum period is three months.

So can pigs eat silage?

Pigs have differing nutritional requirements dependent upon their stage of life. For dry sows and boars the primary feeding objective is to maintain an ideal body condition. For lactating sows there is a high nutrient demand and this various according to stage of lactation and season, but she needs to be fed a high quality to maintain condition. Piglets cannot been weaned for 6 weeks and for the first 2-3 weeks piglets will have their nutritional needs meet entirely by suckering, during the weaning process piglets need high quality feed until completely weaned then the feed requirements can be reduced. Fattening pigs have increased appetite but require a lower protein to energy ratio. Further details of dietary requirements for different age classes of pigs are given in table 1. In comparison the typical nutrient composition of a range of silages are given in table 2.

	Dry Sows & boars	Lactating sows	Suckling & newly weaned piglets	Growing pigs	Finishing pigs
Digestible energy (MJ/kg)	12.0 -13.0	13.5-14.0	14.0	13.5	12.5-13.0
Crude Protein (%)	13-14	17-18	20	18	16-17
Lysine (%)	0.5-0.6	0.9-1.0	1.2	1.1	0.8-1.0
Methionine + Cysteine (%)	0.3	0.5	0.7	0.65	0.4-0.6
Threonine (%)	0.4	0.6	0.8	0.75	0.5-0.7
Calcium (%)	0.8	0.9	0.8	0.8	0.7
Phosphorus (%)	0.6	0.7	0.6	0.6	0.5
Sodium (%)	0.15	0.15	0.15	0.15	0.15

Table 1: Recommended minimum nutrient levels in compound diets for organic pigs (Expressed on a meal equivalent basis of 86% DM)

	Fresh Grass/ Clover	Grass/ Clover Silage	Lucerne	Whole Crop	Maize
Dry Matter (%)	23.0 to 26.0	35.0	35.0	40.0	30.0
Digestible energy (MJ/kg)	2.9 to 1.9	3.2	3.0	5.8	3.4
Crude fibre (%)	4.9	10.0	1.05	9.3	5.4
Crude Protein (%)	5.5	6.0	6.8	3.9	2.4
Lysine (%)	0.20	0.28	0.28	0.14	0.06
Methionine + Cysteine (%)	0.10	0.14	0.16	0.15	0.07
Threonine (%)	0.19	0.27	0.25	0.13	0.06
Calcium (%)	0.25	0.35	0.52	0.08	0.06
Phosphorus (%)	0.09	0.13	0.10	0.10	0.06
Sodium (%)	0.06	0.09	0.01	0.01	0.06

Table 2: Typical nutrient composition of fresh and ensiled forages.

From Feeding Organic Pigs 2002

Good quality grass-clover silage can meet approximately 20 to 25% of energy requirements for all classes of pigs. Just under 50 % of energy requirements can be meet through whole crop silage.

In the order of 25 to 30 % of the pig's protein requirements can be met from a good quality grass clover silage. Approximately 25 % of the amino acid requirements are supplied from good quality silages.

Whilst approximately 25% of the pigs nutritional requirements might be able to be provided from high quality silages, it is still dependent on the pigs consuming the silage on offer rather than using it for bedding.

Conclusions

- Silage composition is variable and it is strongly recommended that feeding value is analysed (Gill Pers comms)
- Silage is a good source of energy for pregnant sows and can make up 25-50 % of the daily energy requirement (Gill Pers comms)
- Silage provides a greater gut fill than other diets (Gill Pers comms)
- Silage needs to be limited to avoid excessive weight gain in pregnant sows (Gill Pers comms)
- Silage intake for lactating sows is very variable ranging from 7 to 141 kg per sow. (Kongsted Pers comms)
- Silage is not suitable for growing pigs particularly if it has a low protein content and low protein availability. (Gill Pers comms)
- Silage can contribute in low amounts to the total energy requirements of growing pigs up to 5% of the total energy intake. (Kongsted Pers comms)

Lois Philipps, Senior Researcher

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Personal Communications
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"Redefining quality" and wondering just what is organic!

Roger Hitchings reports from a Soil Association Horticultural Symposium.

The **Horticultural Symposium held at Ryton Gardens on June 7th** was certainly successful in terms of attracting a large number of participants including many growers both old and new. Events such as this just do not have much in the way of relevance or meaning unless the practitioners are there to give their various points of view and hopefully take something away in the form of new knowledge, new techniques or contact details of potential colleagues, suppliers, etc. I think, on balance, that this happened but because of the multiple workshops I cannot comment personally on all the topics that were covered on the day.

The theme of the day was **Redefining Quality** - most of the speakers had a crack at providing a definition of quality and the fact that they were all different merely proves how difficult a concept this is to pin down. Does it really matter? It certainly provided a useful hook on which to hang the various topics of the workshops. The initial plenary presentations did not cast much light on the issue of quality but did at least set out the stall for the more substantive workshop topics. We got to see the new Minister for organics and horticulture, Lord Bach of Lutterworth, who did his best to play a straight bat given that he was only 30 days into the job at the time.

Compost for quality soils

The Composting workshop was well attended and this is definitely a topic for our times. The standards have always referred to the use of composted manures and wastes as desirable when produced on farm and essential when imported. Many producers have done their best but limited equipment and a lack of appropriate areas have tended to limit the effectiveness of on-farm composting processes. The fact that six months stacking of manures and wastes without turning is deemed the equivalent of composting is a telling comment on the inadequacy of on-farm systems in the past.

Times are changing and a considerable amount of development has taken place driven partly by increasing regulation but mainly by a recognition that fully composted organic matter can contribute benefits to an organic production system beyond the mere delivery of plant nutrients in a balanced and slow release form. Agreement is not universal on the precise nature of these

benefits and there are also ongoing debates about particular systems, the use of bacterial starter cultures and the efficacy of various turning methods.

A major development in recent years has been the increased focus on so-called **green waste compost**. The composting of garden, landscaping and park waste has been around for some time but early development was seen as being ad hoc and the end product was viewed with some suspicion particularly by the conventional ornamental sector. The processing of such wastes can clearly make a significant contribution to recycling and the reduction of material sent to land fill.

In recent years a numbers of initiatives have been put in place to develop the consistency of the finished product and to promote its use across the horticultural industry. The **Waste and Resources Action Programme (WRAP)** was set up (and funded) by Defra and the devolved administrations with a national remit to develop national specifications and to increase the sale and usage of quality composted products. The standards now exist as BSI PAS100 and most major composters are already working to this standard. WRAP also focuses on the development of infrastructure, ongoing research and development, and market development.

WRAP is keen to promote the benefits and use of good quality green waste compost to the organic sector and for a number of producers they are pushing at an open door. Green waste compost is being used in major protected cropping enterprises, by a major salad leaf producer as a weed suppressing mulch, and by many open field growers as source of organic matter and fertility. Other producers still have reservations - green waste compost can supply useful amounts of phosphorus and readily available potassium but its nitrogen component is fairly tightly bound and is quite slow release. There are also ongoing concerns about contaminants - these can be physical (plastic, glass, etc.), chemical (heavy metals, phytotoxins, etc.) or biological (pathogenic micro-organisms, etc.) The PAS 100 standard addresses all these concerns and there has been a marked improvement in quality over recent years. The WRAP helpline is 0808 100 2040.

Other presentations on the day included one from Dr Ralph Noble from Warwick HRI on the **disease suppression properties of composts**. He first reviewed the potential feedstocks for composting and while green wastes account for over 50% of potential material, significant contributions could come from waste vegetables and potatoes (though much of this can go as animal feed), pack house wastes and spent mushroom compost. It is important to ensure that composts are themselves free of potentially harmful diseases before evaluating their benefits in suppressing disease.

Dr Noble and his team have demonstrated that the maintaining of compost at a temperature of 60^{o}C. for a period of 7 days will eliminate a wide range of economically significant plant diseases including brassica clubroot, onion white rot, tomato root rot and many others. Virus diseases are less susceptible - Tobacco Mosaic Virus required temperatures of over 80^{o}C. for a longer period than 7 days. The use of a range of bulky soil amendments that included green waste compost, spent mushroom compost and composted onion waste have been examined. Significant disease suppression effects have been recorded for tomato root rot (Phytophthora nicotianae). For P. nicotianae all amendments showed an effect but the green waste composts had the greatest effect. For clubroot (Plasmoiophora brassicae) both green waste compost and spent mushroom compost virtually eliminated the disease risk but it required amendment levels of 30%.

The use of composted onion waste has been found to be particularly effective in the control of onion white rot (Sclerotium cepivorum). It is thought that particular sulphur containing compounds are responsible for encouraging the resting sclerotia in the soil to 'germinate' and then to die in the absence of a host plant. Amendment rates are again high at 25% and the effect has been enhanced by the addition of a known biological control agent (BCA) to the mix - this is Trichoderma viride. Much of this work need to be scaled up to commercial areas and the amounts of compost used could fall foul of both the organic standards and Nitrate Vulnerable Zone (NVZ) rules.

Two growers gave presentations on how they use and value green waste compost. One brings in finished compost from a local supplier while the other imports the raw material and composts it on-site. Both also compost their own on-farm wastes. In general, benefits have been seen in improved soil structure allowing easier cultivation and seedbed creation, improved soil fertility leading to faster crop establishment and higher yields, and improved crop quality in terms of appearance, pest/disease incidence, storage characteristics and flavour.

Growing for quality

This was a session that got back to basics in many respects through topics such as the linking of rotations to quality, the importance of soil health for quality, and achieving quality under protection. It should be noted that the speakers would not necessarily have included

quality in their presentations but these were the titles that they were given. The quality of the speakers was exceptional and included two award winning organic growers of long standing who have made significant contributions to the Organic Advisory Service over the years. The third speaker is a respected soil scientist who has been involved in organic research for some considerable time.

In many senses it could be argued that there should not be a need for a presentation on the principles and design of rotations in organic systems. There are still new growers coming into organic production who are seeking information and guidance and there are perhaps some more established growers who could improve the design of their rotations. This process should start with a review of why rotations are used and the benefits that they bring to the system. Iain Tolhurst runs his holding on a completely stockless basis and supports his productive rotations through the maximum use of fertility building crops and modest quantities of home-made compost.

Alan Schofield has taken similar principles into his protected cropping system at Growing with Nature.. He is firmly of the belief that the EU Regulation should mean what it says when it states that materials of non-organic farming origin should only be used a supplement to those derived from organic farming practices. In practice he believe that this means that maximum use must be made of recycled materials from within the organic farming systems - in the case of horticulture systems this means home-made composts and green manures. His presentation went on to show how this has been put into practice in his protected cropping structures. The crops in the twin span poly tunnels are grown on a four year rotation and incorporate a number of green manure breaks, a practice that has been virtually absent in such systems in the past and is still absent from many of today's organic protected cropping systems.

Liz Stockdale gave an excellent presentation on soil health starting with a review of soil properties and moving on to show why the maintenance of good soil structure and the development of good organic matter levels are so critical to producing quality crops on a sustainable basis. All growers should have an instinctive understanding of these principles but just in case there was any doubt Liz backed up the presentation with scientific data that showed the clear benefits of good organic matter levels and the use of compost (as opposed to FYM). The audience listened politely but there were no questions at the end of the session. When challenged it was clear that some of them at least did not really make a point of looking at their soil. I continue to find it staggering that there is not the knowledge and appreciation of the soil among organic practitioners that there should be.

Discussion

Other questions from the floor revealed a certain tension between those who rely on brought in materials such as the growers who contributed to the earlier compost session and those who are more focused on internal re-cycling such as the speakers in this session. The statement that Annexe II materials should be supplements and supply no more than 49% of the requirements of a system is absolutely true. It is there in the EU Regulation but is not generally implemented in the manner in which it was intended by certification bodies in the UK and elsewhere. If it were then the volumes of brought in conventional manures and green waste compost used by some growers would have to be severely limited. This may seem to be somewhat drastic in respect of green waste compost given that it is a material that is resulting from initiatives to re-cycle waste and reduce landfill. It is arguably an acceptable product as long as waste food is kept out of the feedstock. Future legitimate use may only be acceptable if it is given Annex I status.

Storage of Organically Produced Crops

HDRA have now made this report available electronically. The report was originally produced for MAFF in 1997 and though some of the economics and market information is dated, there is a wealth of useful information in it which should be of use to growers researchers and advisers.

The main objective of the review was to establish best storage practice for field vegetables, potatoes, cereals and top fruit. A literature review was carried out and information was also gathered from the industry. Information relevant to growers and farmers has been drawn together to provide a comprehensive base from which technical advisory leaflets can be produced. The costs of different storage methods are provided, and case studies used wherever possible.

Download the report from http://www.hdra.org.uk/organicveg/downloads/Storage_organic_produce_report.pdf

The farmer forgives the plough and/or Minimal cultivations. But should he? And what about the worm?

In organic arable cropping the plough offers the most effective means that we know of killing the ley and controlling weeds, unfortunately it simultaneously buries organic material which would be better left near the surface and inverts soil organisms to depths which do not suit them.

The attraction of minimal tillage systems is therefore clear and is further boosted by the opportunity to reduce energy consumption, improve soil structure and avoid the tendency of the plough to aggravate some weed problems, such as wild oats, by encouraging seed dormancy and prolonging their viable life.

The reality is hard to achieve, particularly in a temperate climate where hot summer fallows cannot be assured. Indeed the experience of EFRC's Organic Systems Development Group (OSDG) farmers is that it is impossible to dispense with the plough routinely. But that does not mean that we should not be considering using a cultivator instead of a plough where there is an opportunity. Several OSDP farmers are now using heavy-duty spring tine machines such as Vibraflex, Terrdisc and Horsch-Simba FG, particularly in arable stubbles. Not only are these stubble cultivations often a critically important part of perennial and annual weed control but given the right weather conditions it is often possible to avoid ploughing before the subsequent arable crop.

The experience with a range of treatments in winter cereals at Lower Pertwood Farm, Warminster last year has been particularly interesting. During a relatively dry August and September 2003 three ley fields and three stubble fields, all adjacent were either ploughed to six inches or Shakerated then cultivated twice using the Horsch-Simba on land that ranges from light chalky loam to chalky clay.

All fields were then planted with a power-harrow combination.

The results.
Both techniques were effective in controlling the preceding crop or ley. In the first three months of establishment there were high levels of speedwell in all crops, particularly the cultivated wheat and moderately high levels of charlock in both of the triticale crops and locally high levels of wild oats in the wheat. The main difference, which was apparent early on, was the poorer germination and patchiness of the wheat following cultivations.

1.Warren Field : Ley that was ploughed. A weed free wheat crop that yielded well at 4.2 tonnes per hectare.

2. Little Ground: Stubble that was cultivated. Triticale with satisfactory yield but unacceptably high weed vetch infestation.

3.Big Ground: Stubble that was cultivated. A moderately heavy soil type. Triticale with low weed population and satisfactory yield. Crop harvested for wholecrop.

4.Hanging Field: Ley that was cultivated. A particularly light soil type. Wheat with low tiller count, unacceptable weed infestation of poppies, charlock and vetch and an unsatisfactory yield of 1.9 tonnes per hectare.

5.Lower Lords: Stubble that was ploughed. Titicale with low weed levels and a satisfactory yield of 4.3 tonnes per hectare.

6.Johnnies Ground: Ley that was ploughed. Wheat with low weed population and a high yield of 5.1 tonnes per hectare.

Comments
During the spring the cultivated crops appeared to have an unacceptable amount of trash on the surface, which appeared to reduce plant establishment - however this effect was not so apparent pre harvest. Generally weed levels appeared to be much higher in the cultivated fields.

In conclusion, the use of a cultivator (sometimes mistakenly referred to as "min till") was seen to be effective in both weed control and crop yield for a competitive crop such as triticale, but not for wheat. However the success of the technique is dependant on dry autumn weather conditions and where there are particular weed problems, such as vetches, the technique is inappropriate. There is unlikely to have been substantial energy saving through the cultivation technique due to the number of passes. The cultivations during warmer, early autumn weather is likely to result in mineralisation of organic matter, resulting in increased soil nitrate which is vulnerable to leaching unless a plant can be established early enough to mop it up.

Mark Measures
Head of Organic Systems Development Programme

Converting to organic vegetable growing

HDRA has released the final results from an eight-year study of farms as they converted from conventional to organic vegetable production. The HDRA Conversion to Organic Field Vegetable Production Project is a DEFRA funded project that ran from 1996 to 2004 and included EFRC's Head of Advisory Services , Roger Hitchings. The aims were to provide information on the agronomic and economic performance during conversion from conventional to organic systems with field vegetables.

Eleven farms took part in the DEFRA funded project. The study monitored both the agronomic and economic impacts of converting to an organic system. All the farms involved have completed their conversions and are now all producing high quality vegetables for the expanding organic market.

Growers had anticipated technical problems with weeds, pests and diseases, but generally this aspect of the conversion was easier than expected. It was the farms that had little prior experience of vegetable production, expanded too quickly or grew new, unfamiliar crops that tended to encounter difficulties. Generally, yields were lower than those obtained in conventional farming, although higher prices for the produce tended to compensate for this.

Problems with soils were more common, with growers facing challenges developing appropriate strategies and cost-effective ways to improve soil structure and fertility. There is considerable scope for further research in this area.

The biggest challenges faced by growers were managing an increased number of crops, new livestock enterprises, casual labour, marketing and making the whole farm financially viable, especially as the market became more competitive and prices were squeezed.

Financial performance of the farms involved was extremely variable, with organic vegetable gross margins varying by a factor of 15. This was closely linked to seasonal issues affecting yields, costs of casual labour, the market outlet used and prices obtained for produce.

Project leader, HDRA's Chris Firth said: "We constructed whole-farm economic models as part of the project and these demonstrate the sensitivity of financial performance to fluctuations in prices. These models indicate that 80 per cent price premiums for organic vegetables relative to conventional are necessary in order to have similar profitability. This is due to a combination of factors in organic systems, such as lower yields, higher unit costs and the need for land to be in fertility building for part of the rotation."

The models were also used to calculate the "costs of conversion" in terms of lost revenue during the transition process, additional management time and new investments for weeding etc. The models indicate that growers experience a decline in net farm income during the conversion period varying from £150 to £300/ha for the larger arable farms and up to £1300/ha for the smaller intensive farms during the period of conversion, ranging from two to eight years. Organic Farming Scheme payments only made small contributions to the costs of conversion, especially on the smaller intensive units where these costs were higher.

Michael Rogers, from Underwood Farm, South Devon, who participated in the project, said: "I found the conversion process involved much planning, but I now have the satisfaction of seeing that come to fruition. I never felt comfortable working with chemicals. I now enjoy working more closely with nature and in particular supplying food that consumers really want. Liz and I have really appreciated being part of the project and have learnt a lot, in particular from the advisory help and other farmers involved in the project."

During the project, which ran from 1996 to 2004, many farmers were attracted by the growing organic market and rose to the challenges of converting to organic production. This led to a rise in UK self-sufficiency for organic vegetables to 60 per cent by 2004.

HDRA's study has provided an increasingly valuable resource for growers keen to convert to organic methods and there has been considerable interest in its final results. Many of those farms involved will continue to provide valuable case study information on the performance of organic vegetable production, through a new project run by HDRA, The Sustainable Organic Vegetable Systems Network.

Further information on both projects is now available on HDRA's new organic vegetable systems website at www.organicveg.org.uk.

For free advice on conversion and to register for free advisory visits contact the **Organic Conversion Information Service (OCIS)** on 0117 922 7707.

The End of Oil - Conference on Peak Oil, Food and the Economy

On 11 October 2005, in London, a major conference will look at the peak oil problem and its impact on climate change, the world's food supply and the world economy.

The world's oil supply is running out.
Most analysts agree that once we pass the half-way point in the world's oil reserves, production will begin to drop off as the remaining reserves are more difficult to extract. Some believe that point will come in the next 12 months, others think we have 10 years or more left. But either way, we need to prepare now by reducing our dependency on this finite resource.

Oil and gas supply 85% of the energy used in the UK. By comparison, nuclear supplies 4% and renewables 1%.

Can nuclear be expanded by a factor of 20, or renewables by a factor of 85? Will coal fill the gap, and at what cost to global warming? Do we have enough coal left to expand its use 12 times over?

We rely on energy to produce, process and transport food. As energy becomes more expensive, will our food system revert to local production and organic methods? Can the world continue to feed itself at all without cheap energy? What steps should we be taking right now to avert future hunger?

Does the end of cheap oil herald the end of globalisation? Is the notion of continual economic growth consistent with a shrinking energy supply? Some observers predict a recession of 1930s proportions, but lasting much longer. Others believe the economic system could be reinvented along sustainable lines.

For more information and a booking form, visit www.eafl.org.uk/oil.

Progress on the Children's Food Bill

The Children's Food Bill was presented to Parliament by Mary Creagh, Member of Parliament for Wakefield on Wednesday 22 June 2005. The Bill aims to improve children's current and future health and prevent the many diseases and conditions, such as childhood obesity, which are linked to their unhealthy diets. It seeks to:

- protect children from the marketing of unhealthy food and drink products
- introduce mandatory nutrient and quality standards for all school meals
- prohibit the sale of unhealthy food and drink products from school vending machines
- ensure compulsory food education and related practical skills in the national curriculum
- place a duty on Government to promote healthy foods to children, such as fruit and vegetables

For more information, see: www.childrensfoodbill.org.uk

Upcoming EFRC Events

Organic Poultry: Is it for you?
20th October 10.00-5.00pm
South of England

Soil Management Plans are here and you need one!
November (Date to be confirmed)
Abbey Home Farm

To book your place, for further details or a programme contact EFRC's Education/Training Department on 01488 658298

Research in organic food and farming Elements for a sustainable Europe

In May 2006 - for the first time ever - researchers from virtually all EU funded research projects in organic food and farming will join the same congress to present their results for organic producers and processors, as well as for those interested in an overall sustainable development in Europe.

The event will take place on 30 - 31 May 2006 in Odense Denmark, and it will be held in collaboration with the biannual *Danish Organic Congress*. Together with the congress the Danish organizers are preparing an exhibition on technologies and products within organic food and farming. More information can be found at www.organic-congress.org

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