THE ORGANIC RESEARCH CENTRE
ELM FARM

Bulletin

with technical updates from The Organic Advisory Service

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Barbarians at the gate

Listeners to BBC Farming Today the other morning may have been rather surprised to hear a director of a major organic certifier telling the world that due to the pressures of the "credit crunch", with the organic market proving a little tough and feed prices so high, he was prepared to give organic livestock producers something of a holiday.

Not a trip to Lanzarote or even the sun-kissed Seycelles - oh no - this was a production holiday from the crippling travails of being a "proper" organic farmer. You know, that minor inconvenience of rearing your stock on feed that hasn't been soaked in pesticides, rendered down from decaying livestock or, Heaven forbid, compounded by someone who hasn't paid an organic certification fee.

And, even better, this vacation comes with the promise of rapid re-entry to full organic status once the storm clouds have cleared.

How is such a move supposed to encourage the development of thriving UK organic cereal production? What message does it send to consumers and others about organic commitment? Has UK organic agriculture descended from high principle to flip-flop market tracking? How does this reward those loyal farmers and growers who nurture their organic systems through thick and thin?

And the rationale behind this absurd idea? "With the downturn in the organic market we have a stark choice - we either hold fast and find that we lose some farmers because economically they can't continue, or we allow some way of enabling farmers to stay as part of our movement and find ways of not compromising their environmental and welfare outputs while enabling them to stay viable.

Given that we talk so much about organic being a movement, and people being on a journey and transition, suggests to me that we can't be too black and white about who is in and who is out - if we want people to be on a journey then they have to be on the train, not kicked off."

Whether or not Defra approves this mad plan, the very fact that some crazy, "at all costs" debate is taking place to protect the "movement" and keep people on "the train" is disturbing enough. Forget LEAF, forget “Conservation Grade”, there is no grey scale of calibration between organic and conventional production. Quite simply, either you're organic or you're not. Get on the train or get off.

Richard Sanders

Contents

Sorry tale of "not-so" organic oats

Batches of some "organic" oat products being sold in the UK have been found to contain one or both of the pesticide ingredients chlormequat and glyphosate (a plant growth regulator and a herbicide), following routine analysis of products undertaken by the Government's Pesticides Safety Directorate (PSD) earlier this year.

As we went to press, the full extent of the contamination, the source of contamination, and the number of products affected beyond those identified by the Pesticides Safety Directorate earlier in the year has still to be determined.

Whatever the cause, it is a potential marketing disaster for this usually most wholesome of organic cereals. Certifying Bodies are hoping that the likely source of this embarrassing problem is simple substitution of non-organic for organic oats along the supply chain.

As part of its own investigation into the source of the problem, the Soil Association says it randomly selected 12 oat-based products currently on sale, and sent them for analysis at the end of November. Soil Association Certification certified six of the products and other organic certification bodies approved the other six. The results proved alarming - all but two of the products tested positive - with some pesticide residues found in excess of the levels logged by the Pesticide Safety Directorate but within Maximum Residue Levels permitted by the European Union.

The legal position under the European Union Organic Regulation is clear. It states that where an organically certified company or individual considers or suspects that a product is not in compliance with the organic regulation, they should withdraw from this product any reference to the organic production method. In case of such doubt, the licensee must immediately inform their certification body, who may ask them to withdraw the product from sale until the integrity of the product has been confirmed.

Meanwhile, The Food Standards Agency (FSA) has received information that melamine (the chemical at the centre of all those recent dairy and food scares in China) has been found in the UK in imports of "organic" soya expeller for feed use.

The FSA advises that "in line with their responsibilities under Articles 15, 17, 18 and 20 of EC Regulation 178/2002 on the general principles of food law – feed business operators cease all use of and quarantine any supplies from the People's Republic of China of soya expeller in their possession and have the material sampled for the presence of melamine and related compounds (cyanuric acid, ammelide and ammeline)."

Mutant strain of *E. coli* found in the UK

The Soil Association has called on the UK Government to issue guidelines that will limit the veterinary use of the most modern penicillin-type antibiotics. The move is necessary, it says, to prevent the spread of a serious new superbug.

Recently released minutes of a Government committee reveal that Ministers have been briefed about the emergence on a British dairy farm of a mutant strain of antibiotic-resistant *E. coli* which causes life-threatening cases of food poisoning, including hemorrhagic colitis and haemolytic uraemic syndrome, both of which are a particular threat to children.

The bug, known as *E. coli* O26 is a vera-toxin producing *E. coli* (VTEC), similar to the infamous *E. coli* O157. What makes the discovery of this variant so significant is that this is the first time in the UK, and only the third time in the world, that VTEC *E. coli* has been found with an enhanced type of antibiotic resistance known as extended-spectrum beta-lactamase (ESBL), which makes it resistant to almost all antibiotics. ESBL resistance has previously been found on 57 UK farms, but until now only in strains of *E. coli* that cause urinary tract infections and blood poisoning.

Soil Association Policy Adviser, Richard Young, says – *"This is one of the most worrying developments in the continuing rise of ESBL* E. coli. *There is a distinct lack of awareness that the continuing high use of antibiotics in farming is contributing to the increase in antibiotic-resistant infections in humans."*

Although antibiotics are not recommended for the treatment of VTEC *E. coli*, scientists warn that the emergence of resistance is undesirable because these resistant bacteria are encouraged every time certain antibiotics are used, resulting in increased spread and greater risk of contaminated food products.

On non-organic dairy farms, cows are routinely given antibiotics at the end of their lactation to prevent mastitis. In addition, milk from cows given antibiotics for treatment, or prevention, is often fed to calves when it contains residues and cannot be sold. However, because ESBL *E. coli* O26 is resistant to all the antibiotics used in 'dry cow therapy' and many of those used for treatment, the high use of antibiotics on dairy farms will promote the rapid spread of these dangerous bacteria.

The use of antibiotics on organic farms is already limited, but from January 2009, the Soil Association is introducing additional restrictions on the use of modern cephalosporins on the farms it certifies in order to prevent, if possible, the spread of ESBLs to organic animals. The Soil Association is calling on the Government to bring in similar restrictions on all farms, whether organic or conventional.

New Zealand in Berkshire

As we move into 2009, the UK organic sector is facing challenges like never before. Richard Sanders has been to see one Berkshire producer who has an enduring model for organic success.

A little bit of New Zealand in Berkshire. That's how organic dairy producer Brian Goodenough describes his farming operations centred on his home farm at Eling, just north of Newbury.

He's been fully organic since 2000 – the decision to convert being powered by the twin engines of his enthusiasm for "free" nitrogen from clover and by the disillusionment of both himself and his father with the conventional agriculture "treadmill".

Not that organic production in the early 21st Century is without its hassles and disillusionment, says Brian. He points to a current milk base price of 32 pence a litre from the West Country farmhouse cheesemaker who takes all his milk, and who in turn has just had a big order for organic cheese cancelled by a major supermarket.

So, why New Zealand in Berkshire? Brian Goodenough's model is for milk from grass; for the cows to be out in the field all year round and to be all spring calving.

The single dairy herd on the 800 acres of Eling Farm now has 400 organic Jersey X Friesians averaging 5800 litres a year, produced from grass along with some 400kg of concentrate per lactation and an average of four tonnes of silage per cow. Much of that silage comes from 200 acres of lucerne that thrives on the gravels of the upper Pang Valley.

The milk cheque from the West Country cheesemaker is paid on total milk solids, which is where the Jersey genetics are so important. In contrast to New Zealand (where flying herds are still common), the average working life of the Eling cows is around six or seven lactations. Top quality dairy stockmanship is paramount.

Interestingly Brian's love affair with clover (one of the key drivers for his organic conversion, remember) is now over. He finds lucerne a far more manageable legume crop and across his continuous grass, rotational paddocks he is now planting herb mixtures, with plantain and chicory proving particularly successful.

He rents organic land around Newbury (including Elm Farm) and farther afield for his youngstock and beef, taking his total farmed area to some 2000 acres. As well as the cows and beef there's a small organic farm shop, focusing on meat and (bought-in) vegetable sales. In the last two years, organic turkeys have provided a seasonal boost to the winter cash flow.

Threats and opportunities

As a humble, tenant farmer one of Brian's major "business threats" is his landlord and the enthusiasm there (or not) for future development. Second in the threat category is serious animal health concerns, which on Eling Farm currently focus on a worrying worm burden and the rather generic threat of "flies" and whatever weird and wonderful diseases they might bring. And of course global warming and climate (weather) change cut across all these future threats, says Brian.

He's surprisingly sanguine about the "credit crunch", and perhaps that's all down to his own low cost approach and a real "get up and go" attitude to marketing. Brian's latest project is a push to sell organic meat into the catering trade.

His infectious optimism is now directed at a possible "cloning" of low cost organic dairy system on another block of land, but perhaps not just at the moment. Whatever he does, Brian Goodenough's brand of ecological farming is a refreshing example of a truly engaged organic producer, with a proper organic philosophy bolted on to a real, sustainable business model. Something worthwhile then to pass on to his sons - if so they choose.

Abbey Home Farm Award

Hilary and Will Chester-Master at Abbey Home Farm, have won the Environmental Retailer of the Year award from the National Farmers' Retail & Markets' Association (FARMA).

The Organic Farm Shop with its cafe, just outside Cirencester, offers fresh homemade meals and food from the farm. The judges considered The Organic Farm Shop was "going that extra mile to assure a positive future for our planet" and in the process setting the standard very high for other farm retailers.

And the winners of BBC Radio 4's Food and Farming Awards 2008 have also been announced. Farmer of the Year went to organic (British Friesian) dairy pioneer Mary Mead, Holt Farms Ltd, Blagdon, Somerset who is also founder of Yeo Valley.

Sheila Dillon, presenter of BBC Radio 4's The Food Programme, and host of this year's awards ceremony, said: *"In these financially and environmentally chaotic times there's never been a more important time to honour food producers, retailers, cooks and campaigners. Our award winners have all been helping to keep alive the tradition of the best local and sustainable food. They are a model for the future."*

Correction

In Bulletin 94 (August 2008) we mistakenly credited the feature article – GM crops – an answer to which question? – to the authors Prof. Dr. Hartmut Vogtmann and Rafael Rios. In fact the authors were Prof. Dr. Hartmut Vogtmann and Jeffrey Loho. We apologise for the error and for any confusion or embarrassment caused.

Silver lining to the "credit crunch". A contrarian view.

Dr Ulrich Schmutz, Environmental economist

Many people can't bear to hear it any more: the news is full of "credit crunch" - soaring prices for food and energy. They lose confidence in the current economy and in the whole toolbox of the market model. More state intervention, more regulation are the words of the moment as if an "intelligent and wise government" can be taken for granted. But, hold on a minute, is this really the truth when you think about it?

Everything that happens now is a reaction to previous conditions; it has a history. Wasn't credit inflated and risks ignored as 100% mortgage deals were offered and accepted by far too many of us?

Were not food prices extremely low on the back of environmental pollution and poor animal welfare within industrial food production systems?

Wasn't energy so cheap that it was difficult to research or invest in alternatives to fossil fuel driven energy?

Aren't the carbon pollution of fossil fuels and nuclear energy's slow, but long-term pollution of sea and soil excluded from the equation? Even now both are nowhere near fully accounted and someone will, some day, pay the price for our currently "cheap" energy.

Hollow investment products

So on the face of it, isn't the current crunch, the recession and potential depression part of the solution and not the problem?

If so capitalism finally works. It brings down the hollow investment products, inflated banking industry and other bubbles with a mighty, powerful crash. As in the building industry or nature itself there are demolition companies or saprophytes, which feed on crumbling and dying structures to make way for a new system. But they are part of the system they didn't cause the problem. The problems must have occurred much earlier when the weather was fair and with the party in full swing and when only a few wanted to listen to the contrarian view, spoiling the fun everyone else was having.

It is a real irony of history that the very same people running the economy for the last decade, ignoring or appeasing the risks and even claiming fake success from their own making and experience, now position themselves as the saviours. From appeaser to saviour and administrator of serious change that hasn't worked before, maybe it works now - if the electorate had a proper say.

The current solution to our previous problems is sadly not just a question of juggling a few leadership positions. A new order can only grow from the rubble of the old if everybody takes a stake and when everyone shows personal leadership.

So what is the solution and how will it shape itself? To answer this question it is important to analyse the problem and understand it. It is not the short-sellers who bring down rotten companies, because they can only succeed if the companies are really rotten and their judgement of the market turns out to be correct.

Nobody blamed short-sellers when they were on the side of falling food prices for many years and thereby making new investments in farming and food rather unprofitable and forcing animal welfare down to a "bog-standard" minimum in cheap, intensive units.

Market forces can do a great deal. Increases in food and energy prices will continue because the current farming system is based on fossil fuel and fossil fuel is very pollutant and luckily is running out rather soon. Both effects will contribute to further rises and if the full environmental costs are priced in, fossil and nuclear fuel will be uneconomic before they run out. And that would be great news for the environment.

Renewable energy security

Renewable energy will then have a secure basis for investment and the different forms of renewable energy will compete against each other. For example it will be an issue that biogas (anaerobic digestion or AD) from biomass, if used for electric power generation, can technically only have a 40% efficiency, while wind and solar have no such problems. It may well be that biogas goes exclusively into the gas grid and for vehicle fuel.

A full and open competition of all renewables against each other, without the distortion of government subsidies, would bring this sector up to speed in no time.

Increasing food prices will continue to trigger investment in farming, especially in developing countries. It will make organic products less expensive in relation to conventional products because, so the theory goes, organic is more energy efficient and uses less external inputs. If not, organic research has to make sure that organic production is energy efficient and can offer its products with a fair and competitive price to everyone. If, one day, organic is cheaper then conventional it is easy to gain market share and turn the whole food and farming system around.

Rising from the ashes

This is exactly the kind of system, which could emerge from the ashes of the "Mighty Crash". So for the contrarian there is no reason for doom and gloom in a depression. Rather it gives added impetus for working on the systems, which should and could follow it. Organics never faced a depression, if you ignore the Amish system during 1929s, but if the organic way is any good, it needs to show that it is "depression proof". It must provide leadership for the new, sustainable order to emerge.

Organic poultry. Let them eat grass.

Picture: Rosie Jordan

Your last Bulletin (No 95) contains two interesting articles on the feeding of poultry - one by Cliff Nixey and the other by Peter How. I was struck by the fact that neither article even mentioned the grass that the birds in each case must/should have had access to for free range.

Some 20 years ago, when I was a Soil Association registered farmer, we produced on our farm, both organic eggs and meat birds. We found that a significant portion of the diet of both lots of poultry came from the grass and whatever flora or fauna that they gathered themselves.

This was most strikingly shown with 200 Turkeys raised for Christmas in 1991. They were brooded using gas brooders in the field which they later grazed, and given a restricted penned area until the age of about 4 weeks. The grass was a good Italian ryegrass -red clover ley with some herbs, extending to 5 acres.

"Eating the lawn"

By the time the poults were given the full field the herbage was 18-24 inches high with the clover in full flower. Between September and December they ate all the grass down to lawn length, and particularly liked the flower heads, we estimated that they substituted in excess of 25% of their cereal based diet for the herbage. We were feeding a home mill and mixed cereal and beans based feed which did not have particularly high protein content. Our Christmas sales of dressed turkeys produced too many over weights for our expected outcome and some of our customers.

Our egg laying flock also ate/fed a significant part of their diet from what they collected in the field. (We also scattered whole wheat for them every afternoon, either in the litter or in the field). Again they were reared from day old with some access to pasture, which we found resulted in adults that fearlessly roamed and foraged to a much greater extent than birds reared inside to 10-12 weeks.

Another aspect which I feel needs much consideration is 'have we got the right genetics and right thinking for good organic production in the poultry (and pig) farms'

Wandering stock

In a natural state both pigs and chickens are wanderers and scavengers and do not have a high protein diet. Changing to a diet more like that could fit better into the future requirement to produce more own feed and be far less expensive. Pigs can live on a much higher forage diet than is generally permitted/allowed and are the best vegetable/bread waste recovery units, if only we have suitable genetics. In poultry do we need some of the genetics of Giri Raja (Forest King) Indian poultry with some reversion to feeding swill/mash from roots?

Too often we seem to be locked into the tail end of a conventional world when their practices and diet are not good organic farming. If currently the cost of feed represents 75% of the production cost of a meat bird, then growing them for a bit longer and feeding a much cheaper, possibly all home produced, diet is worth serious consideration.

Jerry Harding, Alveston, Bristol

ORC poultry researcher Becky Kelly responds

Sheepdrove Organic Farm (SOF) birds not only meet Soil Association standards for access to and size of range, they go beyond them. The range has been designed to be diverse, with a mix of agroforestry, herb strips and a ley mix that allow for self-medication and behavioural enrichment as well as nutrition.

Birds are brooded indoors but have access to the outside world via specially designed conservatories on the sides of the brooder sheds. They become habituated to farm and outdoor sounds as staff play CDs of the noises they will encounter once outside. These measures help birds range far and wide. Grass on the range is well grazed by the time the birds move off so we know it contributes to their diet.

A trial that fed grass pellets and naked oats was conducted at SOF earlier this year and tried among other things to lower the cost of feeding poultry. It was thought that feeding grass pellets may be a protein rich, cheap complement to the energy loaded naked oats as grass is cheap to grow. Unfortunately the increased milling costs and associated emissions don't tie in with strict organic ideals.

Regarding genetics and being locked into the tail end of conventional production - we agree. The development of the physical system at SOF is an improvement and we do want to look at more appropriate breeds, but due to the set up of the poultry industry this is particularly difficult as there are so few breeders. This does not mean that we should do nothing, but its resolution is more of a long term aim.

Feeding the World Conference

A successful start to picking up the "Woolas Challenge"

FEEDING THE WORLD CONFERENCE
© LONDON 12 NOVEMBER 2008
Are GM crops fit for purpose? If not, then what?

Picture: Jason Ball

Morning panel discussion at the conference - from left: Prof. Jack Heinemann, University of Canterbury, Christchurch NZ; Dr Brian Johnson, Environment Consultant; Dr Katherine Pasteur, Practical Action and Dr. Michael Antoniou, Kings College, London.

The QE2 Conference Centre in Westminster (November 12th 2008) saw over 130 delegates and speakers in hot debate about the failure of GM crop technology to deliver anything on the promises of the last two decades. In stark contrast, speaker after speaker pointed to agro-ecological approaches (including organic agriculture) as extremely attractive sustainable farming and food options, especially in a world fast running out of oil.

They were all attending the Feeding the World conference, organised by the Organic Research Centre.

"We have made a good start in picking up the Woolas Challenge, set down by the previous GM Minister at Defra, Phil Woolas, who this autumn stated that the UK Government considers that anti-GM campaigners have just twelve months to put up or shut up about their safety, environment, food supply and social concerns," says Lawrence Woodward, director of the Organic Research Centre.

"We are particularly grateful to speakers from Kenya, New Zealand, Holland and Italy who have taken time out of their own pressured schedules to deliver some excellent science arguments in a measured and convincing way. With this conference we have raised the quality of debate on why GM will not feed a hungry world and at the same time we have displayed real detail on positive, alternative approaches."

The star speaker at the conference was Professor Jack Heinemann from the University of Canterbury, Christchurch, New Zealand.

He headlined the fact that failure to contain transgenes, generated by GM crop science, can have serious human health, environmental and legal implications. Gene flow is the key environmental concern for sustainable coexistence of GM and non-GM crops, he said.

"The flow of transgenes to wild relatives or into new environments may cause harm to humans or other species. These harms may be different from those created by the primary GMO in its intended use. The flow of transgenes also makes both GM and non-GM farmers increasingly vulnerable to liability lawsuits from either those who hold the intellectual property rights of the transgenes or farmers whose crops mix with those certified to be GM free," said Professor Heinemann.

He urged regulators across the world to add real caution to their enthusiasm for GM crop releases. *"Risk assessment frameworks in most jurisdictions are case by case. Gene flow undermines this case by case approach because the movement of transgenes to different genetic backgrounds and species in an uncontrolled manner will result in the creation of new GMOs that have not benefited from any assessment...The track record of containment from the last 12 years of commercial development provides little confidence that either the biotech or the agriculture industries can keep these plants on the farm or segregate them away from the human food supply."*

He concluded that there appears to be no single method - and perhaps no combination of methods - that can reliably keep transgenes fully contained once out in an open environment.

Dr Jeremy Cherfas from Bioversity in Rome reminded the conference that the primary causes for hidden world hunger and obesity include a simplification of the diet. Most solutions, however, have been equally simple. *"Supplements of micronutrients cure the symptoms but do not treat the dietary lack of these essential compounds. Fortification of foodstuffs is a similar approach and does not reach those outside the cash economy. Biofortification to increase the nutrient quality of staple crops, whether by conventional breeding or genetic manipulation, has a patchy record to date and also may not reach all who need it."*

Dr Janice Jiggins from Wageningen University in the Netherlands explored the intricate failings of the world food system and food security. *"Some powerful GM enthusiasts claim GM technologies can solve these complex problems,"* she said.

"There are no facts about the future…On past evidence GM technologies so far have not served the inter-dependent goals of sustainability and development."

Some excellent advocacy for common-sense ended the day from Dr Julia Wright of Garden Organic (HDRA). She clearly explained how the industrial approach to agriculture seeks to maximise production through the simplification of farm components, the suppression of natural processes and the use of external technologies. An ecological approach, on the other hand, seeks to optimise production through the enhancement of farm components and ecological processes toward an integrated, eco-systemic whole.

"Underlying these divergent approaches are particular sets of attitudes and beliefs surrounding agriculture, and the development of GM technology stems from the belief that mankind can break free from and take control over the natural environment and that this is a positive step," she said.

"Whereas GM technology attempts to manipulate nature at the level of the gene, agro-ecological approaches manipulate at the level of the ecosystem. The impacts of the former are not immediately invisible, whereas the impacts of the latter are largely visible and have been tested and improved over thousands of years."

She left the conference with this powerful thought – *"There is no GM techno-fix for which there are not already agro-ecological solutions, including for weed suppression, resistance to pest and disease, improving nutrition, soil bioremediation, and drought and salt tolerance.*

Other speakers at the conference included Dr Charlie Clutterbuck of the Food Ethics Council and City University looking at definitions of food security; Dr Michael Antoniou - a lecturer in molecular genetics at Kings College, London contrasting the value and safety of medical GM approaches to the environment and pollution threats of GM crops; and Dr Katherine Pasteur from the NGO Practical Action on why GM crops will not feed a hungry Africa.The conference was supported by The Sheepdrove Trust, Practical Action, Slow Food UK, GM Freeze, Friends of the Earth and The Ecologist magazine.

It heralds the start of more urgent activity by the Organic Research Centre and other partners in the anti GM crop campaign to ensure this unwanted and unnecessary technology is not adopted in the UK, the EU and even farther afield.

For more information,visit:
www.feedingtheworldconference.org

Richard Sanders

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Lingering threat of Avian Flu pandemic

At the International Ministerial Conference on Avian and Pandemic Influenza in Sharm el-Sheikh, Egypt in October, the senior flu coordinator at the United Nations – David Nabarro, reiterated that the threat of a pandemic triggered by an avian influenza virus is just as great as it was five years ago.

That was when H5N1 first started its travels around the world. In fact, new estimates from the World Bank predict a severe pandemic could cost much more than the current "credit crisis" and kill a quarter of a billion people across the globe.

Rather worrying then that the recent focus of attention on avian influenza in the UK has been Defra, busy congratulating itself that – on paper at least – the UK is now free of the disease. These are the opening words of its statement on the matter,

The UK is officially free from Avian Influenza (AI) from today (20 November), according to the rules laid down by the World Organisation for Animal Health (OIE).

OIE rules require a three month interval between the final cleansing and disinfection of premises involved in the outbreak and official recognition of freedom from the disease.

The UK has not been able to export poultry and poultry products to the majority of its traditional third country markets for the last 12 months because of three AI outbreaks during 2007 and 2008. Resumption of the UK's status as officially free from AI in line with OIE rules will greatly assist negotiations by Defra and industry partners to regain access to these markets.

This statement's blandness is quite staggering. Real evidence continues to build, implicating the intensification of the global poultry sector in the emergence and spread of highly pathogenic avian 'flu viruses. In the May/June 2008 issue of the "Public Health Reports," the official peer-reviewed scientific journal of the US Public Health Service, an international team of scientists, including researchers from the John Hopkins Bloomberg School of Public Health and the Food and Agriculture Organization of the United Nations, suggests that the best available data show that birds confined in industrial operations have up to 32-times more risk of being infected with H5N1 than "backyard flocks".

With such serious issues lying un-debated by our Government and its officials The Sheepdrove Trust has recently funded the production of a DVD on Pandemic Prevention. It is a professional recording of the eminent scientist Michael Greger Director, Public Health and Animal Agriculture, The Humane Society of the United States delivering closely reasoned arguments on why we should all fear the imminent spread of disease from livestock to man. Your free copy is enclosed with this Christmas ORC Bulletin.

This DVD is funded by The Sheepdrove Trust

Populations spring into action

Helen Pearce

A Paragon-Tybalt mixture topped this year's spring wheat trial at Wakelyns, at 7.48t/ha (Fig. 1). This was closely followed by Tybalt (7.37t/ha) and two of the wheat composite cross populations, YQ CCP (5.96t/ha) and Q CCP (5.65t/ha).

The aim of this pilot trial is to see if the winter wheat composite cross populations (CCPs) could adapt to spring sowing (see Bulletin 92 - Winter wheat populations: a springboard?). The CCPs are genetically diverse crop stands, and thus potentially able to adapt over time. Three CCPs were made by crossing:

1) 12 parent varieties selected for good milling potential (quality): Q CCP;
2) 9 parent varieties selected for high yield: Y CCP; and
3) both sets of parent varieties: YQ CCP.

In addition to these three populations, physical mixtures of the quality parents (Q Mix), yield parents (Y Mix) and all parents (YQ Mix), were trialled. Two standard spring wheats, Paragon and Tybalt, were also included, as was their 50:50 mixture (PT Mix).

Since the CCPs had been made by crossing only winter wheats (except for two of the Quality parents, Cadenza and Thatcher), it was with bated breath that we watched the wheat develop. Without vernalisation, we had expected that the CCPs might fail to develop in many, if not all, of their tillers. Our hope was that there would be enough seed produced to re-drill in Spring 2009, and that this seed would be more likely to contain genotypes suited to spring sowing. However, whilst lack of vernalisation had caused many tillers to fail to produce an ear, enough plants had flowered successfully that we not only had enough to-redrill this spring, but also achieved impressive yields.

Generally, the mixtures (Q mix, YQ mix and Y mix) performed less well than their CCP counterparts. This is a result that had been expected; the mixtures do not contain the same levels of genetic diversity as the populations, being only physical mixtures and not genetic crosses of each of the varieties. The performance of the Paragon-Tybalt mix relative to each of its individual crop stands demonstrates the capability of a mixture to complement and compensate, and yield better than the mean of its components.

Surprisingly, Q CCP and YQ CCP both out-yielded Y CCP. When the CCPs are used as winter wheats, Y CCP generally ranks highest for yield, because this population was generated using only parent varieties bred for yield, and not quality. The most likely cause for this reversal in trend under spring sowing conditions is that the Quality CCP included two spring wheats, Cadenza and Thatcher, whereas the Yield CCP comprised only of winter wheats. The inclusion of the spring wheat genotypes will have given the Q CCP and YQ CCP a head-start in the race to evolve into a spring wheat.

This pilot trial will be valuable to farmers who are already trialling the winter populations, but are keen to grow them in the spring. The yield deficit is much less than was expected, and as a result an informed decision can be made, whether to change the adapting farm populations to a spring rotation. This might be particularly pertinent for those interested in growing milling wheat.

The trial will be replicated again this spring, using seed harvested from the trial. Having undergone a year's selection, we hope the populations will perform even better next year. Watch this space…

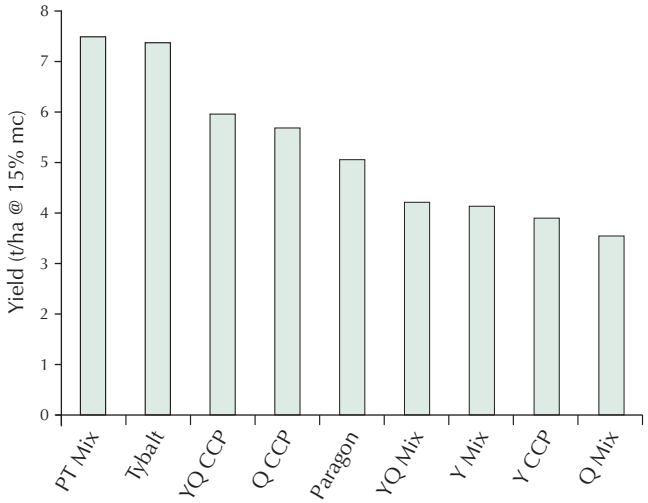


Figure 1. Yield (t/ha @15% mc) for wheat drilled 21/02/2008 and harvested 28/08/2008 at Wakelyns (p<0.001, l.s.d. = 1.843).

Real Bread Campaign

A new campaign for Real Bread in the UK has been launched by the environment alliance Sustain (ORC is a member). The coalition of consumers, bakers and campaigners has joined together to challenge the giant industrial baking companies.

Andrew Whitley, founder of the Village Bakery and author of the book 'Bread Matters', says - *"Real Bread is better for you, better for your community and better for our planet. Many people I speak to are horrified when they find out what is actually in their daily bread. Bread should be the staff of life, but the label on the average loaf reads more like the recipe for a scientific experiment than the ingredients of our staple food."*

Richard Watts, campaigns director of Sustain says - "The Real Bread campaign is for anyone who wants to see a return to good, honestly labelled, food which looks after both you and the environment. We are launching a Real Bread finder that will tell people where Real Bread is sold in their area. Over the coming months we plan to increase the amount of Real Bread sold in the UK, to support local bakeries and to expose problems with industrially-produced bread."

More information:
www.sustainweb.org/realbread

Research note - Wheat LINK roots

Zoë Haigh

The Wheat LINK trial aims to investigate the effects of various management practises (seed rate, drill, under-sowing, weeding, use of variety) on the agronomic performance of organic winter wheat.

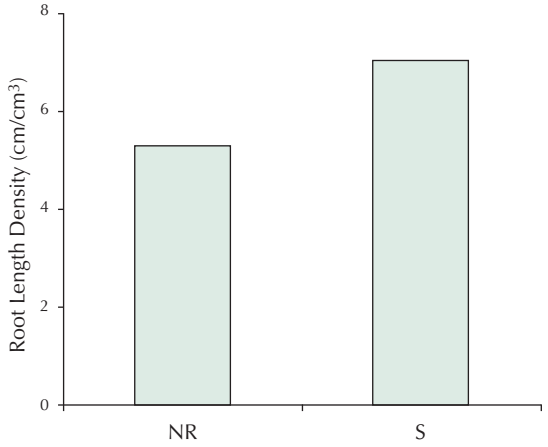
Many above ground characteristics such as early growth and vigour through to yield and quality are easy to measure, but the final performance of the crop may also be influenced by what is occurring below ground.

For example, the strip drill built for this trial by Jeff Claydon was originally designed for use in non-organic minimum tillage systems. The chisel tine set 3cm below the drill depth breaks up the soil with the aim of providing an optimum seed bed for improved root distribution.

To test if this design actually did have a significant effect on the roots, we took soil cores from both narrow row (NR) and strip drilled (S) plots at Wakelyns in May last year. A total of 240 cores was taken, and subsequently washed, scanned and analysed by our project partner, the Scottish Agricultural College. Despite the notorious difficulties in taking root samples which show anything significant (as they tend to be very variable over an extremely small area) SAC discovered some notable results.

In one of the varieties, the strip drill significantly increased (see below) the root length density (that is the length of roots in a cubic cm of soil) compared to the narrow row drill. This increase was not translated into higher yields or higher grain quality in those plots this season.

However, a better rooting structure may be especially useful in drought years when improved access to and uptake of water and nutrients would help the crop perform to its best. Further data from the second year of cores will be available soon.



EU organic road map

A new "road map" for EU organic agriculture has been launched in Brussels, plotting the future course of sustainable farming.

The Organic Research Vision 2025 document shows the numerous ways in which organic food production can significantly contribute to solving such problems as climate change, loss of biodiversity, food security and depopulation of rural areas.

The vision paper has been produced as part of the EU Technology Platform (TP) "Organics" programme.

"Organic research has an incredible potential to develop new and innovative social, ecological and economic concepts related to sustainable food production", says Nic Lampkin from the University of Aberystwyth.

"The EU should lose no time and use the tool of the 7th EU Research Framework programme to boost organic research", urges Marco Schlüter, director of the IFOAM EU Group, "The EU can't miss this chance to foster innovations and economic development in line with the need of society for sustainable solutions. Sufficient efforts in organic research are of outmost importance to secure future potentials."

The EU Technology Platform 'Organics' brings together the organic sector, research community and civil society to identify research needs and priorities and to enhance the development of organic food production and with this its benefits for the society. It follows the model of so-called technology platforms acknowledged by the EU. The strong involvement of civil society makes TP 'Organics' unique.

Organic markets offer huge prospective opportunities for farmers and industry in the EU. The retail market for organic products in the EU has reached almost 16 billion Euros – a figure representing more than half of total organic global food sales.

Notes - TP 'Organics' is a platform for organic food and farming research which combines the efforts of industry, research community and civil society in defining organic research priorities and defending them to the policy-makers.
www.tporganics.eu

The "Vision for an Organic Food and Farming Research Agenda to 2025 – Organic Knowledge for the Future" is a publication of TP 'Organics' prepared after a one-year round of consultations. The Vision reveals the huge potential of organic food production to mitigate some of the major global problems of the century. It also argues the need for more research in specific priority areas and therefore for more funding for such research.

Non inversion organic farming. An oxymoron or a step change in organic farming?

Mark Measures

The recent study trip to Friedrich Wenz's organic farm near Baden Baden in Germany organised by the Institute of Organic Trainers and Advisers (IOTA) in association with Organic Arable promised a radical new technology which could offer better soil management and answer our conventional min till critics.

Ever since the Saxons started to replace the ard with the mouldboard plough, inverting the soil has seemed to be the easiest way of killing turf, controlling weeds and providing a suitable tilth for sowing crops.

Unnatural soil inversion

Unfortunately, there are a number of negative consequences, including an "unnatural" soil inversion which has an adverse impact on soil life, a risk of creating a soil pan, excessive oxidation of organic matter, excessive energy consumption in both the ploughing and subsequent cultivations and in some cases, weeds such as wild oats are actually aggravated by ploughing.

Given our organic ambition of maximising soil life, and in particular earthworms, it is very unlikely that the soil, let alone the worm forgives the plough.

Following the IOTA Non Inversion Tillage Research Review (see www.organicadvice.org.uk) and Friedrich Wenz's presentation at our meeting in Yatesbury in July this year (ORC Bulletin No 94), the chance to see the practical results of 25 years of non inversion tillage was eagerly sought by our group of organic farmers and advisers.

What we saw was a small stockless, biodynamic arable farm with low levels of weeds, producing reasonable, but not exciting yields, using a single piece of very refined, non powered cultivation machinery which has been developed over 20 years, offering a radical alternative to the plough.

Sophisticated organic system

More importantly, what we found on this farm was a sophisticated level of understanding of what an organic system is really about – and putting that into practice with some rather novel kit. An absolute focus on maximising soil fertility, organic matter build-up and feeding the soil life while avoiding all bought-in mineral fertilisers and manures has resulted in a cropping system centred on green manuring at every opportunity.

A focus on maximum production from minimum energy input has produced a "zero energy" farm. The soil was the greatest testament to the fact that there was something special going on here – it was simply a teeming mass of worms, insects, fungi and the rest, consuming and incorporating prodigious amounts of green manure organic matter into the soil.

There has been very little detailed monitoring of this farm and its system. The crop yields given were general rather than precise. Soil analysis results were available and showed organic matter levels of four per cent, which is probably high for these circumstances.

But frustratingly there is no comparative analysis with neighbouring organic and conventional farms. So while it may give some pointers to potential for carbon sequestration, it certainly doesn't provide clear evidence. While annual and perennial weeds are undoubtedly present, they are clearly being well contained with the system. The overall energy requirement is significantly lower than that for the standard plough and cultivator system.

Having passed the "doubting Measures" test, it was then a question of "will it work over here?"

Thinking about management

The growing conditions are, of course, very different, with our shorter growing season and less predictable climate. However, what is promoted here is not a blueprint attached to a piece of kit. It is a way of thinking about soil and farm management which requires a detailed knowledge of one's own farm, cropping and green manure options, and use of rigid tined equipment with a wide range of hoe points and sweeps. The Wenz farm involved a degree of expertise and timeliness rarely found in Britain.

A plough and power harrow is an easy option by comparison, but with dedication it does seem from Friedrich's work on his own farm and many other farms through central and Eastern Europe that the system can be made to work under a wide range of soil and climatic conditions.

Just the right kit

What is required is the site-specific application of the approach. Having the right kit – namely a frame with rigid tines and an array of attachments, including a multibox seed drill, seems to be important although there are other similar farms trying with standard cultivating equipment.

IOTA in its work in supporting the development of more climate change friendly techniques will continue to maintain links with Friedrich. We are planning further study visits to see the application of the system under different conditions.

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The new, organic, deal for Africa

If you want to feed a hungry Africa then organic agriculture is your best choice. So says a key new study from UNEP the United Nations Environment Programme which has the clear message that only organic farming offers Africa a real chance of breaking the cycle of poverty and malnutrition that it has been locked in to for decades.

UNEP's research for the report suggests that organic, small-scale farming can deliver the increased yields which were thought to be the preserve of industrial farming, without the extensive damage which that form of "developed" agriculture can bring.

An analysis of 114 projects in 24 African countries found that yields had more than doubled where organic, or near-organic practices have been used. That increase in yield jumped to 128 per cent in East Africa.

New evidence suggests that organic practices are delivering sharp increases in yields, better soil and a boost in the income of Africa's small farmers who remain among the poorest people on earth.

The head of UNEP, Achim Steiner, says the report *"indicates that the potential contribution of organic farming to feeding the world may be far higher than many had supposed".* Far from being a Western lifestyle fad, organic productions is delivering sharp increases in yields, improvements in the soil and a boost in the income of Africa's small farmers who remain among the poorest people on earth.

The "green revolution" in agriculture in the 1960s – when the production of food caught and grown surpassed the needs of the global population for the first time – largely bypassed Africa. Whereas each person today has 25 per cent more food on average than they did in 1960, in Africa they have 10 per cent less.

The enlightened views of Mr Steiner contrast markedly with the blustering rhetoric of the former chief scientific adviser to HM Government , Professor Sir David King.

He asserts that the rise of organic farming and the rejection of GM crops in Britain and other developed countries lies at the heart of the impoverishment of Africa. Sir David, says anti-scientific attitudes towards modern agriculture are being exported to Africa, and are holding back a green revolution that could dramatically improve the continent's food supply.

Earlier this year he criticised non-governmental organisations and the UN for backing traditional farming techniques, which he says cannot provide enough food for the continent's growing population. *"The problem is that the western world's move toward organic farming - a lifestyle choice for a community with surplus food - and against agricultural technology in general and GM in particular, has been adopted across the whole of Africa, with the exception of South Africa, with devastating consequences."*

Recently Sir David, who is now director of the Smith School of Enterprise and the Environment at Oxford University, said genetically modified crops could help Africa mirror the substantial increases in crop production seen in India and China. *"What was demonstrated there was that modern agricultural technologies can multiply crop production per hectare by factors of seven to 10."*

He said the recent IAASTD report chaired by Professor Robert Watson, the chief scientific adviser at Defra, was shortsighted. The report concluded that GM crops had only a minor part to play in eradicating world hunger. The research, based on the findings of 400 scientists, noted that food was cheaper and diets better than 40 years ago, but that while enough food was produced to feed the global population, still 800 million people went hungry.

"You cannot argue that Africa has hunger because it doesn't have GM today," said Professor Watson. *"We have more food today than ever before but it isn't getting to the right people. It's not a food production problem, it's a rural development problem."*

Now it's a phosphate crash

Yields of UK non-organic wheat could fall from an average of nine tonnes a hectare to four tonnes a hectare later this century, as the planet runs out of phosphorus.

So says Professor Carlo Leifert, leader of the University of Newcastle's EU - funded Quality Low Input Food (QLIF) project. Its work shows that yields of non-organic wheat could drop to well below organic yields from nearly 8 tonnes a hectare to 2.5 tonnes a hectare without phosphate fertiliser. These estimates are based on expected yield reductions, if no further phosphates are applied from 2070 for 30 years. Organic yields without phosphate would be six tonnes a hectare.

Some 85 per cent of the known deposits of phosphorus are in four North African countries, Morocco, Algeria, Tunisia and Egypt. The world is using up the 4 to 8 billion tonnes of phosphorus deposits left at the rate of 125 million tonnes a year.

The price of mineral rock phosphate has increased by fivefold over the last two years. The QLIF estimates are based on expected yield reductions, if no further phosphates are applied from 2070 for 30 years. Organic yields without phosphate would be 6 tonnes a hectare, says Professor Leifert.

"For the last 50 years industrial farming has been relying on phosphate mined in North Africa in ever-increasing quantities, while using this scarce resource less and less efficiently. The scarcity of phosphates is driving up the price, and sooner or later, as we inevitably start to run out of phosphates, non-organic yields will start a dramatic decline. Organic farming will also face problems, although not on the same scale, and the solution would be for organic farmers to use human sewage sludge as fertiliser," he says.

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Bravo Biffa

Biffaward Grants Officer, Cath Leverseidge pictured with ORC Education Officer Bob Winfield at the beginning of the Elm Farm trail, pointing out the new gates (that have been funded by Biffaward) on the trail map. This has made the farm trail much more accessible for people with restricted mobility.

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Season's Greetings

We would like to wish all our friends and supporters a happy festive season and offer our best wishes for a prosperous and successful 2009.

Happy Christmas from everyone at The Organic Research Centre - Elm Farm and Organic Inform.

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