



In the Name of Allah, the Merciful the Beneficent

Soil Science News

Soil Science Society of Pakistan

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July – September 2003

Vol. 4 No. 3

EDITORIAL

A Soil Quality Monitoring System for Sustaining Agricultural Productivity

In the Mediterranean region, good quality soils once supported successful ancient civilisations of the Phoenicians, Greeks and Romans. However, deforestation, over-cultivation, and over-grazing of their soils caused extensive erosion, leaving barren hillsides as the remains in many parts of the region today. Similarly, well flourished civilisation of Ancient Mesopotamia declined and eventually became extinct because of the problems of soil salinity and silting up of irrigation channels. Thus, history teaches us for the need to protect quality of our soils in the interest of sustaining agricultural productivity.

Humans, however, often ignore the crucial lessons of the past at our peril. Today, the same problems of soil degradation are threatening many parts of the world, including Pakistan. According to one estimate, the soil in 11% vegetated area of the world has been degraded since 1945. Also, some recent estimates indicate that the earth is losing 24 billion tones of topsoil every year. This implies that about 9.6 million hectares of productive land or almost one-half of the total cultivated area of Pakistan is being lost each year.

It has been advocated that a Soil Quality Monitoring System (SQMS) should be developed for monitoring and interpreting changes in soil quality that in turn reflect on the sustainability of agricultural management practices. The SQMS will not only provide a system for describing soil health but will also function as a tool for predicting the impact of existing management practices on sustained productivity of a specific land area. The SQMS could help in describing both current health of

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NEWS AND VIEWS

A Phosphate Fertilizer Saving Technology for Wheat

National Agricultural Research Centre soil scientists have developed and field demonstrated a band placement (banding along wheat rows) technology whereby fertilizer requirement of wheat crop can be reduced by without any yield loss. In this technology, only one-half of the broadcast fertilizer dose is band-placed along the crop rows at the time of sowing. Because of much less fertilizer fixation in the soil by this method, phosphate availability to the crop is enhanced substantially compared with broadcast application. Thus only 18 kg P_2O_5 (40 kg DAP) per acre applied by band placement technology is as effective as 36 kg P_2O_5 (80 kg DAP) per acre applied by conventional broadcast method. NARC Farm Machinery engineers and scientists have also developed and demonstrated a drill for effective fertilizer band placement in wheat. Recently, PARC, has signed an MoU with a farmer machinery manufacturer in Faisalabad for making this drill available to wheat growers at a reasonable price.

By adopting this technology, potential fertilizer saving on the whole wheat growing area in the country would be Rs.2,250 million per annum. And even if phosphate fertilizer is band-applied on only 20% of the total wheat acreage, fertilizer saving would be of Rs.500 million every year. Substantial saving in foreign exchange spent on importing phosphate fertilizer would be an additional benefit to the national economy.

WORKSHOP AND TRAINING COURSE

NARC Trains Afghan Soil Lab Technicians

As a consequence of the past 23-year turmoil in Afghanistan, agricultural research

infrastructure has been devastated; and the lab personnel needed orientation and training in the latest laboratory procedures for making at least one soil testing lab functional in the country. A US-AID project on "Water and Nutrient Management in Irrigated Wheat in Afghanistan" also aimed at rehabilitating soil testing service in the country. This project, was executed jointly by Cornell University, New York; Hartford University, Connecticut; Texas A&M University, Texas; and CIMMYT-Bangladesh.

On the request of this project, a one-month training on "Soil, Plant and Fertilizer Analysis and Data Interpretation" was organized by the Land Resources Research Program, NARC,



From left to right.

1st row; Miss N. Sadat, Mr. B. Harifal, Dr. A. Rashid, Mrs. S. A. Khil, Mr. M. D. Stanikzai, Mrs. L. A. Rahinzai
2nd row, Mr. A. Khan, Mr. M. Zahis, Dr. Mahmood-ul-Hassan, Mr. E. Rafique, Dr. S. Gul, Dr. N. Bughio,

Dr. A. Shakoor, Mr. M. Tauseef
Islamabad, from 25 July to 22 August 2003 for five Afghan laboratory technicians working at the Soil Testing and Plant Analysis Laboratory, Department of Agriculture, Kabul. This hand-on rigorous training addressed all aspects of soil, plant, and fertilizer analysis, i.e., sampling, analytical procedures, and data interpretation.

Nuclear and other Advanced Techniques in Agricultural and Biological Research

The 31st Post-Graduate Training Course on "Nuclear and other Advanced Techniques in Agricultural and Biological Research" was held from 13-24 October 2003, at NIAB. The course included lectures and practical, on the use of radio- and stable-isotopes in soil science research; and Soil Scientists of different organizations participated in this course.

HONOURS AND AWARDS

Dr. M. Mohsin Iqbal, Chief Scientist/Director NIAB, Faisalabad has earned 13th Star Award

2002 in recognition of his outstanding scientific and technological contributions. Dr. Mohsin Iqbal, who is a life member of the Pakistan Nuclear Society, has been elected a Fellow of the Society and has been awarded a shield in appreciation of his outstanding services to programme of the Pakistan Atomic Energy Commission.

Congratulations to Dr. Mohsin Iqbal for earning these exceptional distinctions!

PROMOTIONS, APPOINTMENTS, POSTINGS

The following young soil scientists have

been appointed Assistant Research Officers in various Sections (Soil Chemistry, Soil Bacteriology, Soil Biochemistry, Soil Fertility, Pesticide, and Jute) of Ayub Agricultural Research Institute, Faisalabad:

Mr. Sajjad Mansoor, Mr. Khalid Rashid, Mr. Tahir Majeed, Mr. Waqqar Ahmad, Mr. Waseem Raza, Mr. Muhammad Idris, Ms. Asma Rauf, Mr. Rizwan Ahmad, Mr. Naseem

Akhtar, Mr. Muhammad Amjad Qureshi, Ms. Shamsa Kanwal, Ms. Shagufta Gill, Mr. Asif Ali, Mr. Saeed Ashraf and Mr. Sarfraz Nawaz

Dr. M. Mohsin Iqbal, Chief Scientist/Director NIAB, has been appointed a member of Board of Advanced Studies, University of Agriculture, Faisalabad.

Dr. A. Rashid, CSO/Program Leader, Land Resources Research Program, NARC has been appointed a member of Academic Council, University of Arid Agriculture, Rawalpindi for the term 2003—2005. Also, the Pakistan National Accreditation Council has appointed Dr. Rashid as a member of the National Laboratory Accreditation Committee.

Mr. Akbar Hussain, SSO has been conferred additional charge of Director, Arid Zone Research Institute, PARC, D.I. Khan.

Dr. Sabir Hussain Shah, Soil Microbiologist has been assigned additional responsibility of Director, Soil and Plant Nutrition, ARI, Tarnab, Peshawar.

Mr. Attar Khan Jarwar, Assistant Agricultural Chemist, Soil and Water Testing Laboratory, Mirpur Khas has taken over the charge of Agriculture Chemist, Soil Chemistry Section, Agricultural Research Institute, Tandojam.

Prof. Dr. Riaz A. Khattak has been appointed Convener, Research Review Committee, NWFP Agricultural University, Peshawar.

Congratulations to All from Soil Science News!

VISITS AND FELLOWSHIPS

Dr. M. Sharif Zia, CSO/Incharge, Natural Resources Division, PARC and **Dr. Zahoor Aslam**, PSO, NIAB participated in the 7th International Conference on Dry Land Development, Organized by ICARDA, held in Tehran from 14-17 Aug. 2003.

Dr. M. Mohsin Iqbal, CSO/Director NIAB, Faisalabad participated in an IAEA Regional Workshop on “National Planning, Selection and Design of International Atomic Energy Agency Technical Cooperation Projects” held in Daejeon, Republic of Korea, 21-24 July 2003. At the Workshop, he presented national procedure for evaluation and selection of IAEA TC project requests in Pakistan.

Dr. Fayyaz Hussain, SSO, Land Resources Research Program, NARC, Islamabad participated and successfully completed a one-month FAO/IAEA interregional training course on “The Use of Nuclear and Related Techniques to Increase Water Use Efficiency in Rainfed and Irrigated Agriculture”, held at the FAO/IAEA Agricultural and Biological Laboratory, Seibersdorf, Austria on 1—29 July 2003.

Dr. Muhammad Shafiq, PSO, Water Resources Research Program, NARC, Islamabad participated in 16th Triennial Conference on “Soil Management for Sustainability” held at the University of Queensland, Brisbane, Australia on 13-18 July, 2003. The conference was organised by International Soil Tillage Research Organization. Dr. Shafiq presented a paper on “Success of permanent raised-beds in a maize-wheat system in Pakistan”.

Dr. Sikander Ali, CSO/Head Soil Biology & Plant Nutrition Division, NIAB; made scientific visit to China and Indonesia in relation to organic matter recycling and soil fertility, from 7 to 18 April, 2003, , under the IAEA Project.

RESEARCH GRANTS

Prof. Dr. Amanullah Bhatti has been awarded the following two research projects:

- i. Modelling spatial variability and mapping of soil test results of some districts of NWFP, sponsored by Higher Education Commission.
- ii. Restoring crop productivity of eroded land through integrated plant nutrient management, sponsored by Pakistan Science Foundation.

Prof. Dr. Farmanullah, Department of Soil and Environmental Sciences, NWFP Agricultural University, Peshawar has earned a research grant for investigating “Effect of slope steepness and green manuring on runoff, erosion, soil properties and soil fertility in eroded land of northern NWFP”, sponsored by Pakistan Science Foundation.

Prof. Dr. Izharul Haq, Department of Soil & Environmental Sciences, NWFP Agricultural University, Peshawar has received a research grant on “Management of Salt Affected Soils and Brackish Waters in Pakistan”, sponsored by PARC under Agricultural Linkages Programme.

DOCTORATE IN SOIL SCIENCE

Mr. Wisal Muhammad, Senior Scientific Officer, Nuclear Institute for Food and Agriculture, Tarnab, Peshawar has completed Ph.D. degree. His dissertation was on “Strategies for improving wheat productivity and soil organic fertility in irrigated and rainfed environment” which was supervised by Prof. Dr. Zahir Shah and Prof. Dr. Amanullah Bhatti, Department of Soil and Environmental Sciences, NWFP Agricultural University, Peshawar.

Congratulations to Dr. Wisal Muhammad from Soil Science News!

RETIREMENT

Mr. Munir Ahmad, Principal Scientific Officer, Soil Biology & Plant Nutrition Division, NIAB, Faisalabad has retired after more than 38 years service. Mr. Munir did his B.Sc. (Agri.) in 1963 from UAF, and M.Sc. in

1966 from Sindh Agri. College, Tandojam. His research focus was on nutrient availability; he has about 30 publications in different reputed journals/proceedings.

We pray for him good health and prosperous life.

Security and Soils” took place in Tutzing, Germany, on 1-4 April 2001.

president of International Union of Soil Sciences and an introductory chapter added by the editors, the publication contains chapters concerning: (I) Food security – starting point, approach and consequences (4 papers); (II) Sustainable food security – alternatives for agriculture (9 papers); and (III) Perspectives for sustained food security (2 papers).

Soil scientists must read this interesting publication!

Price: EUR 12.00.

Orders to: Torba Soil & Society, 88 rue Jean-Baptiste Poquelin, F-34070 Montpellier, France. Fax: +33-467270465.

10th Congress of Soil Science 2nd Announcement

Soil Science Society of Pakistan is organizing 10th Congress of Soil Science on March 16-19, 2004 at Sindh Agriculture University, Tandojam. Congress theme is “Management of Natural Resources for Food Security”. Abstracts Deadline is 31 December, 2003. For registration, contact:

- i. **Dr. Muhammad Ibrahim**, Agri. Chemist (Soils)/ Secretary, Congress Technical Committee, Ayub Agricultural Research Institute, Faisalabad. Tele: 042-657281-90/240, Email: soilchem@fsd.paknet.com
- ii. **Dr. Kazi Suleman Memon**, Professor, Dept. of Soil Science, Sindh Agriculture University, Tandojam, Sindh. Tel: Office.0221-765870/350, Res. 0221-771695, 92-0221-765689 Fax: 0221-765300, Email: ksmemon@hyd.paknet.com.pk
Detailed information is available on Society's website: www.sssp.20m.com.

PUBLICATIONS

Soil Water Dynamics, A.W. Warrick, 2003.

This book is intended for use as a text in advanced soil physics or vadose zone hydrology, for use by university students, researchers and modelers interested in soil water flow, contaminant transport and environmental pollution abatement.

Price: \$ 85.00, Orders to: Oxford University Press, Order Department, 2001 Evans Road, Cary, NC 27513, USA. Fax: +1-919-677-1303. Homepage: www.oup-usa.org.

People Matter: Food Security and Soils,

R. Lahmar, M. Held and L. Montanarella, 2003. The international conference on “People Matter Prefaced by Prof. Alain Ruellan, former – Food

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A Soil Quality Monitoring System.....

the soil and trajectory of the change in individual quality indicators but will also help in predicting the impact of recent management practices on agricultural productivity.

Furthermore, in case of an evidence of soil quality decline, information on the affected soil properties will be quite valuable in determining cause of the decline and, thus, would help in identification of suitable management strategies for arresting soil degradation and sustaining agricultural productivity.

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- **Mr. Ahmad Sami Ullah**, SSO, Land & Water Use Section, Arid Zone Agricultural Research Centre, Quetta. Email: ahmadsamiullah@yahoo.com
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