



ELM FARM RESEARCH CENTRE CONFERENCE

DOES ORGANIC FOOD HAVE AN 'EXTRA QUALITY'? New Research, New Perspectives and New Insights

**A record of the Conference held on
TUESDAY, 23RD NOVEMBER 2004**

**This Conference was sponsored by Sheepdrove Trust
in collaboration with**



**FQH (International Network for Food Quality and Health)
Sustain (the alliance for better food and farming)**



ELM FARM RESEARCH CENTRE

The Organic Research Centre
'For organic principles and best practice'

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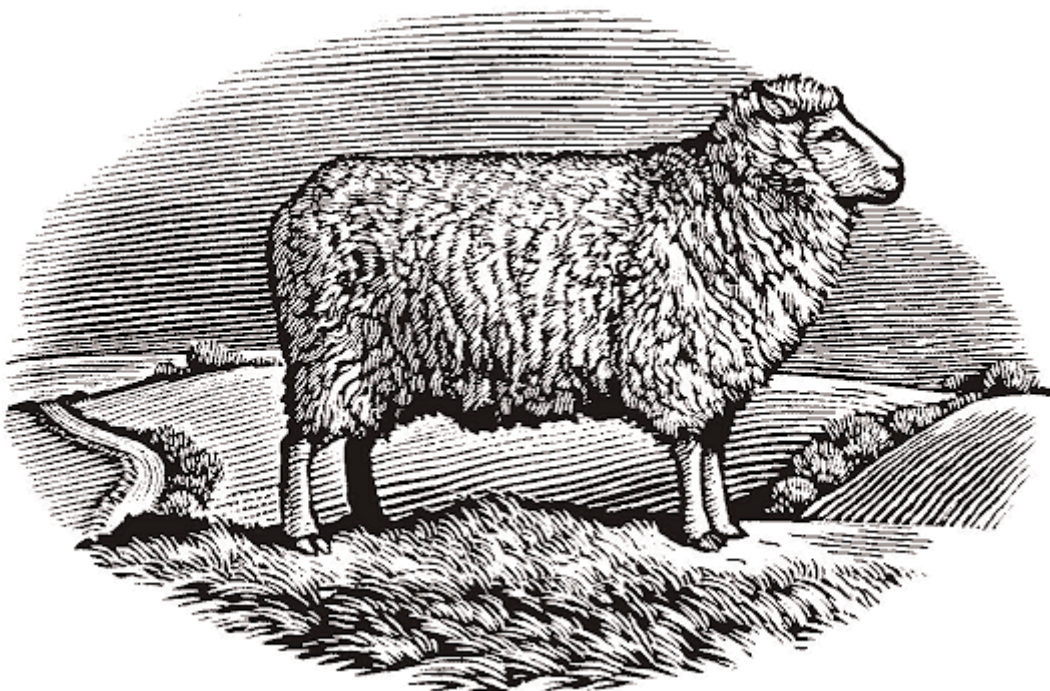
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A special acknowledgement

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Acknowledgements

We would like to thank **all** those who participated in the Conference on 23rd November 2004 - those who gave presentations, those who chaired, those who responded and those who participated in asking questions and the discussions.

We also thank the team that organised the event so effectively.

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"Stressing the importance of differentiating between accepted dogma: "Organic food is better for you" and what is actually "true", i.e. the scientifically proven, Dr Brandt's interesting and balanced paper highlighted the need for a consistent approach and common understanding if claims about organic food are to be accepted.

The science that proves the "extra qualities" of organic food, or equally that demonstrates the detrimental effects of "conventionally-produced" foods, on our health is still developing, as shown by other speakers. But Dr Brandt concluded that organic farming, which has distinct benefits for the environment and food produced, has that "extra quality" that was the Conference's theme.

For consumers, the key benefit of organic produce may simply derive from the fact that positive choices are made in food purchasing that enhance a sense of individual value and well-being".

Alara Wholefoods

"Projects that give statistically robust nutritional differentiation between organic and non-organic food are very welcome by organic food manufacturers".

Duchy Home Farm



RESPONSES

Edited from the transcription of the speeches.

Dr Raph Bundy:

Hugh Sinclair Unit of Human Nutrition, University of Reading

We come from a clinical nutrition background - both clinical researchers in human nutrition and, obviously, we have been asked to give a response at this seminar today.

I was thinking - What does quality really mean? - but then Prof Meier-Ploeger gave us the Hexagon of quality which gave us 6 criteria of quality - authentic; functional; biological; nutritional; ethical and sensual. From my point of view, the nutritional side would be my part of the quality.

We have heard some very interesting talks today and it has been really good with a mixed bag of people. Specifically the two methods which have been developed and really show being able to distinguish between organic and non-organic food based on these different methods of crystallography and fluorescence really.

But of course I have to be honest, from a nutritional point of view, they can't actually say anything about the food having an extra nutritional quality because what they are doing at the moment is giving an observation that they can distinguish between one and the other. We don't really know what that means or we don't know what that means at all in terms of nutrition. I am not saying that they are not important in other sides of quality and maybe authentication; they have a role at the moment for quality.

In nutrition you glean evidence by looking at epidemiology trials, looking at the associations between diet and health and you might have an epidemiological trial or data like saying the Mediterranean diet is good for health and disease based on observation - but to look at cause and effects obviously you have to do one step further and do a clinical trial. To give strong evidence by looking at quality in terms of nutrition for organic food or non-organic food, the one way in the conventional scientific framework, would be to run a trial where you have a group of people given an organic diet and a group of people given a non-organic diet and then observe them and measure certain criteria for outcomes which will then relate to health and that would be the general way to do it.

Dr Steve Hicks:

Hugh Sinclair Unit of Human Nutrition, University of Reading

I am very interested in these ideas presented here today of delayed luminescence and bio-crystallisation and I would be particularly interested as a scientist how these concepts actually relate to the biological functioning of organisms and particularly the organisms that consume these products. By that I mean, animals and us as humans who eat organic produce.

I would want to ask particularly two questions about the differences between organic and non-organic produce. One, is there actually the phenomena we have spoken about here today, do these actually cause effects in us as consumers? And two, are these effects actually beneficial on health?

When I say do these phenomena cause effects in consumers what I mean here is, after we have ingested these foods, are these phenomena still actually going to affect our physical bodies or are they destroyed with the food as one digests it - so in the end the digested food whether organic or not is very similar. One way to test this maybe is, I have read about Dr Popp in Germany who has done tests on humans on bio-photon emission and don't know whether it is possible maybe, to feed humans organic produce and actually see if they have an altered bio-photon emission compared with people who have non-organic produce.

These factors might be not necessarily have a nutritional effect, they might be just something related to the food but doesn't give us any biological benefit e.g. organic foods might differ in size and shape to non-organic foods so they might have different bio-crystallisation or different delayed luminescence. We need to actually show that they have effects on humans. Are these measured phenomena just reflective of chemical content? I think it is probably important to show that there is something different and they are not just an association of the underlying chemistry behind them. For example, the luminescence might be just a different way of measuring the pigment content of the produce.



RESPONSES

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If we were to go about actually trying to measure whether organic produce has a beneficial effect on health scientifically this is not as easy as it might first seem. The way we would do it is to set up an intervention study or a clinical trial and one of the first difficulties we would have is how would we actually measure health? What would form our health outcome? There are various things I could think of that you might want to look at - weight, cholesterol levels, or antioxidant status - this kind of thing. But then more sceptical people will always ask 'are people who show differences in these measures, are they actually more healthy? Do they live longer? These sorts of issues always come up.

Another problem in clinical trials is people are very variable, you don't have a standard person and this means you really need large numbers of subjects to actually demonstrate anything in a clinical trial which makes them very expensive and hard to conduct, to get a really positive meaningful result.

One final point I would like to say is that if we ask the question 'Does organic produce result in good health'? I actually think that by a person taking the choice to consume organic foods and eating food considered good for us, which might cost a little more, they are positively influencing their own health. I am hinting here at the effects that a positive and healthy mind appears to have on the body as science is now beginning to discover.

Alex Smith *from Alara Wholefoods* gave the views of a food manufacturer:

These presentations today gave us some interesting hints. Unfortunately nothing there is going to allow us to build adverts extolling the new virtues of organic food tomorrow and I think that is going to be true for more or less any food manufacturer.

What was very interesting for me on a slightly different level was to hear the differences that were extolled for organic food, especially the fact that it is more stress-resistant than non-organic food, that it seems to have better property for self-organisation than non-organic food and the property it seems to have for disease-resistance as opposed to non-organic food. These are three very important properties that I think were brought out in this morning's presentations.

I don't think the science is robust enough for me to be able to make anything from that other than my own innate sense that this is actually the case. Having considered this case then, I can't do anything other than extrapolate that further and to consider if organic food does have an extra quality that is not really even in that hexagon, in that I think we are now actually in as very exciting and interesting time of developing in society.

I think there is agreement now that the old ways we have organised society are actually breaking down and that something new needs to arise from it. If we have got a food system that is producing food that is more stress resistant, more self organising and more disease resistant and we apply those general principles to how society is organising, then we need a society that is more stress resistant, that is more disease resistant and that is much more capable of self organisation.

So it does seem to me from the speech we were given this morning is that organic food and the systems that are inherent in it and attributes we have had described, actually do make it a food that is a food fit for the future and it seems to me that that is an extra quality that I've taken from this morning's session and it is kind of crystallised that view in my mind. Quite what the ramifications of that are I am not quite sure, but it has in any reinforced my view that out of all of those developments that we need now, organic food agriculture is the one that does provide those coherent elements that will allow society to reform in a sustainable way.

Lynda Brown, *food writer and campaigner*:

I wanted to really make just a couple of very general points. I would like to say that I have been following the progress of this work for about 5 years now and I wish to declare my hand. I find that it excites me scientifically, intellectually and emotionally. It also seems to me that this work opens up a Pandora's box of potential opportunities and threats, not to mention heated debate but I think that is one of its great virtues also. It does generate food for thought but I thought probably the best contribution I could make was almost to take a human perspective.



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The first point I want to air is that it seems to me from a consumer point of view that any serious scientific work which helps us to understand both what makes and keeps us healthy is a GOOD idea. From my point of view it is a total no-brainer. As a nation we are obsessed with health. The problem is because of the huge lifestyle changes, very few people are prepared to bother to nourish themselves with the right kind of food that will not only avoid bad health but will significantly encourage good health. That's the problem that we face and it seems to me that approaches that help consumers to think about health in a more qualitative and holistic way just might nudge them in a different and more constructive direction than the plethora of confusing nutritional advice we have had the misfortune to labour under in this country in recent years. At some level I just don't think people believe any more.

Where diet is concerned, there is widespread disillusion with conventional thinking, we are all hopelessly confused and I think the sooner we face that then the sooner we might begin to do something about it. I think these kinds of approaches just might capture that spark we are going to need to move things on. Indeed, you could argue that it is precisely this kind of approach whose time has come and I think that is for two reasons.

Firstly, at an emotional level I do believe it resonates with us as human beings or at least it has a much better chance of doing so which is another way of saying that it just makes good commonsense. We do all taste stress every single day of our lives. You can get a handle on the kind of self-realisation or self-organisation concept, indeed there is a multi-billion dollar industry out there just getting us all to self-realise ourselves every single day of our lives. We can understand that. There are those of us, like myself for example, who have spent half our lives feasting on seasonal home-grown fruit and vegetables. Now we absolutely know that they make and keep us healthy. My vegetables have a vital quality that shop-bought produce doesn't and it is not just because they are fresher. It is the soil, it is the way they are grown. You only have to look at my soil to know it and to coin that phrase 'it's not magic, it's muck' - and it is.

Now as a consequence my empirical, and as it happens I did go to university to become a scientist, and my experiential experience plus my bionic health is all the proof I need to know that you are what you eat. Of course, if I could prove it I would be so elated that that would immediately boost my immune system by 200% as far as I am concerned, job sorted! Nor do I think that I am unusual in this. I do not believe that we should ever discount the feel-good factor. It is something I am always banging on about and Steve Hicks has just hinted at this. Why do you think that organic food has finally taken off? You can't blame it all on the media or food scares, however horrendous they might have been. At some fundamental level we know it makes sense and my hunch is that this kind of approach towards diet, or what I prefer to think of as nourishing ourselves, will hit those same kinds of buttons.

The other reason why I believe now is the right moment for this kind of approach is pragmatic. Health, or rather the consequence to the NHS in this country of ill health, which is due primarily to the de-vitalised food we actually eat, instead of the nourishing and vital food we should be eating has now hit the political fan big time. Like so many of today's issues, time is running out fast and if we really are to have any chance of reversing the decline we are going to have to radically re-engage and reassess the whole health debate. I don't think the old paradigms are working, as consumers we are not heeding the message and we do desperately need to 'spin' the role of food in health in a different and literally fresher way, the point being we simply can't afford not to anymore.

I wanted to make one more point which is slight heresy but never mind. I am very acutely aware that this research is fuelled by a desire and a necessity to substantiate whether or not organic food is better for you. The debate between organic and conventional food, as some of us know, is so loaded that I personally think that this brave bunch of scientists should be congratulated for even trying. Anything to do with organic versus conventional is a David and Goliath scenario. It may be heresy but what I would like to see, and what I most hope for, is that the word "organic" is taken out of this particular equation and that this kind of approach be incorporated into mainstream scientific nutritional thinking and research. If the nation's health predominates society which it will do, then we are going to need all the help we can get and as many different viewpoints on how to tackle it as possible.

We also need to invest in non-conventional approaches. They do provide an injection of fresh air and, if you like, act as antioxidants in their own right. The inequality of funding in any kind of research which tries to think outside the conventional box continually frustrates me and I find it immensely narrow minded and protectionist and I actually think that consumers and society as a whole deserve better.



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It is not any threat to the consumer to pursue these kinds of approaches whatsoever, only to the establishment and the status quo, which undoubtedly sounds emotional but let's not forget Galileo had the same trouble too and hopefully we have moved on a bit! I just think we should get on with it and I think in the course of time if it really does appear that food produced using a certain system of agriculture has nutritional, or what I prefer to define as nourishing benefits, then I sincerely hope that the politicians and the food industry will be man enough and open-minded enough to embrace it. I want to finish with the following quotation from Albert Einstein (seen in The Kindersley Centre's female toilets!); "If at first an idea isn't absurd there is no hope for it".

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Elm Farm Research Centre (EFRC) is one of the UK's leading research, development and advisory institutes for organic agriculture.

For more than 20 years EFRC has played a central role in the development of policy and standards for organic farming and food within the UK, EU and internationally.

The Centre's alliance of practice and policy – on-farm and desk research and consultancy and advice is unique.



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