Soils are Alive Newsletter

Volume 2 No. 3 2001

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Welcome.. This is the third issue of our Soils are Alive Newsletter for 2001. Lyn Abbott

A new unit called **Organic Agriculture 302** will start in 2002 at The University of Western Australia (Faculty of Natural and Agricultural Sciences) in Semester 2.

The unit is an introduction to the principles of organic agriculture. Students will investigate the importance of knowledge of soils, plants, animals, economics, marketing and social issues in establishing effective organic production systems.

A problem-based learning approach will be used and students will work in groups to explore issues related to organic production. Both theoretical and practical analysis of aspects of organic agriculture will be supported by lectures and discussions on topics such as nutrient and energy flows in organic farming systems, the use of animals and crops, economic and environmental assessment and consumer issues.

The Unit Coordinator is Lyn Abbott (see contact details below at the right).

The starting date is Monday 22nd July and classes are held on Mondays (4.00-6.00pm) and Tuesdays (10.00-11.00am) throughout semester. If you are interested in enrolling in this unit, contact Lyn Abbott or check the UWA Extension website (www.extension.uwa.edu.au) to obtain information about ACCESS UWA.

Acknowledgements

The Ian Potter Foundation supported the establishment of the *Soils are Alive* Newsletter and the soilhealth.com website.

The Land Management Society (LMS) initiated the Know Your Soil Biology: *Soils are Alive* workshops that we present throughout Western Australia.

LMS Website: http://www.lmsinfo.com

Organic Agriculture

By Dr Richard Cookson

Staff at the Centre for Land Rehabilitation and the Soil Biology group at The University of Western Australia are committed to improving the understanding of the principles of organic agriculture as applied to soils in Western Australia.

In October 2001, we collaborated with Steve McCoy of the Department of Agriculture WA to present an Organic Agriculture Workshop and Symposium to identify and discuss the key soil fertility issues for organic production systems in WA.

Two keynote speakers from the UK, Dr. Liz Stockdale and Dr. Keith Goulding, presented workshop sessions on soil fertility and food quaility. Liz and Keith then faciliated the discussion so that the producers and scientists attending could raise soil fertility issues which may be restricting organic production, especially on sandv soils. Outcomes from the workshop and symposium are presented in this newsletter.



Photo Courtesy of NRE Rutherglen

The University of Western Australia



Dr Richard Cookson is a Postdoctoral Fellow in the Centre for Land Rehabilitation at the University of Western Australia funded by the Foundation for Research, Science and Technology in New Zealand. Richard is investigating how farming systems, including organic systems, affect nitrogen transfer and related changes in microbial communities in soil.

Key issues identified at the WA Organic Agriculture Workshop and Symposium in October 2001

- WA has specific conditions of Mediterranean climate and very sandy soils, which create unique biological, chemical and physical constraints for soil fertility management.
- The inherent low levels of organic matter in the soils mean that there is a need to identify the functional benefits of organic matter for pH, soil structure, wetability, CEC etc. What kinds of organic matter and how much are needed?

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For further information, contact: Associate Professor Lyn Abbott Centre for Land Rehabilitation Faculty of Agriculture The University of Western Australia Nedlands, WA 6907 Australia email: labbott@cyllene.uwa.edu.au

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Photo Courtesy of NRE Rutherglen

Key Issues continued:-

- Understanding of organic dynamics in the short and long-term. Humification of added organic matter, forms and turnover of organic matter in soil.
- Managing soil fertility in whole systems to increase sustainability – interactions of all management practices (soil, crop, weed control, pest and disease management), need to develop farm-specific management systems.
- Management of crop residues (stubble, green manures etc) for optimising nutrient cycling
- Interaction of tillage and soil fertility management
- Matching nutrient supply to crop demand getting the timing right
- Organic sources of nutrients do not usually contain nutrients in the optimum ratios to match crop demand – getting the balance right can be difficult.
- Nitrogen managing legumes for N₂ fixation and transfer of N to following crops through the rotation.

- Nitrogen what sources of extra N are available and how should they be managed?
- Phosphorus and potassium what sources of supplementary nutrients are available, how should rates and timing of application be decided?
- Micronutrients.

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- pH and cation/anion balance in soils.
- Cost effectiveness of soil fertility management practices in practical application for a range of organic production systems.
- Impact of organic farming systems on soil quality. Are there indicator measurements for soil quality that are appropriate for WA?
- Environmental impact of organic farming practices – pollution of ground and surface waters, heavy metals, increased bio-diversity.
- Effects of organic management practices on soil biological diversity, function and amount. Does biological diversity affect soil fertility and/or pest and disease control?
- Knowledge of organic systems and practices needs to be shared more widely (farmers-advisors-certifiersresearchers). Development of links and practices of knowledge sharing – for learning together.
- Development and improvement of standards to enable a sound basis for sustainable management practices – linking scientific advice into the review of standards.

Photo: Annie Dunn

Most of the the questions raised at the Organic Agriculture workshop and symposium are fundamental problems faced in conventional as well as organic systems. Therefore a greater understanding of these issues will lead to the adoption of organic practices by conventional farmers. This may help maintain product price and market assess as consumers demand food produced in a environmentaly sustainable system.

UWA Extension Study Opportunities:

Continued from front page....

The ACCESS UWA program offers you the opportunity to study units in almost every subject and every University department on your own terms.

Study without the commitment of a degree—either choosing to upgrade your qualifications, soaking up some knowledge, or attending for your own enjoyment.

There are no University entrance requirements for ACCESS UWA students. The only prerequisites are those set out in the faculty handbooks. You can either take part as an Audit student, which means you sit in on lectures, or as a continuing education student, where you attend lectures and tutorials and participate in assessment.

Credit towards a degree may be granted in a limited number of units if an ACCESS UWA student gains admission to The University of Western Australia.



Soils are Alive Newsletter 2001 No. 3

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If you would like to receive more information, please contact Lyn Abbott labbott@cyllene.uwa.edu.au

Editor: Nui Milton nmilton@agric.uwa.edu.au