

**A workshop to translate
soil management science
into best practice**

Manage your soils: grow your business

Tuesday 15 and Wednesday 16 November 2005

Rothamsted Research, Harpenden, Hertfordshire

**The workshop
has been awarded
8 BASIS points**



The Applied Research Forum for Farming and Food was established in 2003 following a recommendation in the Report of the Policy Commission on the Future of Farming and Food (the 'Curry Report').



The Forum provides a mechanism for industry levy bodies to collaborate in the development and integration of appropriate strategic and applied R&D programmes and associated knowledge transfer activities, and to influence Government prioritisation and investment in agri-food research.



The aim of the workshop is to reach a consensus on the best strategies for future soil management in England and Wales



Member organisations:
HGCA, MLC, BPC, BBRO, HDC, MDC, PGRO, BBSRC, DARDNI, Defra, FSA, NFU, NFU Scotland, SEERAD, WAG.

Website:
www.appliedresearchforum.org.uk



DAY I

12.15pm – 1.30pm REGISTRATION AND LUNCH

Chair – Mike Attenborough, Meat and Livestock Commission

**1.30pm – 2pm ‘Climate change and potential impacts on soil’
Speaker – (TBC)**

The aim of this presentation is to consider, under a range of the possible scenarios for climate change over the next few decades, the potential impacts on agricultural production and soil management in the UK. Impacts hypothesised have included marked changes in the distribution of rainfall during the year giving rise to a need to manage soil water much more effectively than at present in view of increased possibilities of drought. The suggestion of more intense rainfall at certain times of year may cause increased risk of structural damage and soil erosion. Changes in the temperature and moisture regimes resulting in increased rates of organic matter decomposition may contribute to soil structural decline.

**2pm – 2.30pm ‘Global situation – influences of markets and economics’
Speaker – John Marsh, Reading University**

Agricultural markets are increasingly controlled by global mechanisms, both in terms of overall performance of national economies within the global context and in terms of the market forces which frequently cross national and regional boundaries. Understanding the nature of these processes and their potential impacts on the maintenance and development of local and regional agricultural markets is essential if farming is to be an economically successful activity. Issues to be considered range from global changes in production and trade, the influence of supermarkets and more local matters such as trends in consumer preferences.

**2.30pm – 3pm ‘Guidance or regulation – analysis of the system by DPSIR’
Speaker – Stephen Nortcliff, Reading University**

In recent years there has been a substantial increase in the recognition of the importance of soil within the broad environmental framework but specifically in respect of agricultural activity, and there is now a recognised need to protect soil quality and maintain the functions of soil. The DPSIR framework (Driver-Pressure-State-Impact-Response), which has been influential in developing strategies for soil protection will be explained. Strategies being developed at both UK and EU levels will be reviewed with the particular emphasis on the changes in agricultural management which may be necessary to protect soil and maintain its function of agricultural production.

3pm – 3.20pm COFFEE

**3.20pm – 3.50pm ‘Soil fertility – soil as a living biological entity’
Speaker – Karl Ritz, Cranfield University**

For many years it has appeared that many managers of the soil have considered it to be an inert body to which nutrients must be added to ensure production. It is increasingly recognised that while the balancing of inputs and outputs of nutrients is important the soil must be recognised as a living biological entity if it is to perform the production function. The biological processes in the soil are critical to many of the functions performed by soil and the sustainable use of the soil requires these biological processes to be recognised and the soil managed to ensure that they are optimally maintained. The concept of "living soil" needs to be explained clearly and accurately whilst avoiding an overly complex or unscientific treatise.

**3.50pm – 4.20pm ‘Agricultural production and soil – what is the current situation in England and Wales?’
Speaker – Andrew Clark, NFU**

There is a lack of information on key indicators of soil quality and uncertainty as to how early stages that might precede an irreversible decline of soil function would be identified. Discussion will encompass review of the state of play of agricultural production and the nature of the soil supporting this production. Is there evidence of changes in the nature of the soil which have resulted in declines in production or increased costs of management? Is more research needed to identify and validate soil quality indicators? What will CAP reform provide? What are the opportunities under Environmental Stewardship and what further challenges could the Water Framework Directive present?

4.20pm – 4.50pm Question and Answer session

5pm Coaches depart Rothamsted Research for hotels

6.30pm Coaches depart hotels for dinner at Hatfield House

7pm Arrive at Hatfield House

7.30pm DINNER – ‘Best of British’ fare (Guest of Honour: Lord Bach, Minister for Food, Farming and Sustainable Energy)

DAY 2

Chair – Mike Storey, British Potato Council

These short presentations are intended to provide up-to-date information and insights from recent research. They will help to inform and stimulate discussion in the Breakout Groups that follow.

9.30am – 9.50am **‘Organic matter’**
Speaker – David Powlson, Rothamsted

Organic matter influences almost all soil properties and functions but it can be difficult to increase, or even maintain, organic matter content in practical farming situations. Research on the influence of management practices on soil organic matter will be described together with findings from recent research attempting to put a value on organic matter content in relation to agricultural operations. The role of soil organic matter in either mitigating or worsening the soil system response to climate change will also be considered.

9.50am – 10.10am **‘Contamination’**
Speaker – Steve Jarvis, IGER

Achieving a balance between nutrient management that optimises crop production but avoids contaminating water or air is notoriously difficult. Recent research aimed at assisting farmers achieve this balance will be described. This will include various decision support tools and approaches to nutrient management. The potential for soil to become contaminated by chemicals from external sources will be considered together with approaches to minimising the risks.

10.10am – 10.30am **‘Soil structure and erosion’**
Speaker – Andy Whitmore, Rothamsted
(Co-author: Dr Philip N Owens, National Soil Resources Institute)

Maintaining good soil physical conditions is essential, not only for production in the short-term but also for the maintenance of soil functions and long-term sustainability. It is easy for soil to suffer physical damage through inappropriate management or from a combination of weather conditions and agricultural operations. On grassland, pressure of grazing can cause structural degradation and, in both arable and grassland situations, physical damage can be a precursor to soil erosion. Erosion has serious consequences for off-site damage including water pollution. Current understanding of these processes will be described together with implications for management practices.

10.30am – 11.30am **Breakout Groups (coffee served in rooms)**
Each group to discuss and propose consensus answers to three questions.

Chair – Graham Jellis, Home-Grown Cereals Authority

11.30am – 12.30pm **Feedback from breakout groups**
(5 x 10 minute slots)

12.30pm – 1pm **Break – during preparation of summary**

1pm – 1.30pm **Concluding overview and summary**
Alastair Leake – The Allerton Trust

1.30pm **LUNCH**

2.30pm **Depart**



