



In the Name of Allah, the Merciful the Beneficent

# Soil Science News

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Soil Science Society of Pakistan

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## Editorial

### *Healthy Soil a Prerequisite for Healthy People*

Most people are aware that clean air and water are prerequisites for enjoying a healthy life. Fewer people realize that their health as well as well-being also depends on the health of another component of our environment - soil. As soil supports the growth of most of our food and fibre needs, its productivity is a major factor in the economies of a country. But soil also has a much broader role globally. Soil acts as a filter, cleaning air and water. It exchanges gases with the atmosphere and thus influences global climate. Soil receives organic wastes and recycles their nutrients back to plants; it also holds and breaks down some *toxic* wastes. Because soil plays such a key role in world health, economies, and environmental stability, we must conserve and use this precious resource in a sustainable manner.

Sustainable agriculture is a way of farming that can be carried out for

generations to come. This long-term approach to agriculture aims at efficient production with the wise stewardship of the earth's resources. It is hoped that, over time, sustainable agriculture will keep meeting human needs for food and fibre, will protect the natural resource base,

*Contd..... page 4*

## News and Views

### *Soil Mining Threatens Food Security*

FAO and IFA jointly organized a conference to address the role of fertilizers in sustainable food security with input from key stakeholders in the field of plant nutrition, food production, farm management system and emerging technologies from March 26-28, 2003 at Rome, Italy. One of the conclusions of the conference was that the depletion of nutrient stocks in the soil, which is occurring in many developing countries, is a major, but often hidden, form of land degradation, making agricultural production unsustainable. This problem was highlighted at last year's *World Summit on Sustainable Development* in Johannesburg, South Africa.

Ongoing soil mining and expansion into fragile ecosystems continue to degrade soils and reduce agricultural productivity in many developing countries. To help farmers access the necessary plant nutrients, investments in rural infrastructure and institutional innovation are paramount.

### *Fertilizer Offtake/Consumption 2002-03*

The provisional fertilizer offtake/consumption data released by NFDC show that total nutrient offtake during fiscal year 2002-03, was 2,944 thousand tones which increased marginally by 0.5 per cent over 2001-02. The increase in nitrogen offtake was 1.5 per cent and phosphate offtake went down by 3.4 per cent. Urea offtake was 4.26 million tones (increased by 1.8 per cent), which DAP offtake was 1.1 million tones as of last year. It shows no

significant change in fertilizer offtake/consumption during last two years.

all stake holders including senior scientists of the country.

### ***Time of Nitrogen Fertiliser Application***

Three year's field trials, conducted by Soil Chemistry Section, Ayub Agricultural Research Institute, Faisalabad, on wheat showed that N applied at bed preparation before sowing gave higher or equal wheat grain yield compared with its split application.

### ***Boron Deficiency in Calcareous Soils Reduces Paddy Yield and Impairs Grain Quality***

Despite being a tolerant species, rice suffers with boron (B) deficiency in alkaline soils of Pakistan. Five multi-location, non-replicated field experiments in alkaline (pH, 7.9–88.8), B-deficient (HWE B, 0.21–0.42 mg kg<sup>-1</sup>) soils in major rice-growing area of Punjab province, Pakistan were conducted. Boron application increased paddy yield of *Basmati-385* by 25% and of Super *Basmati* by 20% over control, primarily by reducing panicle sterility from 28% to 16% in *Basmati-385* and 23% to 14 % in Super *Basmati*. Also, B application enhanced milling recovery as well as head rice recovery, and improved desirable kernel quality parameters, like stickiness, elongation ratio, and bursting-on-cooking.

### ***Workshop and Training Course***

#### ***Promotion of Potash Use for Balanced Nutrient Management***

Pakistan Agricultural Research Council is organizing a one-day workshop on Promotion of Potash Use for Balanced Nutrient Management on September 2, 2003 in Islamabad. This workshop aims at discussing and resolving difference of opinion regarding the need for potash use and suitability of potash sources for various crops. The participants would include

### ***Soil Physical Measurements, Instrument Use***

#### **10<sup>th</sup> Congress of Soil Science**

The Soil Science Society is holding its 10<sup>th</sup> Congress of Soil Science at Sindh Agriculture University, Tandojam on March 16-19, 2004. Congress theme is "Management of Natural Resources for Food Security" for 10<sup>th</sup> Congress of the Society.

For registration contact:

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*Detailed information is available on society's website: [www.sssp.20m.com](http://www.sssp.20m.com).*

### ***and Data Interpretation***

A six-day training course on Physical Measurements, Instrument Use and Data Interpretation was organised by Soil Science Section, ARI, Tandojam, 16-21 June, 2003, with technical assistance from Land Resources Research Program, NARC, Islamabad. The course was attended by young soil scientists.

### ***Honours and Awards***

**Prof. Dr. Aman Ullah Bhatti**, Chairman, Department of Soil and Environmental Sciences, NWFP Agricultural University, Peshawar has received the Award of **Izaz-i-Fazeelat for the year 2002** conferred upon him by the President of Islamic Republic of Pakistan in recognition of his outstanding services in the field of science, education and academics. Dr. Bhatti is already the recipient of **Best University Teacher Award 2001 from UGC**.

**Congratulations to Professor Bhatti for earning this exceptional distinction!**

### ***Promotions and Appointments***

**Dr. Izhar-ul-Haq**, Agri. Chemist, ARI, Ternab, Peshawar, has been appointed Professor of Soil Science at NWFP Agri. University, Peshawar.

**Mr. Ahmad Hussain** has been promoted to BS-18 and has joined as Agricultural Chemist, Soil and Water Testing Laboratory, Gujranwala.

**Dr. Muhammad Younus Nadeem** has been promoted to BS-18 and has joined as Associate Agricultural Chemist, Soil Chemistry Section, Ayub Agricultural Research Institute, Faisalabad.

**Mr. Badr-uz-Zaman** and **Mr. Muhammad Ali**, Scientific Officers, Land Resources Research Program, NARC, have been promoted as Senior Scientific Officers.

**Mr. Nabi Bux Jamro** has taken over the charge of Agriculture Chemist (SF) at ARI, Tandojam.

**Dr. Sabir Gul Khattak**, Research Officer, ARI, Tarnab, Peshawar, and **Mr. Shahid Maqsood Gill**, SO, Land Resources Research Program, have been appointed Senior Scientific Officers in PARC and posted at Land Resources Research Program and Rangeland Research Program, NARC, respectively.

## Postings

**Professor Dr. M. Roshan Wagan**, Department of Soil Science, Sindh Agriculture University, Tandojam, has been appointed Director, Advanced Studies & Research, Sindh Agriculture University. Also, he has been appointed Editor-in-Chief, Pakistan Journal of Agriculture, Engineering and Veterinary Sciences published by Sindh Agriculture University.

**Professor Dr. Safdar Ali**, Department of Soil Science, University of Arid Agriculture, Rawalpindi, has been given additional charge of Director, Advance Studies, University of Arid Agriculture, Rawalpindi.

**Mr. Mohammad Hussain Khushk** who was working as Agricultural Chemist, ARI, Tandojam has been posted as Deputy Director (Head Quarter), Agriculture Research Sindh.

## Visits and Fellowships

**Dr. Nisar Ahmad**, Chief/Project Director, NFDC participated in IFA-FAO Agriculture Conference on “Global Food Security and the Role of sustainable Fertilization” held at Rome, Italy from 26 to 28 March 2003. The conference was a practical follow up to recent key political meetings, including the World Food Summit (1996), the Millennium Summit (2000), the World Food Summit: five years later (2002) and the World Summit on sustainable Development (2002).

**Dr. M. Saleem Akhtar**, Senior Scientific Officer, Land Resources Research Program, NARC, Islamabad has earned **George Forster Research Fellowships** of the Alexander von Humboldt Foundation, Germany for the year 2003-2004.

**Professor Dr. Zahir Shah**, Department of Soil & Environmental Sciences, NWFP Agricultural University, Peshawar, has been selected for **Post-Doctoral Fulbright Award for the year 2003-04** by the Council for International Exchange of Scholars through US Educational Foundation in Pakistan. Fulbright is a international award. Prof. Dr. Zahir Shah will spend his postdoctoral Fulbright fellowship at the University of Colorado, Fort Collins, USA, commencing 1 September, 2003.

**Dr. A. Rashid**, CSO/Program, Land Resources Research program, NARC was a resource person Training Workshop and Travelling Seminar in Afghanistan on “Water and Nutrient Management with Special Emphasis on Irrigated Wheat”, 8-22 May 2003 organised by Cornell, Hartford, and Texas A&M Universities and CIMMYT.

**Mr. Shahid Maqsood Gill**, SSO, RRP, and **Mr. Tariq Sultan**, SO, LRRP, NARC, have been awarded “**Indigenous Ph.D Scholarships in Pakistan for Development of S&T Manpower – 2003**” by the Higher Education Commission, Islamabad.

## Research Grants

**Dr. M. Salim**, CSO/DDG, INRES, NARC has been awarded a Coordinated Research Project on “Management of Salt-affected Soils and Brackish Water in Pakistan” costing Rs. 29.048 millions under Agricultural Linkages Program. Dr. Salim will Coordinate the project which comprises of seven research units, i.e., ARI, Tarnab, Peshawar; Soil Salinity Research Institute, Pindi Bhattian; Soil Sci. Deptt., Univ. Agri., Faisalabad; Salinity and Environment Management Division, NIAB, Faisalabad; Soil Sci. Deptt., Shah Abdul Latif Univ., Khairpur; ARI, Sariab, Quetta, Land Resources Research Program, NARC, Islamabad.

**Dr. M. Shafiq**, PSO, Water Resources Research Program, NARC, has been awarded an ALP Research Project on “Increasing and Sustaining Crop Productivity of Water-eroded Land through Rainwater and Soil Fertility

Management. The project is worth Rs. 4.101 million.

## Retirements

**Mr. Khet K. Khemani**, Soil Fertility Officer, ARI, Tandojam, has retired on June 19, 2003.

*We pray for him good health and prosperous life.*

## Publication

Soil Science Society of America has published SSSA Book Series Number 5 “**Methods of Soil Analysis: Part 4 -Physical Methods**”. The Editorial Board decided not to print a third edition of *Methods of Soil Analysis. Part 1 - Physical and Mineralogical*. Rather they decided to divide this volume into two parts. The part containing soil physical measurements has consequently been renamed as *Methods of Soil Analysis. Part 4 - Physical Methods*. Hardcover, 1,692 pages, 2002. ISBN 0-89118-841-X. Price: \$100.00 Item No 40328.

*Form page 1*

### **Healthy Soil for Healthy People**

and will prevent the degradation of soil and water resources.

The most important link between farming practices and sustainable agriculture is the health, or quality, of our agricultural soils. If soil becomes degraded, more resources in terms of time, money, energy, and chemicals will be needed to produce less-abundant crops of a lower quality, and the goals of sustainable agriculture will not be met. On the other hand, if soil degradation is reversed, *soil health* will improve. However, poor soils are less able to hold and use these chemicals, which often find their way into surface water and groundwater. Unhealthy soils are also less effective in their role of gas exchange and maintenance of air

quality. This, *soils health* degradation could lead to disasters in human and environmental health.

Have we ever thought that in what condition soil of Pakistan are today? Are these soils degrading in quality, and, if so, what measures have been taken to reverse this degradation and to rehabilitate our soils?

For answering these crucial questions; we need to focus on *farming systems* as the main vehicle for halting soil degradation, and maintaining or improving *soil health*. We also need to, *firstly*, identify and describe the main problems of soil degradation. *Secondly*, we need to assess the present status of *Soil health*. *Thirdly*, we need to examine trends in *Soil health* over the last decade. *Fourthly*, we ought to predict future trends in *Soil health*, and suggest solutions to emerging problems of soil degradation. Maintaining or improving *Soil health* by using appropriate farming methods, sustainable agriculture can become a reality. Most of us realize that we cannot keep harvesting good crops, year after year, without investing back into the soil. As *soil health* declines, more fertilizer and pesticides may be needed to maintain acceptable crop

For future generations, we have to keep the precious non-renewable soil resource healthy by applying plant nutrients environmentally acceptable and sustainable way. Also, soils are supplied with all essential nutrients in the required quantity for a good crop yield.

## New Secretary

**Dr. Safdar Ali** Associate Professor, Department of Soil Science, Arid Agri. University, Rawalpindi, has joined as Secretary, Soil Science Society of Pakistan after resignation of Mr. Aslam Kausar due to domestic reasons. Executive Council of society commends the contribution of Mr. Aslam Kausar towards Society.

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